Initial Study/Mitigated Negative Declaration

Golden Avenue over Carbon Canyon Creek Channel

LEAD AGENCY:

City of Placentia

401 East Chapman Avenue

Placentia, California 92870

Contact: **Luis Estevez, Public Works Director**

PREPARED BY:

GPA Consulting

231 California Street

El Segundo, CA 90245

February 2018

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The City of Placentia (City) is proposing to replace the existing Golden Avenue Bridge over Carbon Canyon Creek Channel in the City of Placentia, Orange County, California.

Initial Study/Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13

City of Placentia

_____

Date of Approval

_____

Joseph M. Lambert
Director of Development Services
City of Placentia
CEQA Lead Agency

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MITIGATED NEGATIVE DECLARATION

CITY OF PLACENTIA

MITIGATED NEGATIVE DECLARATION

Pursuant to Division 13, State of California Public Resources Code

Project Description:

The City of Placentia (City), in cooperation with the California Department of Transportation (Caltrans) proposes to replace the existing Golden Avenue Bridge over Carbon Canyon Creek Channel (project) in the City of Placentia, Orange County, California.

Determination:

The City of Placentia has prepared an Initial Study (IS) for this project, and pending public review, expects to determine from this study that the project will not have a significant effect on the environment for the following reasons:

- The project would have *no impact* on agricultural and forestry resources, land use and planning, mineral resources, population and housing, public services, recreation, or utilities and service systems.
- The project would have *less than significant impact* on aesthetics, air quality, biological resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, and transportation/traffic.
- The project would have *less than significant impact with mitigation* on cultural resources, tribal cultural resources, noise and vibration, and mandatory findings of significance *because the mitigation measures would reduce the potential effects to less than significant*.

Mitigation Measures:

- The project will have *no significant impact* on biological resources *because mitigation measures have been incorporated into the project that will reduce potential effects to less than significant*.
- Mitigation measures that will reduce potentially significant impacts resulting from the project to less than significant are summarized in the Mitigation Monitoring Program for the project (Appendix B of the Initial Study).

Joseph M. Lambert **Date**
Director of Development Services
City of Placentia
CEQA Lead Agency

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TABLE OF CONTENTS

Executive Summary ix
1.0 Introduction 1
2.0 Environmental Summary 15
2.1 Introduction 15
2.2 Evaluation of Environmental Impacts 16
2.3 Environmental Factors Potentially Affected 17
3.0 CEQA Checklist 18
3.1 Aesthetics 18
3.2 Agriculture and Forest Resources 21
3.3 Air Quality 23
3.4 Biological Resource 28
3.5 Cultural Resources 35
3.6 Geology and Soils 39
3.7 Greenhouse Gas Emissions 43
3.8 Hazards and Hazardous Materials 45
3.9 Hydrology and Water Quality 51
3.10 Land Use and Planning 56
3.11 Mineral Resources 57
3.12 Noise 58
3.13 Population and Housing 64
3.14 Public Services 65
3.15 Recreation 67
3.16 Transportation/Traffic 68
3.17 Tribal Cultural Resources 71
3.18 Utilities and Service Systems 73
3.19 Mandatory Findings of Significance 75
4.0 References 78

LIST OF FIGURES

Figure 2-1. Regional Location 3
Figure 2-2. Project Location 5
Figure 2-3. Project Footprint 7
Figure 2-4. Orange County Loop Bikeway Project 11

LIST OF TABLES

Table 4-1. SCAQMD Regional Thresholds 24
Table 4-2. Construction Emissions Compared to SCAQMD Regional Thresholds 24
Table 4-3. On-Site Construction Emissions Compared to SCAQMD Localized Thresholds 26
Table 4-4. Short-Term Construction-Generated Greenhouse Gas Emissions 44
Table 4-5. Measured Ambient Noise Levels 59
Table 4-6. Typical Construction Equipment Noise 59
Table 4-7. Typical Construction Equipment Vibration Levels 61

APPENDICES

Appendix A: Engineering Drawings
Appendix B: Mitigation Monitoring Program

EXECUTIVE SUMMARY

The City of Placentia (City), in cooperation with the California Department of Transportation (Caltrans), is proposing to replace the existing Golden Avenue Bridge over Carbon Canyon Creek Channel in the City of Placentia, Orange County, California. The project area is near the border between the cities of Placentia and Yorba Linda, and is located to the east of California Street, west of Rose Drive, north of Brooklyn Avenue, and south of Chicago Avenue and Imperial Highway/State Route (SR-) 90. The project limits would extend 200 feet from each end of the existing bridge, and 75 feet upstream and downstream of the bridge.

This Initial Study was prepared in compliance with the California Environmental Quality Act (CEQA) and the procedures for implementation of CEQA. The purpose of this Initial Study is to assess the potential direct, indirect, and cumulative impacts on the human and natural environment resulting from the project. As the CEQA Lead Agency, the City has primary responsibility for preparing the Initial Study.

The existing bridge was built in 1934, and is an earth-filled reinforced concrete arch bridge supported on concrete spread footings. The existing bridge is 27 feet wide and 34 feet long, and carries two lanes of traffic over the Carbon Canyon Creek Channel. The bridge has been determined to be functionally obsolete, according to a Caltrans Bridge Inspection Report dated September 29, 2011.

The project includes the removal of the existing bridge in its entirety, including the removal of the asphalt overlay, reinforced concrete deck arch bridge, reinforced concrete spread footings, and the soil backfill contained within the arch bridge. A replacement bridge would be constructed that would be wider than existing bridge, with a width of 58 feet, 4 inches to accommodate two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet American Association of State Highway and Transportation Officials (AASHTO) and ADA minimum standards. In addition, the replacement bridge would be longer than the existing bridge, with a length of 82 feet, 6 inches to accommodate the proposed bike path along the Carbon Canyon Creek Channel as part of the Orange County (OC) Loop Bikeway Project.

Construction would be completed within seven months. During construction, Golden Avenue would be closed from California Street to immediately west of Rose Drive, approximately 0.18 mile east of the project area; however, through access would be allowed to and from residences along Navigation Circle to the east of the bridge. Detour routes around the construction area would be available on Rose Drive, Bastanchury Road, and Valencia Avenue (see **Appendix A, Engineer Drawings (Traffic Control Plan Sheet)**).

No significant impacts are anticipated to result from the project with implementation of avoidance and minimization measures. Therefore, a Mitigated Negative Declaration will be prepared for the project. Environmental impacts from the project are summarized in the table below.

Summary of Environmental Impacts

Environmental Factor	Impact Determination
Aesthetics	Less Than Significant Impact
Agriculture and Forest Resources	No Impact
Air Quality	Less Than Significant Impact
Biological Resources	Less Than Significant Impact
Cultural Resources	Less Than Significant with Mitigation Incorporated
Geology and Soils	Less Than Significant Impact
Greenhouse Gas Emissions	Less Than Significant Impact
Hazards and Hazardous Materials	Less Than Significant Impact
Hydrology and Water Quality	Less Than Significant Impact
Land Use and Planning	No Impact
Mineral Resources	No Impact
Noise and Vibration	Less Than Significant with Mitigation Incorporated
Population and Housing	No Impact
Public Services	No Impact
Recreation	No Impact
Transportation/Traffic	Less Than Significant Impact
Tribal Cultural Resources	Less Than Significant with Mitigation Incorporated
Utilities and Service Systems	No Impact
Mandatory Findings of Significance	Less Than Significant with Mitigation Incorporated

1.0 INTRODUCTION

The City of Placentia (City), in cooperation with the California Department of Transportation (Caltrans), is proposing to replace the existing Golden Avenue Bridge over Carbon Canyon Creek Channel (project) in the City of Placentia, Orange County, California.

Following preliminary review of the project, the City has determined that the project is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). This Initial Study was prepared in compliance with CEQA and the procedures for implementation of CEQA. The purpose of this Initial Study is to assess the potential direct, indirect, and cumulative impacts on the human and natural environment resulting from the project. As the CEQA Lead Agency, the City has primary responsibility for preparing the Initial Study.

1.1.1 Project Location

Placentia is in northern Orange County and is surrounded by the cities of Yorba Linda, Brea, Fullerton, and Anaheim (see **Figure 2-1. Regional Location**). Golden Avenue is a residential street that connects North Kraemer Boulevard to the west with Imperial Highway/State Route (SR-) 90 to the east (**Figure 2-2. Project Location**). The project area is near the border between the cities of Placentia and Yorba Linda, and is located to the east of California Street, west of Rose Drive, north of Brooklyn Avenue, and south of Chicago Avenue and Imperial Highway/State Route (SR-) 90.

The segment of Golden Avenue in the project area includes the existing Golden Avenue Bridge over Carbon Canyon Creek Channel (see **Figure 2-3. Project Footprin**t). The project limits would extend 200 feet from each end of the existing bridge, and 75 feet upstream and downstream of the Golden Avenue Bridge.

1.1.2 Project Setting

Golden Avenue is a residential street with a narrow shoulder and Class II bike path on the north and south sides of the roadway to the east and west of the bridge. Utility poles, light fixtures, and sidewalks also line Golden Avenue to the east and west of the bridge. Golden Avenue narrows at the bridge approaches and is absent of any shoulders, bike paths, or sidewalks.

The existing bridge was built in 1934, and is an earth-filled reinforced concrete arch bridge supported on concrete spread footings. The existing bridge is 27 feet wide and 34 feet long, and carries two lanes of traffic over the Carbon Canyon Creek Channel. The bridge has been determined to be functionally obsolete, according to a Caltrans Bridge Inspection Report dated September 29, 2011.

The Carbon Canyon Creek Channel is a narrow, concrete-lined drainage within a larger, unlined channel that flows to the Santa Ana River, several miles downstream from the project area. Flows within the channel are likely variable, with highest flows occurring for short periods after rainstorms. The concrete portion of the channel does not contain vegetation; however, the upper slopes of the larger channel contain several large trees, including *Ailanthus altissima* (tree of heaven), *Pinus spp.* (pine), and *Washingtonia spp.* (fan palm). The rest of the area is bare ground interspersed with weedy plants.

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Figure 2-1. REGIONAL LOCATION
Golden Avenue Bridge Replacement/Rehabilitation Project

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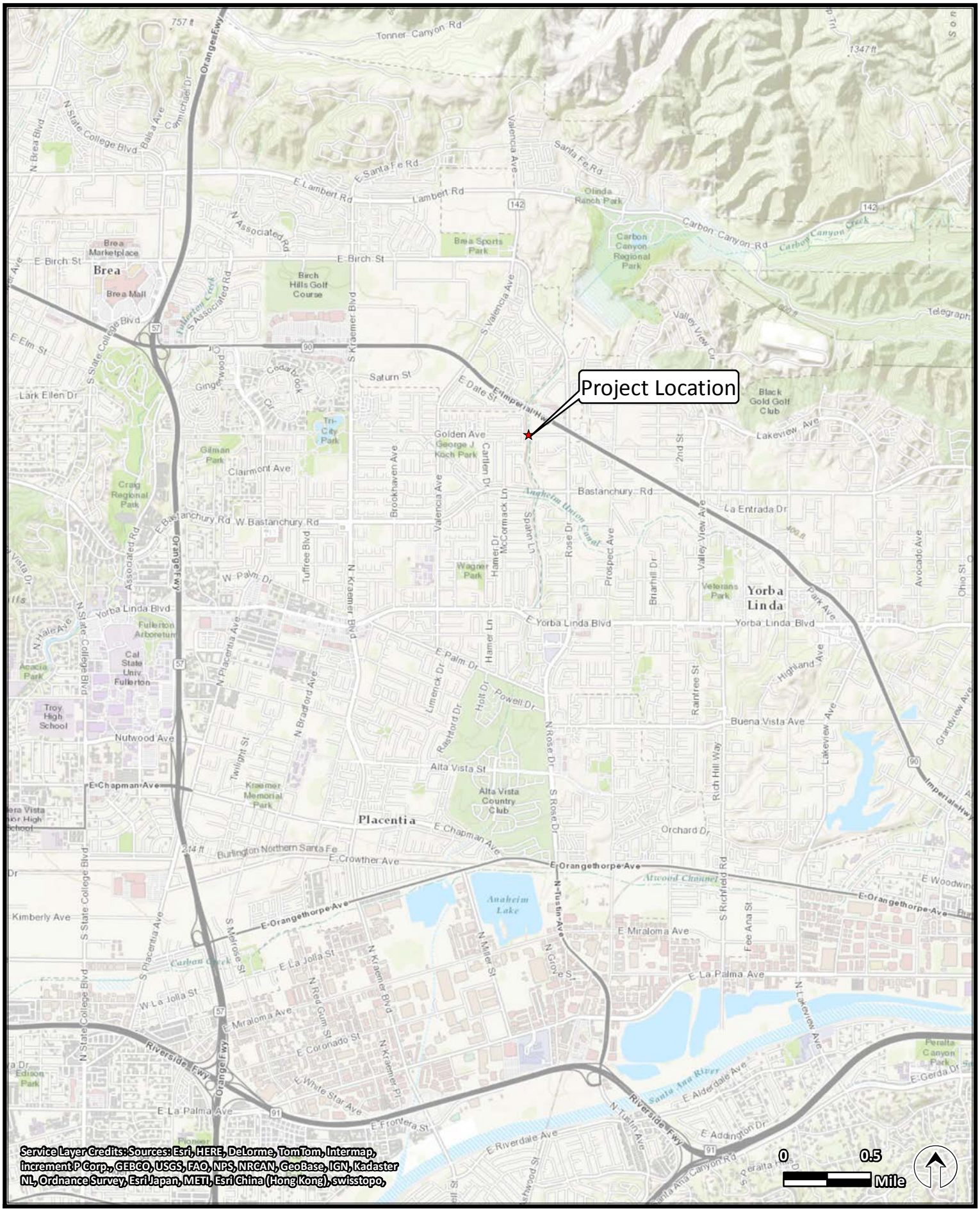

Figure 2-2. PROJECT LOCATION
Golden Avenue Bridge Replacement/Rehabilitation Project

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CHICAGO AVENUE

CALIF

NAVIGATION CIRCLE

GOLDEN AVENUE

CALIFORNIA STREET

Carbon Canyon Diversion Channel

LOT 1

LOT 40

LOT 41

LOT 2

LOT 3

LOT 10

LOT 11

LOT 12

Access Ramp

PROJECT FOOTPRINT

PROPOSED STAGING AREA

PROPOSED STAGING AREA

Access Ramp

30' FLOOD CONTROL EASEMENT PER DEED REC AUGUST 29, 1938 IN BOOK 964, PAGE 78

US GOVERNMENT FLOOD CONTROL EASEMENT PER 5502/258 O.R.

20' EASEMENT TO USA FOR FLOOD CONTROL PER DEED REC DEC 21, 1960 IN BOOK 5558, PAGE 547. SEE TRACT 17489 FOR OTHER EASEMENT HOLDERS.

10' HOA PUE PER TRACT 17489

PARKWAY DRAIN

SEWER AND WATER EASEMENT TO CITY OF YORBA LINDA PER TRACT 9192

TRACT 9192 MM 379/8-9

STOP

GAS

Legend

Project Footprint

No Scale

Source: BCA, 2017

Figure 2-3. PROJECT FOOTPRINT
Golden Avenue Bridge Replacement/Rehabilitation Project

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1.1.3 Project Characteristics

The project includes the removal of the existing bridge in its entirety, including the removal of the asphalt overlay, reinforced concrete deck arch bridge, reinforced concrete spread footings, and the soil backfill contained within the arch bridge. A replacement bridge would be constructed that would be wider than the existing bridge, with a width of 58 feet, 4 inches to accommodate two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet American Association of State Highway and Transportation Officials (AASHTO) minimum standards. In addition, the replacement bridge would be longer than the existing bridge, with a length of 82 feet, 6 inches to accommodate a proposed bike path along the Carbon Canyon Creek Channel as part of the Orange County (OC) Loop Bikeway Project (see **Figure 2-4. Orange County Loop Bikeway Project**).

All work would be completed in the existing right-of-way (ROW), and no ROW acquisition would be required for the project. Existing utilities (gas and oil lines) on the north side of the bridge would be relocated between the bridge girders (hanging) along the bridge. Temporary construction easements (TCE) would be required for project construction, and would extend across the 100-foot-wide flood control easement in the Carbon Canyon Creek Channel and along designated access ramps to the channel from Golden Avenue (see **Appendix A, Engineering Drawings**). Construction equipment would be staged along Golden Avenue to the west and east of the bridge (see **Figure 2-3. Project Footprint**). The staging areas would be approximately 100 feet long and 80 feet wide.

Excavation to a maximum depth of 15 feet would be required to construct the cast-in-drilled-hole piles, abutment footings, and abutment seats. Storm drain pipes would be connected at all four quadrants of the bridge to the existing concrete channel wall. To connect the storm, drain pipes, work in the channel would be required to form the reinforced concrete collar around the storm drains. Construction would be conducted during the summer (June to September) when there would be no water in the channel. The trees on both sides of the bridge would be removed to construct the project. Two trees of heaven (*Ailanthus altissima*), one on the north and one on the south side of the bridge, and two fan palms (*Washingtonia spp.*), both on the north side of the bridge, would be removed to accommodate bridge widening.

Construction would be completed within seven months. During construction, Golden Avenue would be closed from California Street to immediately west of Rose Drive, approximately 0.18 mile east of the project area; however, through access would be allowed to and from residences along Navigation Circle to the east of the bridge. Detour routes around the construction area would be available on Rose Drive, Bastanchury Road, and Valencia Avenue.

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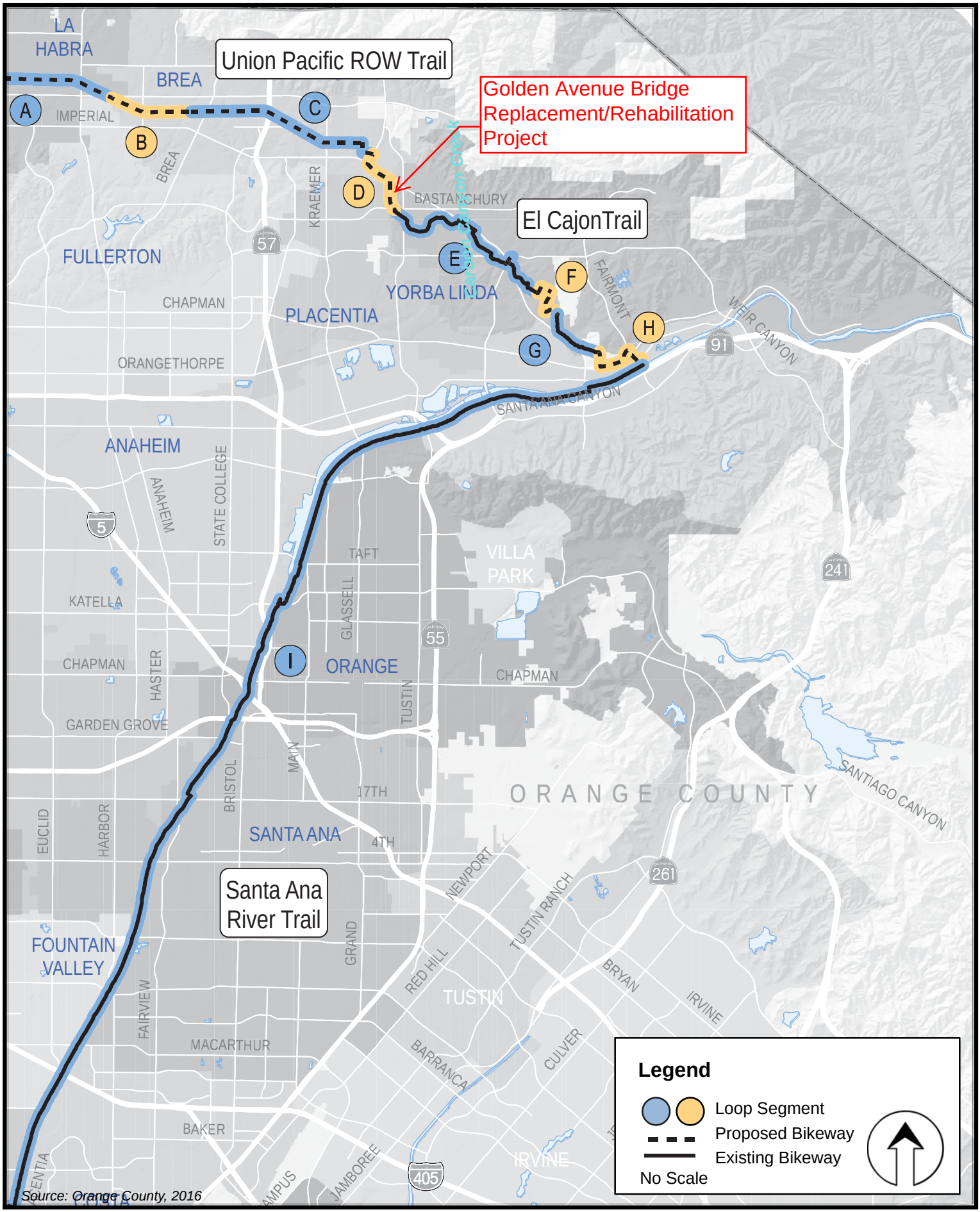

Figure 2-4. ORANGE COUNTY LOOP BIKEWAY PROJECT
Golden Avenue Bridge Replacement/Rehabilitation Project

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1.1.4 CEQA Requirements

In accordance with CEQA (Public Resources Code Section 21000- 21177) and pursuant to Section 15063 of Title 14 of the California Code of Regulations (CCR), the City, acting in the capacity of Lead Agency, is required to undertake the preparation of an Initial Study to determine if the project would have a significant environmental impact.

The purposes of the Initial Study/Environmental Checklist are to: (1) identify environmental impacts; (2) provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or Negative Declaration; (3) enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared; (4) facilitate environmental assessment early in the design of the project; (5) provide documentation of the factual basis for the finding in a Negative Declaration that a project would not have a significant environmental effect; (6) eliminate needless EIRs; (7) determine whether a previously prepared EIR could be used for the project; and (8) assist in the preparation of an EIR, if required, by focusing the EIR on the effects determined to be significant, identifying the effects determined not to be significant, and explaining the reasons for determining that potentially significant effects would not be significant.

Section 15063 of the CEQA Guidelines identifies specific disclosure requirements for inclusion in an Initial Study. Pursuant to those requirements, an Initial Study shall include: (1) a description of the project, including the location of the project; (2) an identification of the environmental setting; (3) an identification of environmental effects by use of a checklist, matrix or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries; (4) a discussion of ways to mitigate significant effects identified, if any; (5) an examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls; and (6) the name of the person or persons who prepared or participated in the preparation of the Initial Study.

If, because of the Initial Study, the Lead Agency finds that there is evidence that any aspect of the project may cause a significant environmental effect, the Lead Agency shall further find that an Environmental Impact Report (EIR) is warranted to analyze project-related and cumulative environmental impacts. Alternatively, if the Lead Agency finds that there is no evidence that the project, either as proposed or as modified to include the mitigation measures identified in the Initial Study, may cause a significant effect on the environment, the Lead Agency shall find that the proposed project would not have a significant effect on the environment and shall prepare a Negative Declaration for that project. Such determination can be made only if “there is no substantial evidence in light of the whole record before the Lead Agency” that such impacts may occur (Section 21080[c], Public Resources Code).

The environmental documentation, which is ultimately selected by the City in accordance with CEQA, is intended as an informational document undertaken to provide an environmental basis for subsequent discretionary actions upon the project. The resulting documentation is not, however, a policy document and its adoption and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits and other discretionary approvals would be required.

The environmental documentation and supporting analysis is subject to a public review period. The project is not a project "of statewide, regional, or areawide significance" as prescribed in Section 15206

of the CEQA Guidelines because it does not meet the criteria for such projects. However, project implementation requires an action by a State Agency, Caltrans, which is a responsible agency. Therefore, the document will be submitted to the State Clearinghouse for review, and the review period is determined to be 30 days in accordance with Section 15073 of the CEQA Guidelines.

Following review of any comments received, the City will consider these comments as a part of the project's environmental review and include them with the Initial Study documentation for consideration by the City in accordance with Section 15074(b) of the CEQA Guidelines.

2.0 ENVIRONMENTAL SUMMARY

2.1 Introduction

1. Project Title

Golden Avenue Bridge Replacement Project

2. Lead Agency Name and Address

City of Placentia
401 East Chapman Avenue
Placentia, California 92879

3. Contact Person and Phone Numbers

Mr. Luis Estevez, Public Works Director, (714) 993-8120

4. Project Location

Placentia is in northern Orange County and is surrounded by the cities of Yorba Linda, Brea, Fullerton, and Anaheim (see **Figure 2-1. Regional Location**). Golden Avenue is a residential street that connects North Kraemer Boulevard to the west with Imperial Highway/State Route (SR-) 90 to the east (**Figure 2-2. Project Location**). The project area is near the border between the cities of Placentia and Yorba Linda, and is located to the east of California Street, west of Rose Drive, north of Brooklyn Avenue, and south of Chicago Avenue and Imperial Highway/SR-90.

The segment of Golden Avenue in the project area includes the existing Golden Avenue Bridge over Carbon Canyon Creek Channel (see **Figure 2-3. Project Footprint**). The project limits would extend 200 feet from each end of the existing bridge, and 75 feet upstream and downstream of the Golden Avenue Bridge.

5. Project Sponsor's Name and Address

City of Placentia
Public Works Department
401 East Chapman Avenue
Placentia, California 92879

6. General Plan Designation

The project area is a City-owned roadway that is in the public ROW, and is therefore not designated for any use.

7. Zoning

The project area is a City-owned roadway that is in the public ROW, and is therefore not zoned for any use.

8. Description of Project

The project includes the removal of the existing bridge in its entirety, including the removal of the asphalt overlay, reinforced concrete deck arch bridge, reinforced concrete spread footings, and the soil backfill contained within the arch bridge. A replacement bridge would be constructed that would be wider than existing bridge, with a width of 58 feet, 4 inches to accommodate two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet AASHTO and ADA minimum standards. In addition, the replacement bridge would be longer than the existing bridge, with a length of 82 feet, 6 inches to accommodate a proposed bike path along the Carbon Canyon Creek Channel as part of the OC Loop Bikeway Project.

9. Surrounding Setting and Land Uses

The project area is surrounded by single-family residential neighborhood to the northwest, southwest, and southeast, with two single-family residences directly adjacent to the project area to the northwest and the southeast, respectively. The property directly to the southwest is owned by an oil company and contains various equipment for oil operations. The property directly to the northwest is covered with gravel and a few trees and shrubs. A multi-family residential neighborhood is to the northeast of the project area.

10. Other Public Agencies Whose Approval is Required (.e.g., permits, financing approval, or participation agreement)

The City is requesting federal funding for the project through Caltrans; therefore, a separate environmental review under the National Environmental Policy Act (NEPA) is required.

Because the project would require work within Carbon Creek, which is a jurisdictional waterway, the project would require permits from regulatory agencies, including a Section 404 of the Clean Water Act Nationwide Permit from the United States Army Corps of Engineers (USACE), a Section 401 of the Clean Water Act Certification from the Regional Water Quality Control Board (RWQCB), and a 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW).

2.2 Evaluation of Environmental Impacts

Section 3 (following) analyzes the potential environmental impacts associated with the proposed bridge replacement. The issue areas evaluated in this Initial Study include:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic

- Tribal Cultural Resources
- Utilities and Service Systems

The environmental analysis in Section 3 is patterned after the Initial Study Checklist recommended by the CEQA Guidelines, as amended, and used by the City in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the project's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long- term, direct, indirect, and cumulative impacts of the project. To each question, there are four possible responses:

- **No Impact.** The project will not have any measurable environmental impact on the environment.
- **Less Than Significant Impact**. The project will have the potential for affecting the environment, although this impact will be below established thresholds that are significant.
- **Less Than Significant with Mitigation Incorporated.** The project will have the potential to generate impacts, which may be considered as a significant effect on the environment, although mitigation measures or changes to the project's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact.** The project could have impacts, which may be considered significant, and therefore additional analysis is required to identify mitigation measures that could reduce potentially significant impacts to less than significant levels.

2.3 Environmental Factors Potentially Affected

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

	Aesthetics		Mineral Resources
	Agriculture and Forest Resources	☒	Noise
	Air Quality		Population and Housing
	Biological Resources		Public Services
☒	Cultural Resources		Recreation
	Geology and Soils		Transportation/Traffic
	Greenhouse Gas Emissions	☒	Tribal Cultural Resources
	Hazards and Hazardous Materials		Utilities/Service Systems
	Hydrology and Water Quality	☒	Mandatory Findings of Significance
	Land Use and Planning		

3.0 CEQA CHECKLIST

The following analysis includes an assessment of the project and the identification of potential project impacts. Explanations are provided for each item in the environmental checklist.

3.1 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?				☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			☒	
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			☒	

Impact Analysis

The following analysis incorporates the findings of a Visual Impact Memorandum completed for the project (GPA Consulting, 2017a).

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

***No Impact*.** The project area is densely developed with a single-family residential neighborhood and does not include a designated a scenic vista. Therefore, no impacts on a scenic vista would result from the project.

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 area is not located along a state scenic highway. Therefore, no impacts on scenic resources within a scenic highway would result from the project.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The existing bridge was built in 1934, and is an earth-filled reinforced concrete arch bridge supported on concrete spread footings. The existing bridge is 34 feet long and 27 feet wide, and carries two lanes of traffic over the Carbon Canyon Creek Channel. The existing bridge railing is a decorative concrete guard railing. The railing is short and does not obstruct views from the bridge.

The anticipated replacement bridge would be widened to 58 feet and 4 inches to accommodate two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet AASHTO and ADA minimum standards. In addition, the replacement bridge would be lengthened to 82 feet and six inches to accommodate the planned bike path along the Carbon Canyon Creek Channel as part of the OC Loop Bikeway Project.

The proposed bridge would appear noticeably larger to viewers familiar with the project area. However, the replacement bridge would match existing roadway widths on Golden Avenue to the east and west of the bridge. The replacement bridge would include bike lanes/shoulders and sidewalks, similar to the adjacent segments of Golden Avenue, and the roadway would no longer narrow noticeably at the bridge approaches.

Sensitive viewers are considered nearby residents, bicyclists, and pedestrians. Two adjacent residences to the northwest and southeast of the bridge, respectively, would be considered the most sensitive viewers. Residents that are further away from the project area would be less sensitive to visual changes. Bicyclists and pedestrians pass through the project area at a leisurely pace, allowing enough time to experience their surroundings with substantial detail. Therefore, bicyclists and pedestrians are considered more sensitive viewers, while motorists that pass through the project area more quickly are considered the least sensitive viewers.

Because the roadway features on the new bridge would match adjacent segments on Golden Avenue, the new width of the replacement bridge would be compatible with the existing visual character along Golden Avenue. Sensitive viewers would likely view the additional bike lanes/shoulders and sidewalks to be harmonious with the existing roadway features to the east and west of the bridge. Therefore, the larger width of the bridge would not substantially degrade the visual character or quality of the project area or its surroundings.

The new bridge replacement will be designed and constructed to meet AASHTO standards and will accommodate the OC Loop Bikeway Project. Several aesthetic features will be incorporated into the project design to minimize changes in the existing visual setting. The proposed bridge would be constructed with concrete, similar to the existing bridge. To allow space for the OC Loop Bikeway to cross under the bridge, the replacement bridge would not include an arch; however, an arched decorative fascia beam would be incorporated at the exterior edges of the bridge to mimic the existing design. In meeting AASHTO standards, the replacement guard railing would be solid instead of having decorative openings as compared to the existing guard rail. However, the guard railing will be stamped to mimic the shape of the current decorative openings. The height of the guard rail will be similar to the existing height, and existing views from the bridge would not be blocked by any new vertical structures.

Because aesthetic features that mimic the existing bridge would be incorporated into the project design, viewers would likely view the replacement bridge to be compatible with the existing bridge design.

Therefore, the new design of the replacement bridge would not substantially degrade the visual character or quality of the project area or its surroundings.

The upper slopes of the Carbon Canyon Creek Channel contain several large trees. Two trees of heaven, one on the north and one on the south side of the bridge, and two fan palms, both on the north side of the bridge, would be removed to accommodate the bridge widening. However, a substantial number of trees are along the banks of the Carbon Canyon Creek Channel and surrounding the project area. Only four trees would be removed to construct the project, but several similar trees would remain during and following project construction. Because tree removal in the project area would be minimal, sensitive viewers would likely not notice the changes in vegetation in the project area. Therefore, tree removal would not substantially degrade the visual character or quality of the project area or its surroundings.

During construction, the construction area would extend from California Street, adjacent to the west of the project area, to 200 feet east of the bridge. During project construction, vehicles would be staged to the west and east of the bridge. Construction materials, equipment, and debris would be visible in the project area during the construction period.

Project construction would last approximately up to seven months. Motorists, bicyclists, and pedestrians may not be able to see construction activities from their designated detour routes, and therefore, would not be substantially affected by visual impacts during project construction. Sensitive viewers from the surrounding residences would only be exposed to these visual changes during the construction period, and the surrounding visual setting would be restored to existing conditions following construction. In addition, views from surrounding residences are partially blocked by trees, shrubs, and fences, and therefore, sensitive viewers would not be substantially affected by temporary visual impacts during construction. Therefore, construction activities would not substantially degrade the visual character or quality of the project area or its surroundings.

The project would result in noticeable changes to the visual environment resulting from changes in the width and length of the bridge, changes in aesthetic features on the replacement bridge, vegetation removal, and construction activities. However, as discussed above, these changes would not substantially degrade the visual character or quality of the project area or its surroundings. Therefore, impacts on visual character and quality would be less than significant.

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

Less Than Significant Impact. Existing sources of light or glare in the project area include vehicles on the roadway and street lamps that line Golden Avenue to the east and west of the bridge. The project would not result in additional vehicles on the bridge, and would not include additional street lamps that could create new sources of light or glare. Additional lighting could be required for certain construction activities; however, the lighting would be similar to existing street lamps, and would not adversely affect day or nighttime views in the area. Additionally, project construction would stop at 6 p.m. daily, and generally, would not require additional lighting. If lighting is required, spillage of light onto the adjacent properties during construction will be minimized to the maximum extent possible. Therefore, impacts related to new sources of light or glare would be less than significant.

3.2 Agriculture and Forest Resources

In determining whether impacts on 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 forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?				☒
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?				☒
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))?				☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?				☒
e. Involve other changes in the existing environment that, 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?				☒

Impact Analysis

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?

No Impact. The project area is a City-owned roadway that is surrounded by a single-family residential neighborhood to the northwest, southwest, and southeast, with two single-family residences directly adjacent to the project area to the northwest and the southeast, respectively. The property directly to the southwest is owned by an oil company and contains various equipment for oil operations. The property directly to the northwest is covered with gravel and a few trees and shrubs. A multi-family residential neighborhood is to the northeast of the project area.. According to the Orange County Important Farmland Map, the project area is designated as urban and built-up land (California Department of Conservation, 2016). Therefore, no impacts on farmland would result from the project.

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

No Impact. The project area is a City-owned roadway that is in the public ROW, and is therefore not zoned for agricultural use. Additionally, the project is not in an agricultural area preserved by the Williamson Act (California Department of Conservation, 2004). Therefore, no impacts on existing zoning for agricultural use or a Williamson Act contract would result from the project.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?

***No Impact*.** The project area is a City-owned roadway that is in the public ROW, and is therefore not zoned for forest land or timberland. The project area does not include forest lands (i.e., land with 10 percent tree coverage, as defined in Public Resources Code Section 12220 (g)), or timberland (i.e., land that is available for growing a crop of trees intended for commercial use, as defined in Public Resources Code Section 4526). Therefore, no impacts on zoning for forest land or timberland would result from the project.

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

No Impact. As discussed in Response 4.2 (c) above, the project area does not include forest land. Therefore, no impacts on forest land would result from the project.

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. As discussed in Responses 4.2 (a) and (c) above, the project area does not include farmland or forest land. Therefore, no impacts on farmland or forest land would result from the project.

3.3 Air Quality

When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			☒	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			☒	
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?			☒	
d. Expose sensitive receptors to substantial pollutant concentrations?			☒	
e. Create objectionable odors affecting a substantial number of people?			☒	

Impact Analysis

The following analysis incorporates the findings of an Air Quality and Greenhouse Gas Impact Assessment completed for the project (AMBIENT, 2017a).

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

Less Than Significant Impact. The Federal Clean Air Act (FCAA) requires the United States Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for criteria pollutants, which are ozone (O_3), coarse particulate matter less than 10 microns in diameter (PM_{10}), fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Under the California Clean Air Act (CCAA), the California Air Resources Board (CARB) requires that each local air district prepare and maintain an air quality management plan to achieve compliance with the California Ambient Air Quality Standards (CAAQS) and NAAQS. The CAAQS standards are generally more stringent and apply to more pollutants than the NAAQS.

The South Coast Air Basin (SCAB), where the project area is located, is currently designated as a nonattainment area with respect to the CAAQS for O_3, PM_{10}, and $PM_{2.5}$, as well as the NAAQS for 1-hour O_3 and $PM_{2.5}$. The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County, where the project area is located, as well as the urban portions of Los

Angeles, Riverside and San Bernardino counties. The SCAQMD has developed an Air Quality Management Plan (AQMP) to achieve air quality standards. The 2016 AQMP includes the integrated strategies and measures needed to meet the NAAQS (South Coast Air Quality Management District, 2016).

As shown in **Table 4-1. SCAQMD Regional Thresholds**, the SCAQMD has recommended significance thresholds for determining if project-generated emissions would have a potentially significant impact, and could interfere with implementation of the 2016 AQMP.

Table 4-1. SCAQMD Regional Thresholds

Pollutant	Construction Emissions (lbs/day)	Operational Emissions (lbs/day)
VOC	75	55
NO_x	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150

Source: AMBIENT, 2017a

Table Notes: VOC = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; PM_{10} = coarse particulate matter less than 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than 2.5 microns in diameter; SO_x = sulphur oxides; lbs/day = pounds per day

Existing sources of air quality emissions in the project area include emissions from vehicles traveling along Golden Avenue and surrounding roadways. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new emissions sources or generate increases in long-term air quality emissions. In addition, as shown in **Table 4-2. Construction Emissions Compared to SCAQMD Regional Thresholds**, project construction would not result in substantial increases in emissions that would exceed SCAQMD regional thresholds.

Table 4-2. Construction Emissions Compared to SCAQMD Regional Thresholds

Construction Activity	Emissions (lbs/day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation/Grubbing	0.6	5.6	6.1	<0.1	0.4	0.3
Grading/Excavation/Bridge Demolition	2.1	22	17.5	<0.1	1.5	1.2
Bridge Construction/Drainage Improvements/Utilities/Subgrade/Retaining Walls	1.8	17.3	13.7	<0.1	1.1	0.9
Paving	1.2	9.4	9.5	<0.1	0.7	0.5
Maximum Daily[2]:	2.1	17.3	17.5	<0.1	1.5	1.2
SCAQMD Significance Thresholds[2]:	75	100	550	150	150	55

Exceeds Thresholds?	No	No	No	No	No	No

Source: AMBIENT, 2017a

Table Notes: lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulphur oxides; PM_{10} = coarse particulate matter less than 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than 2.5 microns in diameter; SCAQMD = South Coast Air Quality Management District

1. Emissions were quantified using the CalEEMod, v2016.3.1, computer program. Does not include reductions in fugitive dust associated with compliance with SCAQMD's Rule 403. Totals may not sum due to rounding.

2. Maximum daily emissions assume some activities, such as grading, excavation, and bridge demolition, could occur simultaneously on any given day.

Because no long-term air quality emissions are anticipated to result from the project, and construction-generated emissions would not exceed SCAQMD regional thresholds, the project would not conflict with or obstruct implementation of the 2016 AQMP. Therefore, impacts related to implementation of the 2016 AQMP would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. Existing sources of air quality emissions in the project area include emissions from vehicles traveling along Golden Avenue and surrounding roadways. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new emissions sources or generate increases in long-term air quality emissions.

The SCQAMD has developed localized thresholds for the evaluation of short-term localized air quality impacts. The thresholds are based on the CAAQS, which have been established to provide a margin of safety regarding the protection of public health and welfare. As shown in **Table 4-3. On-Site Construction Emissions Compared to SCAQMD Localized Thresholds**, project construction would not result in substantial increases in emissions that would exceed SCAQMD localized thresholds.

Project construction would be required to comply with SCAQMD's Rule 402 (Nuisance) and Rule 403 (Fugitive Dust), which identifies measures to be implemented for the control of fugitive dust generated during onsite demolition and ground disturbance activities. Furthermore, on-road diesel vehicles, such as haul trucks, would also be required to comply with Section 2485 of Title 13 of the California Code of Regulations. This regulation limits idling from diesel-fueled commercial motor vehicles with gross vehicular weight ratings of more than 10,000 pounds and licensed for operation on highways. This regulation applies to California and non-California based vehicles. In general, the regulation specifies that drivers of said vehicles:

1) Shall not idle the vehicle's primary diesel engine for greater than five minutes at any location, except as noted in Subsection (d) of the regulation; and,

2) Shall not operate a diesel-fueled auxiliary power system to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than five minutes at any location when within 1,000 feet of a restricted area, except as noted in Subsection (d) of the regulation.

Table 4-3. On-Site Construction Emissions Compared to SCAQMD Localized Thresholds

Construction Activity	Emissions (lbs/day)[1]					
	ROG	NOX	CO	SOX	PM10	PM2.5
Site Preparation/Grubbing	0.6	5.4	5.9	<0.1	0.3	0.3
Grading/Excavation/Bridge Demolition	1.9	17.9	15.8	<0.1	1.1	1.0
Bridge Construction/Drainage Improvements/Utilities/Subgrade/Retaining Walls	1.7	15.3	12.8	<0.1	0.9	0.8
Paving	1.1	9.4	9.1	<0.1	0.5	0.5
Maximum Daily Onsite[2]:	1.9	17.9	15.8	<0.1	1.1	1.0
SCAQMD Localized Significance Thresholds[2]:	None	103	522	None	4	3
Exceeds Thresholds?	NA	No	No	NA	No	No

Source: AMBIENT, 2017a

Table Notes: lbs/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulphur oxides; PM_{10} = coarse particulate matter less than 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than 2.5 microns in diameter; SCAQMD = South Coast Air Quality Management District

1. Emissions were quantified using the CalEEMod, v2016.3.1, computer program. Totals may not sum due to rounding.

2. Maximum daily emissions assume some activities, such as grading, excavation, and bridge demolition, could occur simultaneously on any given day.

3. LSTs are based on a one-acre site with sensitive receptors located within 25 meters.

The operation of off-road construction equipment would also be subject to CARB's In-Use Off-road Diesel Vehicle regulation, which generally limits idling of off-road equipment to no more than five consecutive minutes, excluding equipment and activities for which idling is required (e.g., concrete mixing).

Because no long-term air quality emissions are anticipated to result from the project, and construction-generated emissions would not exceed SCAQMD localized thresholds, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, impacts related to air quality violations would be less than significant.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. The SCAB, where the project area is located, is currently designated as a nonattainment area with respect to the CAAQS for O_3, PM_{10}, and $PM_{2.5}$, as well as the NAAQS for 1-hour O_3 and $PM_{2.5}$. Existing sources of air quality emissions in the project area include emissions from vehicles traveling along Golden Avenue and surrounding roadways. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new emissions sources or generate increases in long-term air quality emissions. In addition, as shown in **Table 4-2.** Construction Emissions Compared to SCAQMD Regional Thresholds, project construction would not result in substantial increases in emissions that would exceed SCAQMD regional thresholds.

Because no long-term air quality emissions are anticipated to result from the project, and construction-generated emissions would not exceed SCAQMD regional thresholds, the project would not result in a cumulatively considerable net increase of any criteria pollutant. Therefore, impacts related to cumulatively considerable increase in pollutants would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Existing sources of air quality emissions in the project area include emissions from vehicles traveling along Golden Avenue and surrounding roadways. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new emissions sources or generate increases in long-term air quality emissions. In addition, as shown in **Table 4-3.** On-Site Construction Emissions Compared to SCAQMD Localized Thresholds, project construction would not result in substantial increases in emissions that would exceed SCAQMD localized thresholds.

Because no long-term air quality emissions are anticipated to result from the project, and construction-generated emissions would not exceed SCAQMD localized thresholds, the project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts related to the exposure of sensitive receptors would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Existing sources of odors in the project area include exhaust fumes from vehicles traveling along Golden Avenue and surrounding roadways. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new sources of exhaust fumes or generate increases in existing exhaust fumes.

Project construction would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. In addition, pavement coatings used during project construction would also emit temporary odors. However, because construction-generated emissions would be intermittent throughout the workday and would dissipate rapidly with increasing distance from the source, short-term construction activities would not create objectionable odors affecting a substantial number of people. Therefore, impacts related to objectionable odors would be less than significant.

3.4 Biological Resource

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Game or U.S. Fish and Wildlife Service?			☒	
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			☒	
c. Have a substantial adverse effect on protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filing, hydrological interruption, or other means?				☒
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?			☒	
e. Conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				☒
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?				☒

Impact Analysis

The following analysis incorporates the findings of a Natural Environment Study (Minimal Impacts) completed for the project (GPA Consulting, 2017b).

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact. A biological survey was completed in the biological study area (BSA) on May 11, 2017 during preparation of the Natural Environment Study (Minimal Impacts) completed for the project. The BSA includes the direct project impact area and an indirect effect buffer. The buffer limits are based on the size and scope of the project and the distance that indirect effects of the project could extend. The project impact area includes the bridge, approximately 200 feet from each end of the bridge along the roadway for staging of equipment, and approximately 75 feet upstream downstream within the creek to include the access roads into the channel. The buffer within the channel extends approximately 100 feet upstream and 150 feet downstream of the project impact area. The project area is within a developed, urban area, surrounded by residential properties. Vegetation within the BSA consists mostly of ruderal and ornamental species, including two southern California black walnut trees (*Juglans californica*) that are protected by the CDFW. The Golden Avenue Bridge traverses the Carbon Canyon Creek within the BSA. The creek is a narrow, concrete-lined drainage within a larger, unlined channel that flows to the Santa Ana River, several miles downstream of the BSA.

The California Natural Diversity Database (CNDDB) and the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation Database (IPAC) were queried for lists of special-status species with potential to be in the BSA based on recorded geographical distribution. According to the CNDDB and USFWS searches, 54 special-status plant species have potential to be in the BSA based on recorded geographical distribution. However, with the exception of the southern California black walnut, which was observed within the BSA and is protected by the CDFW, no special-status plants are expected to be in the BSA based on habitat requirements and the results of biological surveys. The southern California black walnut is considered a plant of limited distribution and is moderately threatened in California. The trees are located approximately 150 feet north of the bridge and approximately 125 feet south of the bridge.

According to the CNDDB and USFWS searches, 96 special-status wildlife species have potential to be in the BSA based on recorded geographical distribution. None of the wildlife species are federally or state listed as candidate, endangered, or threatened species. However, several sensitive wildlife species have potential to be in or near the project area. Ornamental trees and vegetation at the top of the creek banks could provide suitable habitat for:

- Cooper's hawk (*Accipiter cooperii*), a CDFW Watch List species;
- Merlin (*Falco columbarius*), a CDFW Watch List species;
- Rufous hummingbird (*Selasphorus rufus*), a USFWS Bird of Conservation Concern;
- Western red bat (*Lasiurus blossevillii*), a CDFW Species of Special Concern; and
- Yuma myotis (*Myotis yumanensis*), protected under the California Fish and Game Code.

In addition, open, dry areas could provide suitable habitat for the coastal whiptail (*Aspidoscelis tigris stegnegeri*), a CDFW Species of Special Concern.

The bridge over the creek is a concrete arch structure that does not provide cracks or crevices that could provide suitable roosting habitat for bats, which are protected under the California Fish and Game Code. In addition, no evidence of night roosting was observed on the bridge structure. Therefore, bats are not expected to roost on the bridge; however, they could roost within trees adjacent to the bridge.

Project construction would require the use of heavy construction equipment for onsite demolition of the existing bridge, ground disturbance activities, and construction of the new bridge. Two trees of heaven, one on the north and one on the south side of the bridge, and two fan palms, both on the north side of the bridge, would also be removed to accommodate the bridge widening. The project would not require the removal of the southern California black walnut trees; however, the trees could be indirectly affected by dust and debris from construction activities. In addition, because sensitive wildlife species have potential to be in or near the project area, these species could be disturbed during project construction from noise, dust, debris, and vegetation removal. Therefore, if sensitive wildlife species are in or near the project area during construction, and if construction activities are conducted in proximity to the southern California black walnut trees, the project has the potential to result in impacts, either directly or through habitat modifications or indirect, on species identified as sensitive species by the CDFW or USFWS.

Avoidance and minimization Measures BIO-1 through BIO-18, listed below, would be implemented to determine if sensitive wildlife species are in the project area prior to construction, develop measures to avoid impacts if species are found in the project area, reduce work areas to the extent feasible, construct outside the bird nesting season to the extent feasible, and fence off environmentally sensitive areas, including the southern California black walnut trees.

With implementation of avoidance and minimization measures BIO-1 through BIO-18, any impacts on sensitive species encountered in or near the project area prior to construction would be avoided or minimized. Therefore, impacts related to sensitive species would be less than significant.

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

Less Than Significant Impact. The Carbon Canyon Creek runs beneath the Golden Avenue Bridge in the project area, which is considered jurisdictional waters under the USACE, RWQCB, and CDFW. Agencies are given jurisdiction over the conservation, protection, and management of waters for various reasons, including the protection of habitat necessary for ensuring biologically sustainable populations of fish and wildlife. The project would include replacing the existing bridge over the creek with a wider bridge and the connecting storm drain pipes at all four quadrants of the bridge to the existing concrete channel wall. Storm drain construction would require work in the concrete-lined portion of the creek to form a reinforced concrete collar around the additional storm drain pipes. Work would be conducted during the dry season (April to October); therefore, a water diversion would not be required for the project.

The project could result in the incidental release of construction materials and debris into the creek. Construction equipment accessing the creek and construction activities within the creek would result in approximately 330 linear feet and 0.08 acre of temporary impacts on waters under jurisdiction of the USACE and RWQCB, and approximately 445 linear feet and 0.91 acres of temporary impacts on waters under CDFW jurisdiction. Installation of the reinforced concrete collar around the additional storm drain pipes would result in approximately 0.01 acre of permanent impacts on waters under jurisdiction of the USACE, RWQCB, and CDFW. In addition, shading of the creek by the new widened bridge would result in approximately 0.05 acre of permanent impacts on waters under CDFW jurisdiction. Therefore, the project would result in significant impacts on natural communities and habitats in the project area. However, with implementation of avoidance and minimization measures BIO-1 through BIO-18, impacts would be avoided or substantially minimized, and adverse impacts on jurisdictional features are not anticipated.

c) Have a substantial adverse effect on protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filing, hydrological interruption, or other means?

No Impact. Saturated soils, and vegetation that grows in saturated soils, are indicators of protected wetlands as defined by Section 404 of the Clean Water Act (CWA). Within the BSA, the concrete-lined portion of the creek does not include soils or vegetation, and the upper dirt banks of the unlined portion of the creek include ruderal and ornamental vegetation, which are not vegetation types that grow in saturated soil. The creek does not include protected wetlands as defined by Section 404 of the Clean Water Act (CWA). Therefore, no impacts related to wetlands would result from the 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?

Less Than Significant Impact. The BSA is surrounded by urban, developed land, and is not adjacent to open land. The creek includes open water habitat, which is valuable to wildlife, such as migrating birds, reptiles, and amphibians, especially during times of drought or in the heat of summer. Because ornamental trees and vegetation are within the BSA, migratory birds could nest and forage within the BSA. No native wildlife nursery sites are within the BSA; therefore, no impacts on nursery sites would result from the project.

According to the CDFW Biogeographic Information and Observation System Habitat Connectivity Viewer, the BSA is not within an essential connectivity area or natural landscape block, and is not expected to be used as a regional wildlife movement corridor. However, the BSA is likely used for local wildlife movement and foraging. Project construction would require work above the creek, which could disturb local wildlife and prevent them from moving through the area. Therefore, if native resident wildlife species are in or near the project area during construction, the project has the potential to interfere substantially with the movement of native resident wildlife species and with an established native resident wildlife corridor.

Avoidance and minimization measures BIO-1 through BIO-18, listed below, would be implemented to determine if wildlife species are in the project area prior to construction, develop measures to avoid impacts if species are found in the project area, reduce work areas to the extent feasible, implement

hazardous materials BMPs, restore construction areas, construct outside the bird nesting season to the extent feasible, and fence off environmentally sensitive areas.

With implementation of the specified measures, any impacts on wildlife species encountered in or near the project area prior to construction would be avoided or minimized. Therefore, impacts related to native resident wildlife species and corridors would be less than significant.

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

No Impact. The City of Placentia does not have any ordinances or local policies that would pertain to the protection of plants or wildlife in the project area. Therefore, the project would result in no impact on local polices or ordinances protecting biological resources.

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 area is not part of an adopted habitat conservation plan, natural community conservation plan, or other approved habitat conservation plan. Therefore, no impacts related to these plans would result from the project.

Avoidance and Minimization

To avoid and minimize impacts on jurisdictional features, the following avoidance and minimization measures would be implemented:

BIO-1: Work areas would be reduced to the maximum extent feasible, and staging areas would be along the roadway and outside of the creek.

BIO-2: Hazardous material BMPs, including using protective materials such as matting or basins to catch spills and leaks from fuel containers, storing waste in sealed containers, prohibiting potentially hazardous waste material from accumulating on the ground, and keeping a spill kit on site, would be implemented to reduce the potential for chemical spills or contaminant releases into the creek, including any non-stormwater discharge.

BIO-3: All equipment refueling and maintenance would be conducted in the staging area away from the creek per Caltrans standard specifications. In addition, vehicles and equipment would be checked daily for fluid and fuel leaks, and drip pans would be placed under all equipment that is parked and not in operation.

BIO-4: Following project construction, all temporarily disturbed areas would be restored to pre-project conditions or better, and any re-vegetation or erosion control implemented would be completed using non-invasive species approved by the City.

BIO-5: Invasive plant species in the project area would be removed outside of the bird nesting season (typically February 1 to September 15) and disposed of in a manner that minimizes the potential for their reestablishment. Invasive plants would be identified by a biologist prior to their removal and removal procedures would follow the recommendations of the California Invasive Plant

Council. If herbicides are applied, they would be applied in compliance with applicable state and federal laws.

To avoid and minimize impacts on the southern California black walnut trees, the following avoidance and minimization measures would be implemented:

BIO-6: Environmentally Sensitive Area fencing would be installed around the protected root zone of the southern California walnut trees under the supervision of a qualified biological monitor, to prevent damage to roots or trunks of the trees. The protected root zone would be determined by measuring the tree diameter in inches at 4.5 feet up the tree trunk and multiplying that number by 1.5 to get the distance in feet from the trunk where the protected root zone should be established. No work would be allowed within the protected root zone of these trees.

To avoid and minimize impacts on the coastal whiptail, the following avoidance and minimization measures would be implemented:

BIO-7: A qualified biologist would complete pre-construction surveys no more than 48 hours prior to construction to determine the presence or absence of wildlife, including the coastal whiptail, in the project area. Surveys would be repeated if construction activities are suspended for five days or more. If any wildlife species are identified, appropriate measures would be developed and implemented to avoid impacts on these wildlife species, in consultation with appropriate resource agencies as applicable.

To avoid and minimize impacts on bats, the following measures would be implemented:

BIO-8: Any tree removal would be conducted during the month of October to avoid bat maternity and hibernation season, where feasible. Removal would be conducted as close to sunset as possible.

BIO-9: At least 30 days prior to tree removal, all trees to be removed would be surveyed by a qualified biologist to assess the presence of bats or potential bat-roosting cavities. If bats or bat-roosting cavities are identified, exclusion measures would be discussed with a qualified bat biologist and Caltrans biologist. During the non-breeding and active season (typically October), bats would be safely evicted and excluded from trees to be removed, to the extent feasible, under the direction of a qualified biologist, to prevent bats from roosting in these cavities prior to tree removal.

BIO-10: A qualified biological monitor would be onsite during tree removal in the event that all bats were not able to be excluded from the trees to be removed. If bats are disturbed during tree removal, work would be safely stopped until the bats have left the vicinity on their own. Work would resume only once all bats have left the site and/or approval to resume work is given by a qualified biologist.

BIO-11: Surveys and exclusion measures are expected to prevent maternal colonies from becoming established in the BSA. In the event that a maternal colony of bats is found, the CDFW would be consulted, and no work would be conducted within 100 feet of the maternal roosting site until the maternal season is over or the bats have left the site, or as otherwise directed by the CDFW. The site would be designated as a sensitive area and protected as such until the bats have left the site. No clearing and grubbing would be authorized adjacent to the roosting site. Combustion

equipment, such as generators, pumps, and vehicles, would not to be parked nor operated under or adjacent to the roosting site. Construction personnel would not be authorized to enter areas beneath the colony, especially during the evening exodus.

The following standard measures would be implemented to prevent the spread of invasive species:

BIO-12: Vegetation removed from the BSA would be treated and disposed of in a manner that would prevent the spread of invasive species onsite or offsite.

BIO-13: New landscaping materials, including erosion control seed mixes and other plantings, would be composed of non-invasive species and would be clear of weeds, and all erosion control and landscape planting would be conducted in a manner that would not result in the spread of invasive species.

BIO-14: Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed (State of California Department of Food and Agriculture, 2010) would not be used as part of the project.

With implementation of these measures, the project would be in compliance with the Executive Order 13112.

If construction is scheduled to begin during bird nesting season (typically February 1 to September 15), the following measures would be implemented:

BIO-15: Construction in areas with trees or vegetation that may provide nesting habitat for birds and raptors will be reduced to the maximum extent feasible.

BIO-16: Trimming and removal of vegetation and trees would be minimized and performed outside of the nesting season (typically February 1 to September 15) to the extent feasible.

BIO-17: In the event that trimming or removal of vegetation and trees must be conducted during the nesting season, nesting bird surveys would be completed by a qualified biologist no more than 48 hours prior to trimming or clearing activities to determine if nesting birds are within the affected vegetation. Nesting bird surveys would be repeated if trimming or removal activities are suspended for five days or more. In the event construction is scheduled during bird nesting season, nesting bird surveys would be completed no more than 48 hours prior to construction to determine if nesting birds, raptors, or active nests are in or within 500 feet of the construction area. Surveys would be repeated if construction activities are suspended for five days or more.

BIO-18: In the event nesting birds or raptors are found within 500 feet of the construction area, appropriate buffers (typically up to 300 feet for songbirds and up to 500 feet for raptors) would be implemented, in coordination with the CDFW, to ensure that nesting birds and active nests are not harmed. Buffers would include fencing or other barriers around the nests to prevent any access to these areas and would remain in place until birds have fledged and/or the nest is no longer active, as determined through coordination with the CDFW.

With implementation of this measure, the project would be in compliance with the MBTA and California Fish and Game Code.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?				☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		☒		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		☒		
d. Disturb any human remains, including those interred outside of formal cemeteries?		☒		

Impact Analysis

The following analysis incorporates the findings of an Archaeological Survey Report, Paleontological Letter Report, and Paleontological Identification and Evaluation Report completed for the project (Duke CRM, 2017a; GPA Consulting, 2017b; Duke CRM, 2017c).

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No Impact. No historical resources have been identified in the project area based on a review of aerial photographs and a records search conducted at the South Central Coastal Information Center, one of 12 regional information centers that comprise the California Historical Resources Information System (CHRIS). The existing bridge was constructed in 1934; however, the bridge is not eligible for listing on the National Register of Historic Places according to Caltrans' Historic Bridge Inventory (Caltrans, 2017). Therefore, no impacts on historical resources would result from the project.

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

Less Than Significant With Mitigation Incorporated. No archaeological resources have been identified in the project area based on a field survey and records search. The records search identified three prehistoric archaeological isolates (i.e., one or two artifacts occurring by themselves and not associated with an archaeological site) and four historical archaeological resources within one mile of the project area.

The Native American Heritage Commission (NAHC) was contacted to search the Sacred Lands File, which did not identify cultural resources within or adjacent to the project area. Native American consultation

was conducted with 22 Native American groups/individuals provided by the NAHC. Andrew Salas, a representative of the Gabrieleno Band of Mission Indians – Kizh Nation, expressed concern about the project area, stating that the area is culturally significant to the tribe, specifically local oil fields that played a large role in trade and medicinal purposes, (see below in Section 4.17, Tribal Cultural Resources). No other comments were received from Native American tribes.

Based on the field survey and records search conducted for the project area, the project area has a moderate sensitivity for archaeological resources. However, because of the disturbed nature of the project area from development of the existing bridge, Golden Avenue, the channelization of Carbon Canyon Creek, and residential development, the project has a low potential to affect archaeological resources.

If previously unidentified archaeological resources are un-earthed during construction, the project could disturb these resources and result in substantial adverse changes in the significance of the resources. However, a licensed archaeologist and a will be present during excavation and grading, as specified in mitigation measure CUL-4, that will monitor activity that could potentially disturb such resources. Additionally, a Native American monitor would be present for any earthmoving or construction activity in the project area, per measure TR-1. If archaeological resources are encountered during construction, implementation of mitigation measure CUL-1 would require that work be halted in that area until a qualified archaeologist can assess the significance of the find.

With implementation of mitigation measures CUL-1 and CUL-4, any impacts on archaeological resources encountered in the project area during construction would be avoided or minimized. Therefore, impacts related to archaeological resources would be less than significant with mitigation incorporated.

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

Less Than Significant With Mitigation Incorporated. The project area is underlain by young alluvial fan deposits from the late Pleistocene Epoch (2.5 million years ago to 11,700 years ago) and Holocene Epoch (11,700 years ago to today) in the western portion, and very old alluvial fan deposits from the early to middle Pleistocene Epoch (2.5 million years ago to 11,700 years ago) in the eastern portion (Duke CRM, 2017b).

Based on a paleontology records search completed for the project, no fossil localities are in the project area. However, the search did identify several resources near (within five miles) of the project area, including a horse fossil locality in similarly aged deposits, multiple nearby fossil localities in Pleistocene-age sediments containing the remains of large and small mammals, bird, reptile, amphibian, bird, fish, and invertebrates.

The young alluvial fan deposits are too recent to have accumulated or fossilized paleontological resources, and are assigned a low sensitivity. The very old alluvial fan deposits, however, have produced multiple nearby fossil localities, and are assigned a high sensitivity. In addition, the very close proximity of the young alluvial fan deposits to the very old alluvial fan deposits suggests the young alluvial fan deposits could be very thin and quickly transition into high sensitivity.

Excavation to a maximum depth of 15 feet would be required to construct the cast-in-drilled-hole piles, abutment footings, and abutment seats. Deeper ground disturbance required for the project may encounter deposits of Pleistocene-age very old alluvial fan deposits, which have a high sensitivity for containing paleontological resources. If paleontological resources are encountered during ground disturbing activities, the project could directly destroy a unique paleontological resource or site.

Mitigation measure CUL-2, listed below, would be implemented to require preparation of a Paleontological Mitigation Plan (PMP), which would include measures to monitor for paleontological resources during construction, and to report, collect, and curate any resources in the event of paleontological discoveries during discovery.

With implementation of mitigation measure CUL-2, any impacts on paleontological resources encountered in the project area during construction would be avoided or minimized. Therefore, impacts related to paleontological resources would be less than significant with mitigation incorporated.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact With Mitigation Incorporated. The NAHC was contacted to search the Sacred Lands File, which did not identify cultural resources within or adjacent to the project area. Native American consultation was conducted with 22 Native American groups/individuals provided by the NAHC. Andrew Salas, a representative of the Gabrieleno Band of Mission Indians – Kizh Nation, expressed concern about the project area, stating that the area is culturally significant to the tribe, specifically local oil fields that played a large role in trade and medicinal purposes, (see below in Section 4.17, Tribal Cultural Resources). No other comments were received from Native American tribes.

Based on the field survey and records search conducted for the project area, the project area has a moderate sensitivity for archaeological resources. However, because of the disturbed nature of the project area from development of the existing bridge, Golden Avenue, the channelization of Carbon Canyon Creek, and residential development, the project has a low potential to affect archaeological resources.

If human remains are un-earthed during construction, the project could disturb these remains. Implementation of mitigation measure CUL-3 would require compliance with Section 7050 of the California Health and Safety Code, and Section 5097.98 and .99 of the California Public Resources Code. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner must be contacted. Pursuant to California Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC who will then notify the Most Likely Descendent (MLD). California Public Resources Code Section 5097.90 states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave.

With implementation of mitigation measure CUL-3, any impacts on human remains encountered in the project area during construction would be avoided or minimized. Therefore, impacts related to human remains would be less than significant with mitigation incorporated.

Avoidance, Minimization, and Mitigation

CUL-1: Work shall be halted in the vicinity of any previously known or unknown buried cultural materials unearthed during construction until a qualified archaeologist can assess the significance of the materials. Any further measures required by the archaeologist will be implemented, including, if necessary, supplemental environmental documentation.

CUL-2: A PMP will be prepared 30 days prior to construction by a qualified Principal Paleontologist. The PMP will detail all the measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements:

1) Required preconstruction paleontological awareness training for ground disturbance personnel, including documentation of training, such as sign-in sheets, to establish communications protocols between construction personnel and the Principal Paleontologist. This training can be given in person or via video.

2) Monitoring, by a qualified Paleontological Monitor shall occur for any ground disturbance east of Carbon Creek, or, as indicated by the presence of a nearby Equus fossil locality, any disturbance deeper than 8 feet below the ground surface (b.g.s.).

3) A signed repository agreement.

4) Field and laboratory methods that meet the curation requirements of the identified repository that will be implemented for monitoring, reporting, collection, and curation of collected specimens.

5) A Paleontological Mitigation Report (PMR) discussing findings and analysis will be prepared by a Principal Paleontologist upon completion of Project earthmoving. The report will be included in the environmental Project file and submitted to the curation facility.

CUL-3: If human remains and associated artifacts are encountered during ground-disturbing activities, then the provisions of Section 7050 of the California Health and Safety Code, and Section 5097.98 and .99 of the California Public Resources Code, will be followed.

CUL-4: A archaeologist will be present during excavation and grading.

3.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to 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.				☒
ii. Strong seismic ground shaking?			☒	
iii. Seismic-related ground failure, including liquefaction?			☒	
iv. Landslides?				☒
b. Result in substantial soil erosion or the loss of topsoil?			☒	
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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?			☒	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?				☒

Impact Analysis

a) Expose people or structures to 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?

No Impact. The project area is not located within an Aquist-Priolo Earthquake Fault Zone (California Geological Survey, 2015). The nearest active Alquist-Priolo Earthquake Fault Zone is the Whittier Fault Zone, approximately two miles northeast of the project area. Therefore, no impacts related to earthquake fault rupture would result from the project.

ii. Strong seismic ground shaking?

Less Than Significant Impact. According to the California Geological Survey, there is potential for medium to high intensity ground shaking in the project area from anticipated future earthquakes (California Geological Survey, 2003). However, because the project includes the replacement of an existing bridge with a new bridge that would be constructed up to current seismic standards, including the Caltrans Seismic Design Criteria, the project would not expose people or structures to potential substantial adverse effects from strong seismic ground shaking. Therefore, impacts related to strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress, usually ground shaking from an earthquake or other sudden change in stress condition, causing it to behave like a liquid. Other types of seismic-related ground failure include collapsible soils, subsidence (the gradual caving in or sinking of an area of land), landslides, and lateral spreading (landslides that commonly form on gentle slopes and that have rapid fluid-like flow movement).

The State of California Seismic Hazard Zones Map for the Yorba Linda Quadrangle indicates that the project area is in a Liquefaction Hazard Zone (California Geological Survey, 2015). However, because the project includes the replacement of an existing bridge with a new bridge that would be constructed up to current seismic standards, including the Caltrans Seismic Design Criteria, the project would not expose people or structures to substantial adverse effects from seismic-related ground failure. Therefore, impacts related to seismic-related ground failure would be less than significant.

iv. Landslides?

No Impact. According to the State of California Seismic Hazard Zones Map for the Yorba Linda Quadrangle, the project area is not located in a Landslide Hazard Zone (California Geological Survey, 2015). Therefore, no impacts related to landslides would result from the project.

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

Less than Significant Impact. Erosion is the movement of rocks and soil from the Earth's surface by wind, rain, or running water. Several factors influence erosion, such as the size of soil particles (larger particles are more prone to erosion), and vegetation cover, which prevents erosion. The project area includes an existing bridge over the Carbon Canyon Creek Channel. The Carbon Canyon Creek Channel is a concrete

lined channel with top banks that are vegetated with sparse trees, shrubs, and grasses. Areas surrounding the bridge and channel are developed with residential land uses.

The potential for soil erosion can be described using a soil erodibility factor, also known as the K factor, which represents both the susceptibility of soil to erosion and the rate of runoff. Values for the K factor range from 0.02 to 0.69, with higher values indicating higher susceptibility to erosion by water. Soils high in clay have low K values, about 0.05 to 0.15, because these soils resist detachment. According to the United States Department of Agriculture (USDA) National Resources Conservation Service Web Soil Survey, soils in the project area have a K factor of 0.02, indicating a very low potential for erosion (United States Department of Agriculture, 2017).

Project construction would include the removal of the existing bridge, and excavation to a maximum depth of 15 feet to construct the cast-in-drilled-hole piles, abutment footings, and abutment seats for the replacement bridge. Temporary ground disturbance would loosen soils, which could result in soil erosion if there is a rain event during construction that washes away loose soil. However, construction would be conducted during the summer (June to September) when rain events would be unlikely. In addition, standard BMPs, such as use of erosion blankets and mats, would be implemented during construction to minimize soil erosion.

Because soils in the project area have a very low potential for erosion, and ground disturbance in the project area would be conducted during the summer (June to September) and would include implementation of BMPs to minimize erosion, the project would not result in substantial erosion or loss of topsoil. Therefore, impacts related to soil erosion would be less than significant.

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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. The State of California Seismic Hazard Zones Map for the Yorba Linda Quadrangle indicates that the project area is in a Liquefaction Hazard Zone (California Geological Survey, 2015). Because the project includes the replacement of an existing bridge with a new bridge that would be constructed up to current design standards, including the Caltrans Geotechnical Manual, the soil underlying the project area would not likely become unstable as a result of the project, and the potential for the project to result in liquefaction would be substantially minimized. Therefore, impacts related to unstable geologic units or soil would be less than significant.

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

No Impact. Expansive soils are prone to large volume changes (swelling and shrinking) from changes in water content, with higher moisture levels causing soils to swell, and lower moisture levels causing soils to shrink. According to the United States Geological Survey's Swelling Clays Map of the Conterminous United States, the project area is in an area with little or no swelling clay (United States Geological Survey, 1989).

Measurements of linear extensibility are also used to determine the shrink-swell potential of soils. The shrink-swell potential is low if soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If linear extensibility is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures.

According to the USDA National Resources Conservation Service Web Soil Survey, soils in the project area have linear extensibility of 1.5 percent, indicating a low shrink-swell potential (United States Department of Agriculture, 2017). The project area is not located on expansive soil. Therefore, no impacts related to expansive soil would result from the project.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

No Impact. The project would not require the use of septic tanks or alternative wastewater disposal systems because the project includes the removal and replacement of a bridge that would not generate wastewater. Therefore, no impacts related to septic tanks or alternative wastewater disposal systems would result from the project.

3.7 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			☒	
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			☒	

Impact Analysis

The following analysis incorporates the findings of an Air Quality and Greenhouse Gas Impact Assessment completed for the project (AMBIENT, 2017a).

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

Less Than Significant Impact. Existing sources of greenhouse gas emissions in the project area include emissions from vehicles traveling along Golden Avenue and surrounding roadways. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new emissions sources or generate increases in long-term greenhouse gas emissions.

Project construction would result in greenhouse gas emissions from the use of construction vehicles and equipment, and vehicle emissions from construction worker commutes to and from the project area. The SCAQMD has established a draft threshold of 3,000 metric tons of carbon dioxide equivalents ($MTCO_2e$)/year for greenhouse gas emissions resulting from residential and commercial development. As shown in **Table 4.4.** Short-Term Construction-Generated Greenhouse Gas Emissions, project construction would not result in substantial increases in emissions that would exceed the SCAQMD draft threshold.

Because no long-term greenhouse gas emissions are anticipated to result from the project, and construction-generated emissions would not exceed the SCAQMD draft threshold, the project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment. Therefore, impacts related to the generation of greenhouse gas emissions would be less than significant.

Table 4-4. Short-Term Construction-Generated Greenhouse Gas Emissions

Construction Activity	Greenhouse Gas Emissions ($MTCO_2e$)
Site Preparation/Grubbing	6.7
Grading/Excavation/Bridge Demolition	17.6
Bridge Construction/Drainage Improvements/Utilities/Subgrade/Retaining Walls	73.9
Paving	6.8
Total:	98.2

Source: AMBIENT, 2017a

Table Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalents

Based on CalEEMod computer modeling. Amortized emissions assume an average project life of 30 years. Refer to Appendix A for modeling results and assumptions.

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

Less Than Significant Impact. Because no long-term greenhouse gas emissions are anticipated to result from the project, and construction-generated emissions would not exceed the SCAQMD draft threshold, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Therefore, impacts related to conflicts with greenhouse reduction plans, policies, or regulations would be less than significant.

3.8 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or 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?			☒	
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			☒	
d. Be located on a site that 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?				☒
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?				☒
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?				☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			☒	
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				☒

Impact Analysis

The following analysis incorporates the findings of a Phase Initial Site Assessment (ISA) completed for 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. The project includes the replacement of the existing bridge with a new bridge that that would serve the same function, which is to provide vehicle, pedestrian, and bicycle access over the Carbon Canyon Creek Channel. Therefore, project operation would not involve the routine use, transport, or disposal of hazardous materials.

Project construction would require the use of construction materials that could be hazardous, such as paints, sealants, and cement; however, the transport, use, and disposal of these materials would be conducted in compliance with applicable federal, state, and local laws pertaining to the safe handling, transport, and disposal of hazardous materials, including the Resource Conservation and Recovery Act (RCRA), which includes requirements for hazardous solid waste management; the Department of Toxic Substances Control (DTSC) Environmental Health Standards for the Management of Hazardous Waste (CCR, Title 22, Division 4.5), which include standards for generators and transporters of hazardous waste; and the provisions of the Orange County Environmental Health Division, which include requirements for the use and storage of hazardous materials.

The project does not include the acquisition of ROW, and all construction would be completed in the existing public ROW. However, the replacement bridge would be wider and longer than the existing bridge, requiring ground disturbance in areas that extend beyond the existing project footprint. Excavation to a maximum depth of 15 feet would be required to construct the cast-in-drilled-hole piles, abutment footings, and abutment seats. Therefore, adjacent properties were reviewed during preparation of the Phase I ISA to determine if contaminated soil or groundwater has migrated to the project area and could be encountered during project construction.

According to the Phase I ISA prepared for the project, one active oil well is located on the adjacent property to the southwest of the bridge, and three plugged oil wells are on the adjacent property to the northeast of the bridge. In addition, the property at 1049 Golden Avenue known as the Former Plegel Oil Facility, located approximately 135 feet east of the bridge, was identified in the Orange County Industrial Site database as an open industrial cleanup case. The project would also require excavation in soils adjacent to the roadway, which could contain aerially deposited lead (ADL) from the historical use of leaded gasoline. Lastly, the area surrounding the bridge was historically used for agricultural purposes, and there is potential for pesticides in soil.

Structures built before 1978 have the potential to contain asbestos-containing materials (ACM) and/or lead-based paint (LBP). Because the bridge was constructed in 1934, ACM or LBP may have been used to construct the existing bridge. The bridge may also include roadway striping with LBPs.

Based on existing and historical uses on adjacent and nearby properties, including oil wells, industrial and agricultural activities, and the use of leaded gasoline, soil and groundwater in the project area could be

contaminated with petroleum hydrocarbons and pesticides, which could be disturbed during project construction. In addition, ACM and LBP on the existing bridge could be disturbed during removal of the bridge. Therefore, if these hazardous materials are released into the environment during handling or disposal of the materials, the project has the potential to create a significant hazard to the public or environment through the routine transport and disposal of hazardous materials during construction.

Avoidance and minimization measures HAZ-1 through HAZ-4, listed below, would be implemented to characterize the soils and groundwater in the project area, and to determine if they contain ADL, Total Recoverable Hydrocarbons (TPH), pesticides, and volatile organic compounds (VOC). A Soil Management Plan would also be prepared to ensure that contaminated soil is properly handled and disposed of during construction. ACM and LBP surveys would also be conducted prior to construction, and if detected, these materials would be handled in compliance with federal, state, and local regulations.

With implementation of avoidance and minimization measures HAZ-1 through HAZ-4, any hazardous materials encountered during project construction would be contained and disposed of in accordance with hazardous waste regulations, and the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Therefore, impacts related to these hazards would be less than significant.

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?

***Less Than Significant Imapct*.** The project includes the replacement of the existing bridge with a new bridge that that would serve the same function, which is to provide vehicle, pedestrian, and bicycle access over the Carbon Canyon Creek Channel. Therefore, project operation would not create significant hazards through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Project construction would require the use of construction materials that could be hazardous, such as paints, sealants, and cement; however, the transport, use, and disposal of these materials would be conducted in compliance with applicable federal, state, and local laws pertaining to the safe handling, transport, and disposal of hazardous materials, including RCRA, which includes requirements for hazardous solid waste management; the DTSC Environmental Health Standards for the Management of Hazardous Waste (CCR, Title 22, Division 4.5), which include standards for generators and transporters of hazardous waste; and the provisions of the Orange County Environmental Health Division, which include requirements for the use and storage of hazardous materials.

As discussed in Response 4.8 (a) above, based on existing and historical uses on adjacent and nearby properties, including oil wells, industrial and agricultural activities, and the use of leaded gasoline, soil and groundwater in the project area could be contaminated with petroleum hydrocarbons and pesticides, which could be disturbed during project construction. In addition, ACM and LBP on the existing bridge could be disturbed during removal of the bridge. Therefore, if these hazardous materials are accidentally released into the environment, the project has the potential to create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions.

Avoidance and minimization measures HAZ-1 through HAZ-4, listed below, would be implemented to characterize the soils and groundwater in the project area, and to determine if they contain TPH, VOCs, ADL, and pesticides. A Soil Management Plan would also be prepared to ensure that contaminated soil is properly handled and disposed of during construction. ACM and LBP surveys would also be conducted prior to construction, and if detected, these materials would be handled in compliance with federal, state, and local regulations.

With implementation of avoidance and minimization measures HAZ-1 through HAZ-4, any hazardous materials encountered during project construction would be contained and disposed of in accordance with hazardous waste regulations, and the project would not a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions. Therefore, impacts related to these hazards would be less than significant.

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

Less Than Significant Impact. The nearest school, Golden Elementary School, is approximately one-quarter mile to the west of the project area. The project includes the replacement of the existing bridge with a new bridge that that would serve the same function, which is to provide vehicle, pedestrian, and bicycle access over the Carbon Canyon Creek Channel. Therefore, project operation would not emit hazardous emissions or involve handling hazardous or acutely hazardous substances, or waste within one-quarter mile of the school.

Project construction would require the use of construction materials that could be hazardous, such as paints, sealants, and cement; however, the transport, use, and disposal of these materials would be conducted in compliance with applicable federal, state, and local laws pertaining to the safe handling, transport, and disposal of hazardous materials, including RCRA, which includes requirements for hazardous solid waste management; the DTSC Environmental Health Standards for the Management of Hazardous Waste (CCR, Title 22, Division 4.5), which include standards for generators and transporters of hazardous waste; and the provisions of the Orange County Environmental Health Division, which include requirements for the use and storage of hazardous materials.

As discussed in Response 4.8 (a) above, based on existing and historical uses on adjacent and nearby properties, including oil wells, industrial and agricultural activities, and the use of leaded gasoline, soil and groundwater in the project area could be contaminated with petroleum hydrocarbons and pesticides, which could be disturbed during project construction. In addition, ACM and LBP on the existing bridge could be disturbed during removal of the bridge. Therefore, if these hazardous materials are encountered during project construction, the project would involve handling hazardous or acutely hazardous substances within one-quarter mile of an existing school.

Avoidance and minimization measures HAZ-1 through HAZ-4, listed below, would be implemented to characterize the soils and groundwater in the project area, and to determine if they contain TPH, VOCs, ADL, and pesticides. A Soil Management Plan would also be prepared to ensure that contaminated soil is properly handled and disposed of during construction. ACM and LBP surveys would also be conducted

prior to construction, and if detected, these materials would be handled in compliance with federal, state, and local regulations.

With implementation of avoidance and minimization measures HAZ-1 though HAZ-4, any hazardous materials encountered during project construction would be contained and disposed of in accordance with hazardous waste regulations. In addition, following project construction, the handling of hazardous materials within one-quarter mile of the school would cease. Therefore, impacts related to these hazards would be less than significant.

d) Be located on a site that 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. Government Code Section 65962.5 requires the California Environmental Protection Agency to compile the Hazardous Waste and Substances Sites List, also called the Cortese List. According to a search of the Cortese List, the project area is no located on a site compiled pursuant to Government Code Section 65962.5 (California Department of Toxic Substances Control, 2007). Therefore, no impacts related to hazardous materials sites would result from the project.

e) Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?

***No Impact*.** The project is not in an airport land use plan and is not within two miles of a public airport or public use airport. Therefore, no impacts related to airport safety hazards would result from the project.

f) Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?

No Impact. The project is not in the vicinity of a private airstrip. Therefore, no impacts related to airstrip safety hazards would result from the project.

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

***Less Than Significant Impact*.** Because the project includes the replacement of the existing bridge with a new bridge, emergency response and evacuation procedures during project operation would be the same as existing conditions, and the project would not interfere with an adopted emergency response plan or emergency evacuation plan.

During the 6- to 9-month construction period, Golden Avenue would be closed from California Street to immediately west of Rose Drive, approximately 0.18 mile east of the project area, which could affect emergency access within and surrounding the project area. However, through access would be allowed to and from residences along Navigation Circle to the east of the bridge. In addition, detour routes around the construction area would be available on Rose Drive, Bastanchury Road, and Valencia Avenue. Finally, coordination with emergency service providers would be conducted to minimize potential impacts.

Because detours would be provided during project construction, and coordination with emergency service providers would be conducted, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts related to emergency response of evacuation plans would be less than significant.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

***No Impact*.** The project is not adjacent to wildlands and does not include residences that are intermixed with wildlands. Therefore, no impacts related to wildland fires would result from the project.

Avoidance and Minimization

HAZ-1: A Phase II/Site Characterization Specialist will conduct sampling within the project area to determine whether contamination exists, including TPH, VOCs, ADL, and pesticides. Results of the sampling would indicate the level of remediation efforts that may be required, if necessary.

HAZ-2: A Soil Management Plan (SMP) will be prepared to provide procedures to guide soil management during excavation, confirmation sampling, and backfilling operations in the project area. A Photo Ionized Detector (PID) will be used to determine any health safety issues relating to VOCs.

HAZ-3: A comprehensive survey and sampling will be completed to confirm the presence or absence of ACMs prior to bridge removal or renovation. Any future testing, removal, or disturbance of ACMs will be handled in compliance with federal, state and local regulations. Licensed, qualified asbestos abatement personnel should be retained prior to any demolition or renovation of subject facilities.

HAZ-4: A work plan will be developed for LBP survey and sampling prior to bridge removal or renovation. Construction activities (including demolition) that disturb materials or paints containing any amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR, Section 1532.1. Deteriorated paint is defined by Title 17, CCR, Division 1, Chapter 8, Section 35022 as a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separated from a component. Demolition of a deteriorated LBP component will require waste characterization and appropriate disposal. If dust containing hazardous concentrations of lead are generated during scraping or cutting materials coated with LBP, torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory protection will be implemented during the demolition of materials coated with LBP.

3.9 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?			☒	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?				☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?			☒	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?			☒	
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			☒	
f. Otherwise substantially degrade water quality?			☒	
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				☒
h. Place within a 100-year flood hazard area structures that would impeded or redirect flood flows?				☒

i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?				☒
j.	Inundation by seiche, tsunami, or mudflow?				☒

Impact Analysis

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact. Water quality standards in the project area are enforced by the Santa Ana RWQCB and are listed in the Santa Ana River Basin Water Quality Control Plan. Waste discharge requirements are issued by the State Water Resources Control Board (SWRCB) to regulate point source discharges (any single identifiable source of pollution from which pollutants are discharged, such as a pipe or ditch) that are exempt from Title 27, Section 20090 of the Code of Federal Regulations (CFR) and are not subject to the CWA, including discharges of domestic sewage or treated effluent, discharges of wastewater to land (e.g., from evaporation or percolation ponds), discharges of waste to wells by injection, cleanup of unintentional or unauthorized releases of waste or pollutants to the environment, discharges of gas condensate units, use of nonhazardous decomposable waste as a soil amendment, discharges of drilling mud and cuttings from well-drilling operations, recycling or reuse of materials salvaged from waste or produced by waste treatment, and waste treatment in fully enclosed facilities, such as tanks.

The project includes the replacement of the existing bridge with a new bridge that that would serve the same function, which is to provide vehicle, pedestrian, and bicycle access over the Carbon Canyon Creek Channel. Therefore, project operation would not violate any water quality standards or waste discharge requirements.

The project would require construction over the channel and connecting storm drains pipes at all four quadrants of the bridge to the existing concrete channel wall. Storm drain construction would require work in the concrete-lined portion of the creek to form a reinforced concrete collar around the additional storm drain pipes. Work would be conducted during the dry season (April to October); therefore, a water diversion would not be required for the project.

During project construction, there is potential that exposed soils, construction debris, and other pollutants could enter stormwater runoff that discharges into the Carbon Canyon Creek Channel. Construction equipment accessing the creek and construction activities within the creek would result in approximately 330 linear feet and 0.08 acre of temporary impacts on waters under jurisdiction of the USACE and RWQCB, and approximately 445 linear feet and 0.91 acres of temporary impacts on waters under CDFW jurisdiction. Installation of the reinforced concrete collar around the additional storm drain pipes would result in approximately 0.01 acre of permanent impacts on waters under jurisdiction of the USACE, RWQCB, and CDFW. In addition, shading of the creek by the new widened bridge would result in approximately 0.05 acre of permanent impacts on waters under CDFW jurisdiction. Because work would be required within the creek, a CWA Section 404 Nationwide Permit (NWP) verification letter from the

USACE, Section 401 Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFW would be required for the project.

Because the project would be completed in compliance with required permits, the project would not violate any water quality standards or waste discharge requirements. Therefore, impacts related to water quality standards or waste discharge requirements would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre- existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

No Impact. The project includes the replacement of the existing bridge with a new bridge that that would serve the same function, which is to provide vehicle, pedestrian, and bicycle access over the Carbon Canyon Creek Channel. No groundwater supplies are required for the project. Therefore, no impacts related to groundwater supplies or groundwater recharge would result from the project.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?

Less Than Significant Impact. The Carbon Canyon Creek Channel is a concrete-lined channel that crosses beneath the Golden Avenue Bridge in the project area. Stormwater from the bridge currently drains into the channel. As part of the project, storm drain pipes would be connected at all four quadrants of the replacement bridge to the existing concrete channel wall. However, no alterations to existing drainage patterns would be required.

Project construction would require ground disturbance, which could alter the existing drainage pattern in the project area. However, standard BMPs, such as use of erosion blankets and mats, would be implemented during construction to minimize soil erosion.

Because stormwater would continue to drain into the Carbon Canyon Creek Channel and standard BMPs would be implemented during construction to minimize soil erosion, the project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation onsite or offsite. Therefore, impacts related to erosion or siltation would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?

Less Than Significant Impact. As discussed in Response 4.9 (c) above, stormwater would continue to drain into the Carbon Canyon Creek Channel after project implementation. The replacement bridge would be wider and longer than the existing bridge, which would result in increased impervious surface areas that could cause additional runoff to enter the channel. However, the channel is a flood control facility that is designed to retard flood flows. Therefore, the channel is expected to accommodate the additional runoff that could result from the project.

Project construction would require ground disturbance, which could alter the existing drainage pattern in the project area. However, standard BMPs, such as use of earth dikes, drainage swales, and ditches, would be implemented during construction to control the rate or amount of surface runoff so that flooding onsite or offsite would be avoided.

Because stormwater would continue to drain into the Carbon Canyon Creek Channel, which is designed to control flooding, and standard BMPs would be implemented during construction to minimize onsite or offsite flooding, the project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. Therefore, impacts related to flooding would be less than significant.

e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. As discussed in Responses 4.9 (c) and (d) above, stormwater would continue to drain into the Carbon Canyon Creek Channel after project implementation. The replacement bridge would be wider and longer than the existing bridge, which would result in increased impervious surface areas that could cause additional runoff to enter the channel. However, the channel is a flood control facility that is designed to retard flood flows. Therefore, the channel is expected to accommodate the additional runoff that could result from the project. In addition, runoff from the replacement bridge would be similar to existing runoff from a typical roadway surface, and the project would not generate substantial additional sources of polluted runoff.

Because stormwater would continue to drain into the Carbon Canyon Creek Channel, which is designed to accommodate runoff in the project area, and runoff from the replacement bridge would be characteristic of runoff from a typical roadway surface, the project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, impacts related to runoff would be less than significant.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. Project construction would be conducted in compliance with measures included in required permits, such as a Section 404 of the CWA Nationwide Permit, Section 401 of the CWA Water Quality Certification, and California Fish and Game Code Section 1602 Streambed Alteration Agreement. Standard BMPs would be implemented during project construction to minimize water quality impacts. Runoff from the replacement bridge would be similar to existing runoff from a typical roadway surface, and the project would not generate substantial additional sources of polluted runoff.

Because the project would be conducted in compliance with required permits, would include implementation of standard BMPs during construction, and would not generate substantial additional sources of polluted runoff, the project would not otherwise substantially degrade water quality. Therefore, impacts related to water quality would be less than significant.

g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The project includes the replacement of an existing bridge, and does not include the construction of housing. Therefore, no impacts related to housing in a 100-year flood hazard area would result from the project.

h) Place within a 100-year flood hazard area structures that would impeded or redirect flood flows?

No Impact. The portion of the project area that includes the Carbon Canyon Creek Channel is in FEMA Flood Zone A, which is an area where no base flood has been determined (Federal Emergency Management Agency, 2009). The remaining portion of the project area surrounding the channel is in Zone X, which is an area outside of the 0.2 percent annual chance floodplain. No structures would be placed inside the channel as part of the project. Therefore, no impacts related to placing structures within a 100-year flood hazard area would result from the project.

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The project is not located within the inundation area of any levees or dams. Therefore, no impacts related to exposing people or structures to a significant risk of loss, injury, or death involving flooding would result from the project.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. A seiche is a temporary disturbance or oscillation in the water level of a lake or partially enclosed body of water. A tsunami is a long, high ocean wave caused by an earthquake, submarine landslide, or other disturbance. A mudflow is a fluid or hardened stream or avalanche of mud.

The project area is not in proximity to a lake or ocean, and is therefore not susceptible to seiche or tsunami. The project area is relatively flat and paved, and is not susceptible to mudflows. Therefore, no impacts related to inundation by seiche, tsunami, or mudflow would result from the project.

3.10 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?				☒
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				☒
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				☒

Impact Analysis

a) Physically divide an established community?

No Impact. The existing bridge provides vehicle, bicycle, and pedestrian access over the Carbon Canyon Creek Channel. The project includes replacing the existing bridge with a new bridge that would continue to provide access across the channel, as well as accommodate a proposed bike path beneath the bridge as part of the OC Loop Bikeway Project. Therefore, no impacts related to physically dividing an established community would result from the project.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project area is located within the existing public ROW, and would not change the land use or zoning designations as specified in the City's General Plan and Zoning Ordinance. Therefore, no impacts related to conflicts with land use plans, policies, or regulations would result from the project.

c) ***Conflict with any applicable habitat conservation plan or natural community conservation plan?***

No Impact. The project area is not part of a habitat conservation plan or natural community conservation plan. Therefore, no impacts related to these plans would result from the project.

3.11 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				☒
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?				☒

Impact Analysis

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. According to the Mineral Land Classification (MLC) for Orange County, the project area is identified as an area where no significant construction aggregate deposits are present, or little likelihood exists for their presence (California Geological Survey, 1981). In addition, according to the City's General Plan, Placentia does not contain any mineral resources with the exception of petroleum (City of Placentia, 2003). However, no known mineral resources are in the project area. Therefore, no impacts related to the loss of availability of a known mineral resource would result from the project.

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. According to the City's General Plan, the project area is not designated as a locally important mineral resource recovery site. Therefore, no impacts related to the loss of availability of a locally important resource recovery site would result from the project.

3.12 Noise

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?		☒		
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?			☒	
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				☒
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		☒		
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?				☒
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?				☒

Impact Analysis

The following analysis incorporates the findings of a Noise Impact Assessment prepared for the project (AMBIENT, 2017b).

a) Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Less Than Significant With Mitigation Incorporated. The City's General Plan and Municipal Code do not identify noise level standards that apply to construction-related activities. The City's Municipal Code generally limits construction activities to between the hours of 7:00 a.m. to 7:00 p.m. on weekdays and

between 9:00 a.m. and 6:00 p.m. on Saturdays. The City's General Plan, Noise Element is slightly more conservative, limiting construction activities to between the hours of 7:00 a.m. to 6:00 p.m.

The primary sources of noise in the project area are vehicles traveling along Golden Avenue and surrounding roadways. Existing noise levels measured in the project area are shown in **Table 4-5.** Measured Ambient Noise Levels. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new noise sources or generate increases in long-term noise.

Table 4-5. Measured Ambient Noise Levels

Location	Monitoring Period	Primary Noise Source	Noise Levels (dBA)	
			L_{eq}	L_{max}
2300 California Street, Placentia (Approximately 36 feet from the centerline of Golden Avenue)	1:10 to 1:20 p.m.	Vehicle Traffic	58	69
4011 Winterhaven Street, Yorba Linda (Approximately 36 feet from the centerline of Golden Avenue)	9:42 to 9:52 a.m.	Vehicle Traffic	60	73

Source: AMBIENT, 2017b

Table Notes: Noise measurements were conducted on November 10, 2016 using a Larson Davis Model 820 Type I sound level meter.

Project construction would result in a temporary increase in noise levels during the up to 7-month construction period. As shown in **Table 4-6.** Typical Construction Equipment Noise, individual equipment noise levels during construction typically range from approximately 73 to 83 A-weighted decibels (dBA) equivalent continuous sound level (L_{eq}) at 50 feet, with intermittent noise levels reaching up to approximately 90 dBA maximum sound level (L_{max}). The use of pile drivers and other more intensive noise equipment and activities are not anticipated to be required for this project.

Table 4-6. Typical Construction Equipment Noise

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours (feet, dBA L_{eq})		
	L_{max}	L_{eq}	70 dBA	65 dBA	60 dBA
Air Compressor	80	76	105	187	334
Auger/Drill Rig	85	78	133	236	420
Backhoe/Front End Loader	80	76	105	187	334
Compactor (Ground)	80	73	74	133	236
Concrete Mixer Truck	85	81	187	334	594
Concrete Pump Truck	82	75	94	167	297
Concrete Saw	90	83	236	420	748

Crane	85	77	118	210	374
Dozer/Grader/Excavator/Scraper	85	81	187	334	594
Generator	82	79	149	265	472
Gradall/Forklift	85	81	187	334	594
Jack Hammer	85	78	133	236	420
Pavement Scarifier/Roller	85	78	133	236	420
Paver	85	82	210	374	667
Pneumatic Tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (Dump/Flat Bed)	84	80	167	297	529

Sources: FTA 2006, FHWA 2008

Table Notes: dBA = A-weighted decibels; L_{eq} = equivalent continuous sound level; L_{max} = maximum sound level

Noise levels are based on maximum equipment noise levels. Actual noise levels are typically lower, particularly if equipment is fitted with exhaust mufflers and engine shrouds.

Construction activities may also result in short-term increases in vehicle traffic along area roadways. Typically, a doubling of vehicle traffic would be required before a significant increase in traffic noise levels would occur. Construction-generated traffic would not result in a doubling of vehicle traffic along area roadways and, therefore, would not result in a substantial increase in traffic noise levels.

Nearby sensitive receptors include residential dwellings, the nearest of which are located adjacent to the northwestern and southeastern boundaries of the project area. Assuming that the two loudest pieces of equipment were to operate simultaneously over a one-hour period, predicted average-hourly exterior noise levels at the nearest residences could reach levels of approximately 81 to 87 dBA L_{eq}, with intermittent noise levels of approximately 84-89 dBA L_{max}. Construction activities that occur during these more noise-sensitive evening and nighttime hours could result in increased levels of annoyance and potential sleep disruption to nearby residential building occupants. If constructed is completed during nighttime hours, construction activities would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance.

Mitigation measures N-1 through N-4, listed below, would be implemented during project construction and would limit construction activities between the daytime hours of 7:00 a.m. to 6:00 p.m. on weekdays and 9:00 a.m. to 6:00 p.m. on Saturdays. These hourly limitations would ensure compliance with both City of Placentia and City of Yorba Linda hourly noise restrictions for construction activities. Compliance with measures N-1 through N-4 would also require implementation of various measures, such as the use construction equipment that are properly muffled in accordance with manufacturers' specifications, use of quieter equipment alternatives, such as electrified equipment (to the extent available). These measures could reduce construction noise levels by approximately 10 decibels (dB).

With implementation of mitigation measures N-1 through N-4, noise levels would not exceed standards in established in local general plans or noise ordinances. Therefore, impacts related to exposure of

persons or generation of noise levels in excess of standards would be less than significant with mitigation incorporated.

b) Expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. No federal, state, or local regulatory standards have been adopted for groundborne vibration or noise. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may result. Short periods of ground vibration in excess of 0.2 in/sec ppv can also be expected to result in increased levels of annoyance to people within buildings.

Construction activities and related equipment anticipated to be associated with project construction may generate groundborne vibration levels of approximately 0.21 in/sec (94 vibration velocity level (VdB)), or less, at 25 feet, as shown in **Table 4.5.** Typical Construction Equipment Vibration Levels. Based on Caltrans measurement data, use of off-road tractors, dozers, earthmovers, and haul trucks generates groundborne vibration levels of less than 0.10 in/sec (87 VdB) at 25 feet, or less than one-half of the commonly applied architectural damage risk and human annoyance standards. The use of large pavement breakers and pile drivers are not anticipated to be required for the project.

Table 4-7. Typical Construction Equipment Vibration Levels

Equipment	Vibration Level at 25 Feet	
	Peak Particle Velocity (ppv, in/sec)	VdB (micro-inch/second)
Vibratory Roller	0.210	94
Caisson Drill	0.089	87
Large Bulldozers	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozers	0.003	58

Source: FTA 2006, Caltrans 2002, 2014

Table Notes: ppv = peak-particle velocity; in/sec = inches per second; VdB = vibration velocity level

The nearest existing structures are approximately 30 feet from the project area. Assuming a maximum vibration level of 0.21 in/sec ppv at the project area boundary, the highest predicted construction vibration levels at off-site structures would be approximately 0.17 in/sec ppv, or less. Because construction-related vibration levels would not exceed the commonly applied standard of 0.2 in/sec at nearby existing land uses, the project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels. Therefore, impacts related to groundborne vibration or noise would be less than significant.

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. The primary sources of noise in the project area are vehicles traveling along Golden Avenue and surrounding roadways. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new noise sources or generate increases in long-term noise. Therefore, no impacts related to a permanent increase in ambient noise levels would result from the project.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant With Mitigation Incorporated. The primary sources of noise in the project area are vehicles traveling along Golden Avenue and surrounding roadways. Existing noise levels measured in the project area are shown in **Table 4-5.** Measured Ambient Noise Levels. The project would not result in long-term changes in vehicle operations (e.g., traffic volumes, vehicle speeds) along Golden Avenue or other roadways, and would therefore not create any new noise sources or generate increases in long-term noise.

Project construction would result in a temporary increase in noise levels during the 6- to 9-month construction period. As shown in **Table 4-6.** Typical Construction Equipment Noise, individual equipment noise levels during construction typically range from approximately 73 to 83 dBA L_{eq} at 50 feet, with intermittent noise levels reaching up to approximately 90 dBA L_{max}. The use of pile drivers and other more intensive noise equipment and activities are not anticipated to be required for this project.

Construction activities may also result in short-term increases in vehicle traffic along area roadways. Typically, a doubling of vehicle traffic would be required before a significant increase in traffic noise levels would occur. Construction-generated traffic would not result in a doubling of vehicle traffic along area roadways and, therefore, would not result in a substantial increase in traffic noise levels.

Nearby sensitive receptors include residential dwellings, the nearest of which are located adjacent to the northwestern and southeastern boundaries of the project area. Assuming that the two loudest pieces of equipment were to operate simultaneously over a one-hour period, predicted average-hourly exterior noise levels at the nearest residences could reach levels of approximately 81 to 87 dBA L_{eq}, with intermittent noise levels of approximately 84-89 dBA L_{max}. Construction activities that occur during these more noise-sensitive evening and nighttime hours could result in increased levels of annoyance and potential sleep disruption to nearby residential building occupants. Therefore, construction activities would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Mitigation measures N-1 through N-4, listed below, would be implemented during project construction and would limit construction activities between the daytime hours of 7:00 a.m. to 6:00 p.m. on weekdays and 9:00 a.m. to 6:00 p.m. on Saturdays. These hourly limitations would ensure compliance with both City of Placentia and City of Yorba Linda hourly noise restrictions for construction activities. Compliance with mitigation measures N-1 through N-4 would also require implementation of various measures, such as

the use construction equipment that are properly muffled in accordance with manufacturers' specifications, use of quieter equipment alternatives, such as electrified equipment (to the extent available). These measures could reduce construction noise levels by approximately 10 dBA.

With implementation of mitigation measures, the project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Therefore, impacts related to a substantial temporary or period increase in ambient noise levels would be less than significant with mitigation incorporated.

Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?

No Impact. The project area is not located within an airport land use plan area or within two miles of a public airport or public use airport. Therefore, no impacts related to exposure of people to excessive noise levels would result from the project.

e) Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?

No Impact. The project area is not located within the vicinity of a private airstrip. Therefore, no impacts related to exposure of people to excessive noise levels would result from the project.

Avoidance, Minimization, and Mitigation

The following mitigation measures shall be implemented to reduce noise impacts at nearby noise-sensitive land uses:

N-1 Construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, shall be limited to between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays.

N-2 Internal combustion engines shall be equipped with engine shrouds and exhaust mufflers in accordance with manufacturer recommendations.

N-3 Portable/stationary equipment (e.g., generators, compressors) shall be located at the furthest distance from the nearest residential dwelling.

N-4 To the extent locally available, quieter equipment alternatives, such as electrified equipment, shall be utilized.

3.13 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				☒
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?				☒
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?				☒

Impact Analysis

a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

No Impact. The project includes the replacement of an existing bridge with a new bridge that would have the same number of lanes. The project does not propose new homes or businesses, and would not include the extension of roads or other infrastructure that would provide new access to the area. Therefore, no impacts related to inducing population growth would result from the project.

b) Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?

No Impact. There is no housing in the project area that would be displaced by the project. Therefore, no impacts related to the displacement of housing would result from the project.

c) Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?

No Impact. Because the project area is limited to public roadways, no people reside in the project area. Therefore, no impacts related to the displacement of people would result from the project.

3.14 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services: i. Fire Protection? ii. Police Protection? iii. Schools? iv. Parks? v. Other public facilities?				☒

Impact Analysis

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:

i. Fire Protection?

ii. Police Protection?

iii. Schools?

iv. Parks?

v. Other public facilities?

No Impact. The project includes the replacement of an existing bridge with a new bridge that would serve the same function of providing vehicle, bicycle, and pedestrian access over the Carbon Canyon Creek Channel. Service ratios, response times, and other performance objectives would not be affected by the project such that the construction of new or physically altered fire protection, police protection, schools,

parks, or other public facilities would be required. Therefore, no impacts related to new or physically altered governmental facilities would result from the project.

3.15 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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?				☒
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				☒

Impact Analysis

a) 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. The project includes the replacement of an existing bridge with a new bridge that would serve the same function of providing vehicle, bicycle, and pedestrian access over the Carbon Canyon Creek Channel. The project would not increase access to existing parks or recreational facilities. Therefore, no impacts related to the substantial physical deterioration of existing parks or recreational facilities would result from the project.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The project includes the replacement of an existing bridge with a new bridge that would serve the same function of providing vehicle, bicycle, and pedestrian access over the Carbon Canyon Creek Channel. The project does not include recreational facilities. Therefore, no impacts related to physical effects from recreational facilities would result from the project.

3.16 Transportation/Traffic

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				☒
b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?				☒
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				☒
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				☒
e. Result in inadequate emergency access?			☒	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				☒

Impact Analysis

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system,

including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

No Impact. The project includes the replacement of an existing, functionally obsolete bridge with a new bridge that would have two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet AASHTO minimum standards. Traffic operations in the project area would be improved because the new bridge would meet current standards. Therefore, no impacts related to conflicts with plans, ordinances, or policies would result from the project.

b) Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?

No Impact. The project includes the replacement of an existing, functionally obsolete bridge with a new bridge that would have two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet AASHTO minimum standards. Traffic operations in the project area would be improved because the new bridge would meet current standards and would no longer be functionally obsolete. Therefore, no impacts related to conflicts with the congestion management program would result from the project.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The project includes the replacement of an existing bridge and is not located in proximity to an airport. Therefore, no impacts related to changes in air traffic patterns would result from the project.

d) Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The project includes the replacement of an existing, functionally obsolete bridge with a new bridge that would have two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet AASHTO minimum standards. Traffic safety in the project area would be improved because the new bridge would meet current standards and would no longer be functionally obsolete. Therefore, no impacts related to increased safety hazards would result from the project.

e) Result in inadequate emergency access?

Less Than Significant Impact. Because the project includes the replacement of the existing bridge with a new bridge, emergency access during project operation would be the same as existing conditions, and the project would not result in in adequate emergency access.

During the 7-month construction period, Golden Avenue would be closed from California Street to immediately west of Rose Drive, approximately 0.18 mile east of the project area, which could affect emergency access within and surrounding the project area. However, through access would be allowed to and from residences along Navigation Circle to the east of the bridge. In addition, detour routes around the construction area would be available on Rose Drive, Bastanchury Road, and Valencia Avenue (see **Appendix A, Engineer Drawings (Traffic Control Plan Sheet)**). Finally, coordination with emergency service providers would be conducted to minimize potential impacts.

Because detours would be provided during project construction, and coordination with emergency service providers would be conducted, the project would not result in inadequate emergency access (see Appendix A). Therefore, impacts related to emergency access would be less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. Golden Avenue is a residential street with a narrow shoulder and Class II bike path on the north and south sides of the roadway to the east and west of the bridge. Sidewalks also line Golden Avenue to the east and west of the bridge. Golden Avenue narrows at the bridge approaches and is absent of any shoulders, bike paths, or sidewalks.

The anticipated replacement bridge would be widened to 58 feet and 4 inches to accommodate two traffic lanes, Class II bike lanes/shoulders, and sidewalks that meet AASHTO minimum standards. In addition, the replacement bridge would be lengthened to 82 feet and 6 inches in order to accommodate the planned bike path along the Carbon Canyon Creek Channel as part of the OC Loop Bikeway Project.

The OC Loop Bikeway Project is being implemented as part of the Orange County Transportation Authority's (OCTA) 2009 Commuter Bikeways Strategic Plan (CBSP) (Orange County Transportation Authority, 2009). The CBSP is intended to provide a comprehensive blueprint for the existing bikeways in the county, and to propose new facilities to complete a network of bikeways through the county. A portion of the proposed "Segment D" trail runs along the Carbon Canyon Creek Channel and overlaps with the project area. A bicycle ramp connecting Golden Avenue to the OC Loop Bikeway will be construction as part of the project.

The project includes several improvements to bicycle and pedestrian facilities, and would also facilitate a connection to the OC Loop Bikeway. Therefore, no impacts related to conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities would result from the project.

3.17 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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				☒
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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		☒		

Impact Analysis

The following analysis incorporates the findings of an Archaeological Survey Report completed for the project (Duke CRM, 2017a).

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. The NAHC was contacted to search the Sacred Lands File, which did not identify cultural resources within or adjacent to the project area. No tribal cultural resources listed or eligible for listing in the California Register of Historical Resources, or in a local register, have been identified in the project area based on a field survey and records search. Therefore, no impacts related to these resources would result from the project.

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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation Incorporated. The NAHC was contacted to search the Sacred Lands File, which did not identify cultural resources within or adjacent to the project area. Native American consultation was conducted with two Native American groups/individuals in compliance with Assembly Bill 52. Andrew Salas, a representative of the Gabrieleno Band of Mission Indians – Kizh Nation,

expressed concern about the project area, stating that the area is culturally significant to the tribe, specifically local oil fields that played a large role in trade and medicinal purposes. No other comments were received from Native American tribes. Mr. Salas recommended archaeological and Native American monitoring during project construction.

Based on the field survey and records search conducted for the project area, the project area has a moderate sensitivity for archaeological resources. However, because of the disturbed nature of the project area from development of the existing bridge, Golden Avenue, the channelization of Carbon Canyon Creek, and residential development, the project has a low potential to affect archaeological resources.

If previously unidentified tribal cultural resources are un-earthed during construction, the project could disturb these resources and result in substantial adverse changes in the significance of the resources. A Native American monitor will be present for all earthmoving and/or construction operations to prevent potential impacts to tribal cultural resources, per avoidance measure TR-1. Additionally, a licensed archaeologist will be present during excavation and grading, as specified in measure CUL-4, that will monitor activity that could potentially disturb such resources. If tribal cultural resources are encountered during construction, implementation if mitigation measure CUL-1 would require that work be halted in that area until a qualified archaeologist can assess the significance of the find.

With implementation of mitigation measures CUL-1 through CUL-4 and TR-1, any impacts on tribal cultural resources encountered in the project area during construction would be avoided or minimized. Therefore, impacts related to tribal cultural resources would be less than significant with mitigation incorporated.

Avoidance, Minimization, and Mitigation

The following mitigation measure will be implemented as part of the project:

TR-1: A Native American monitor will be present for all earthmoving and/or construction operations.

With implementation of TR-1, the project would result in less than significant impacts on tribal resources.

3.18 Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				☒
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				☒
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				☒
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?				☒
e. 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?				☒
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				☒
g. Comply with federal, state, and local statutes and regulations related to solid waste?				☒

Impact Analysis

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The project includes the replacement of an existing bridge that does not require wastewater treatment. Therefore, no impacts related to wastewater treatment requirements would result from the project.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The project includes the replacement of an existing bridge that does not require water or wastewater treatment. Therefore, no impacts related to wastewater treatment requirements would result from the project.

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Stormwater from the bridge currently drains into the Carbon Canyon Creek Channel. As part of the project, storm drain pipes would be connected at all four quadrants of the replacement bridge to the existing concrete channel wall. No additional or expanded stormwater drainage facilities would be required. Therefore, no impacts related to the construction of new or expanded stormwater drainage facilities would result from the project.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?

No Impact. The project includes the replacement of an existing bridge that does not require substantial water supplies. Therefore, no impacts related to water supplies would result from the project.

e) 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?

No Impact. The project includes the replacement of an existing bridge that does not require wastewater treatment. Therefore, no impacts related to wastewater treatment capacity would result from the project.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

No Impact. The nearest landfill to the project area is the Olinda Alpha Landfill, which has enough projected capacity to serve residents and businesses until 2030 (County of Orange Waste and Recycling, n.d.). The project includes the replacement of an existing bridge that does not require solid waste disposal. Project construction would require minimal, short-term solid waste disposal, which would be accommodated by a landfill with sufficient permitted capacity. Therefore, no impacts related to landfill capacity would result from the project.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The project includes the replacement of an existing bridge that does not require solid waste disposal. Project construction would require minimal, short-term solid waste disposal, which would be conducted in compliance with federal, state, and local statues and regulations. Therefore, no impacts related to solid waste compliance would result from the project.

3.19 Mandatory Findings of Significance

Does the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have the potential to 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, 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?			☒	
b. 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)?		☒		
c. Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?		☒		

Impact Analysis

a) Have the potential to 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, 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 Impacts. As discussed in this Initial Study, the project would not result in a potential significant impact on fish or wildlife, threaten to eliminate a plant or animal community, 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. Therefore, impacts would be less than significant.

b) 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 with Mitigation Incorporated. As discussed in this Initial Study, the project could result in impacts on aesthetics, air quality, biological resources, cultural resources, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, tribal cultural resources, and transportation/traffic. The resource study area for hazards and hazardous materials, noise, and transportation/traffic is the immediate residential community where the project area is located. The resource study area for biological resources is the project area and connected creekside areas along the Carbon Canyon Creek Channel within Placentia; for cultural resources and tribal cultural resources, the resource study area is the City of Placentia; for hydrology and water quality, the resource study area is the Carbon Creek Subwatershed of the Lower San Gabriel River Watershed; and for air quality and greenhouse gas emissions, the resource study area is the SCAB.

The project area is surrounded by single-family homes, with the exception of two industrial properties adjacent to the southwest and northeast of the bridge. Past projects have resulted in substantial impacts on all the resources listed above.

The project area and surroundings are densely developed, resulting in minimal potential for substantial future development. According to a review of the CEQANet database, other development projects in the city that have been under CEQA environmental review within the past year (September 2016 through September 2017) include the drilling of a new water well, establishing a transit-oriented development near a new regional transit station in the City's packinghouse district, installation of telecommunications infrastructure, rehabilitation of water distribution pipelines, construction of a soccer field in an existing park, and resurfacing of existing roadways (Governor's Office of Planning and Research, 2017).

The project also includes the construction of a bicycle ramp connecting Golden Avenue to the proposed OC Loop Bikeway. The OC Loop Bikeway Project is being implemented as part of the OCTAs 2009 CBSP (Orange County Transportation Authority, 2009). The CBSP is intended to provide a comprehensive blueprint for the existing bikeways in the county, and to propose new facilities to complete a network of bikeways through the county. A portion of the proposed "Segment D" trail runs along the Carbon Canyon Creek Channel and overlaps with the project area.

Impacts on aesthetics, air quality, biological resources, greenhouse gas emissions, hydrology and water quality, transportation/traffic, and hazards and hazardous materials would be less than significant, and would not be considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The project could result in potentially significant impacts on cultural resources, noise and groundborne vibration, and tribal cultural resources. However, with implementation of identified mitigation measures, these impacts would be reduced to a level that is less than cumulatively considerable.

c) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation Incorporated. The project would result in less than significant impacts on resources that would directly or indirectly impact human beings, including air quality, greenhouse gas emissions, hazards and hazardous materials, and hydrology and water quality, as discussed above. However, the project could result in potentially significant impacts on noise and groundborne vibration. With implementation of mitigation measures, N-1 through N-4, the project would result in a less than significant impact. Therefore, the project would result in less than significant impact with mitigation on human beings.

4.0 REFERENCES

AMBIENT. (2017a). *Technical Memorandum, Air Quality & Greenhouse Gas Impact Assessment for the Golden Avenue Bridge Replacement/ Rehabilitation Project, City of Placentia, California.*

AMBIENT. (2017b). *Noise Impact Assessment for the Golden Avenue Bridge Replacement/Rehabilitation Project, City of Placentia, California.*

California Department of Conservation. (2004). *Agricultural Preserves 2004, Williamson Act Parcels, Orange County, California.* Retrieved from ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Orange_WA_03_04.pdf

California Department of Conservation. (2016). *Merced County Important Farmland 2014*. Retrieved from ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/mer14_no.pdf

California Department of Toxic Substances Control. (2007). *DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List)*. Retrieved September 11, 2017, from CA.Gov: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

California Geological Survey. (1981). *Generalized Aggregate Resource Classification Map.* Retrieved from ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_143/PartIII/Plate_3-1.pdf

California Geological Survey. (2003). *Earthquake Shaking Potential for California.* Retrieved from http://www.seismic.ca.gov/pub/shaking_18x23.pdf

California Geological Survey. (2015, December 4). *Earthquake Zones of Required Investigation, Yorba Linda Quadrangle.* Retrieved from http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/YORBA_LINDA_EZRIM.pdf

Caltrans. (2012). *Caltrans Standard Environmental Reference, Chapter 8 - Paleontology*. Retrieved October 24, 2017, from California Department of Transportation: http://www.dot.ca.gov/ser/vol1/sec3/physical/Ch08Paleo/chap08paleo.htm

Caltrans. (2017, June). *Historical Significance - Local Agency Bridges*. Retrieved September 7, 2017, from Structure Maintenance & Investigations: http://www.dot.ca.gov/hq/structur/strmaint/hs_local.pdf

City of Placentia. (2003, November). *Placentia General Plan.* Retrieved from http://www.placentia.org/index.aspx?NID=613

County of Orange Waste and Recycling. (n.d.). *Olinda Alpha Landfill*. Retrieved from http://www.oclandfills.com/landfill/active/olindalandfill

Duke CRM. (2017a). *Archaeological Survey Report, Golden Avenue Bridge Replacement and Rehabilitation Project.* Lake Forest: Duke CRM.

Duke CRM. (2017b). *Paleontological Letter Report for the Golden Avenue Bridge Replacement and Rehabilitation Project, BRL-5269(025).*

Duke CRM. (2017c). *Paleontological Identification and Evaluation Report.* Lake Forest: Duke CRM.

Federal Emergency Management Agency. (2009, December 3). *Federal Insurance Rate Map, 06059C0063J.* Retrieved from National Flood Insurance Program: http://map1.msc.fema.gov/idms/IntraView.cgi?ROT=0&O_X=7200&O_Y=6507&O_ZM=0.077294&O_SX=1113&O_SY=593&O_DPI=400&O_TH=86194293&O_EN=86214129&O_PG=1&O_MP=1&CT=0&DI=0&WD=14400&HT=10350&JX=1358&JY=654&MPT=0&MPS=0&ACT=1&KEY=86194039&ITEM=1&PICK_VIEW_CENTER.x=10

Governor's Office of Planning and Research. (2017). *CEQANet Database*. Retrieved September 11, 2017, from Welcome to California: http://www.ceqanet.ca.gov/ProjectList.asp

GPA Consulting. (2017a). *Golden Avenue Bridge Replacement Project, Visual Impact Memorandum.* El Segundo: GPA Consulting.

GPA Consulting. (2017b). *Golden Avenue Bridge Replacement Project Natural Environment Study (Minimal Impacts).*

Orange County Transportation Authority. (2009). *2009 Commuter Bikeways Strategic Plan.*

South Coast Air Quality Management District. (2016). *Final 2016 Air Quality Management Plan*. Retrieved August 23, 2017, from South Coast AQMD: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp

United States Department of Agriculture. (2017). *Web Soil Survey*. Retrieved September 6, 2017, from National Resources Conservation Service : https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

United States Geological Survey. (1989). *Swelling clays map of the conterminous United State*. Retrieved August 29, 2017, from https://ngmdb.usgs.gov/Prodesc/proddesc_10014.htm

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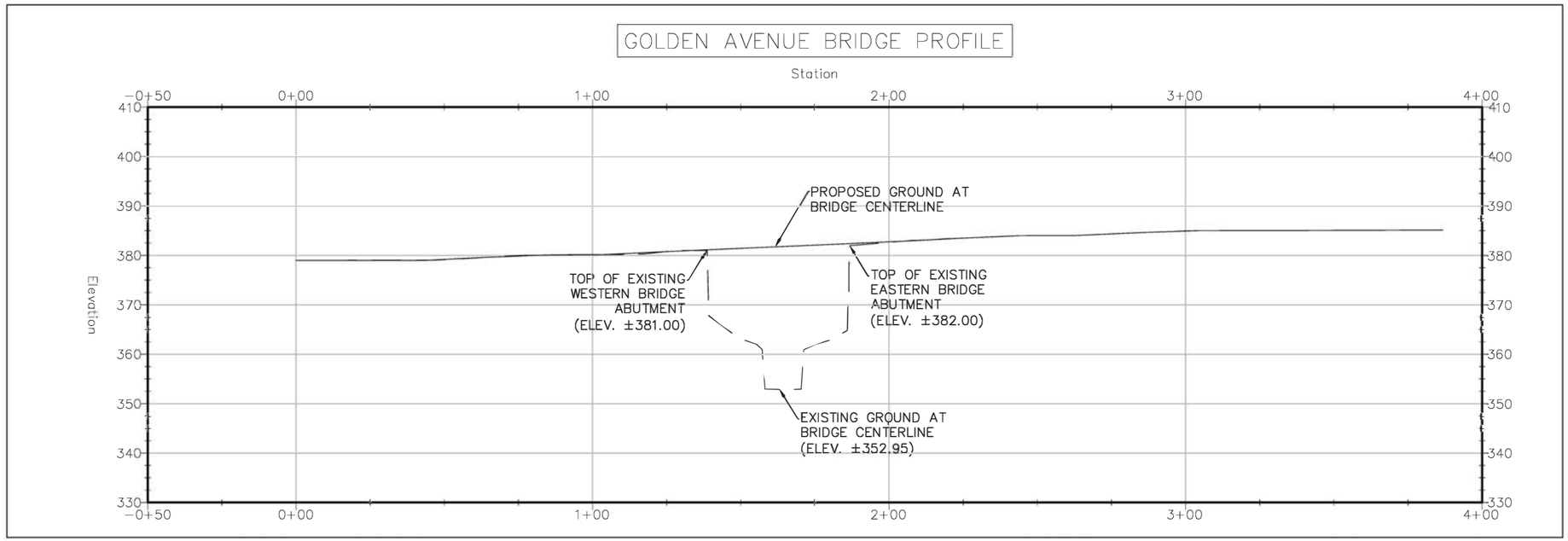
Appendix A: Engineering Drawings



CONSTRUCTION NOTES

1. REMOVE EXISTING BRIDGE
2. REMOVE EXISTING FENCE AND/OR GATE
3. REMOVE EXISTING TREES
4. REMOVE EXISTING GUARDRAIL
5. REMOVE EXISTING SIGN
6. REMOVE EXISTING CURB, GUTTER AND SIDEWALK
7. REMOVE EXISTING DRAINAGE STRUCTURE AND CMP
8. CURB INLET TYPE I PER ORANGE COUNTY PUBLIC WORKS STD DRWG 1301
9. FUTURE OC LOOP SEGMENT D (NOT A PART)
10. CONSTRUCT 6ft SIDEWALK SIMILAR TO ORANGE COUNTY PUBLIC WORKS STD DWG 1205
11. CONSTRUCT CURB DRIVEWAY APPROACH PER ORANGE COUNTY PUBLIC WORKS STD DWG 1210
12. CONSTRUCT GATE AND FENCING PER OCPW STD DWG 600-3-OC
13. CONSTRUCT ADA CURB RAMP PER ORANGE COUNTY PUBLIC WORKS STD DWG 1115
14. POWER POLE TO REMAIN
15. CONSTRUCT BRIDGE, SEE STRUCTURAL SHEETS
16. REMOVE AND REINSTALL EXISTING SIGN
17. CONSTRUCT A.C. PAVEMENT OVER AGGREGATE BASE

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Engineering Resources of Southern California

PREPARED BY			BY	DATE
		DRAWN:		
		DESIGNED:		
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE: _____

CITY OF PLACENTIA

GOLDEN AVENUE BRIDGE REPLACEMENT PLAN AND PROFILE

PROJECT NO.

SHEET OF

DRAWING NO. C1

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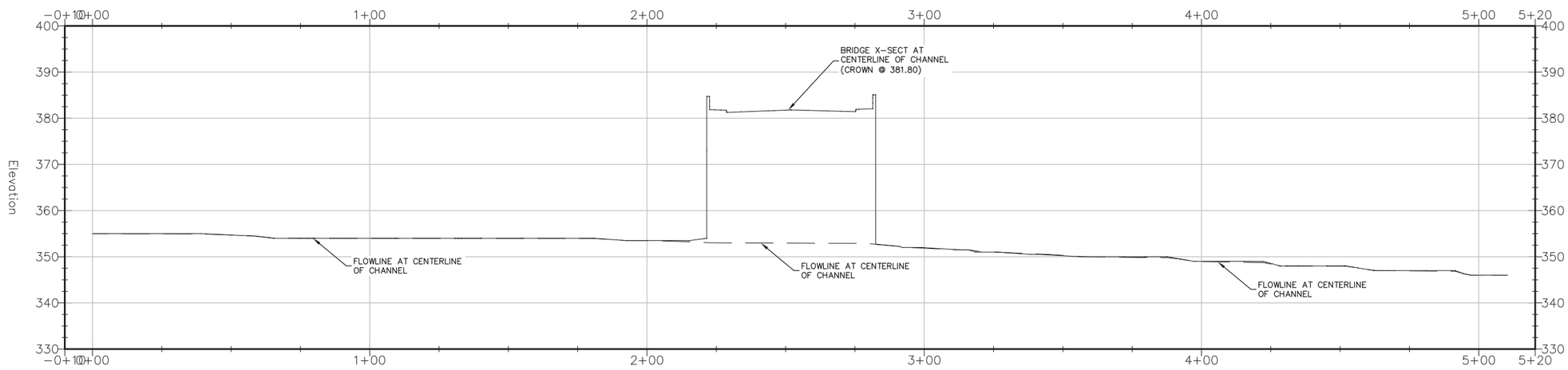
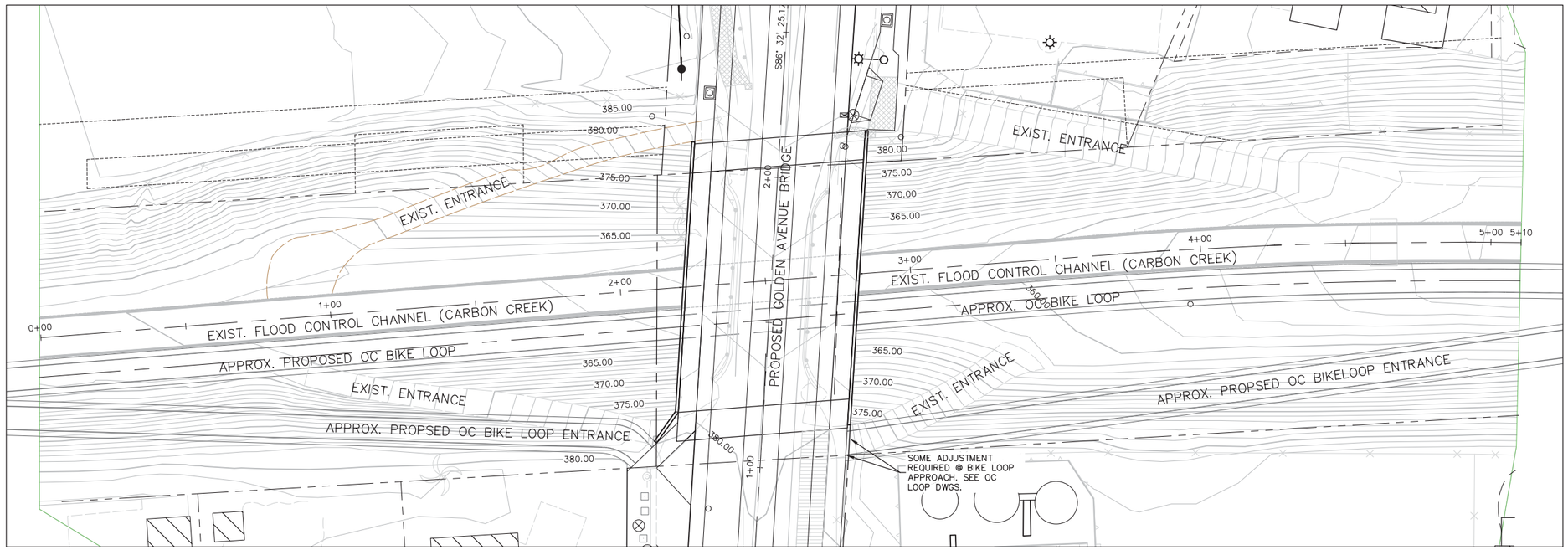
CARBON CREEK FLOOD CONTROL CHANNEL PROFILE





CONSTRUCTION NOTES

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SCALE: 1:20

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		DESIGNED:		
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE: _____

CITY OF PLACENTIA

GOLDEN AVENUE BRIDGE REPLACEMENT GRADING PLAN

PROJECT NO.

SHEET OF

DRAWING NO. C2

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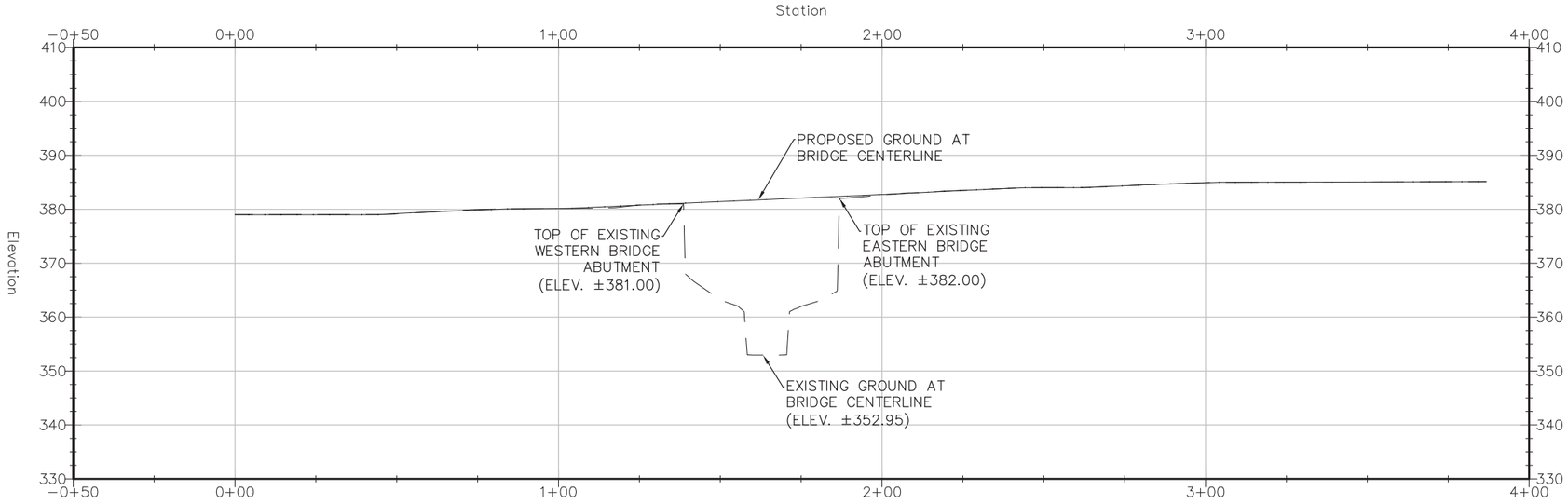
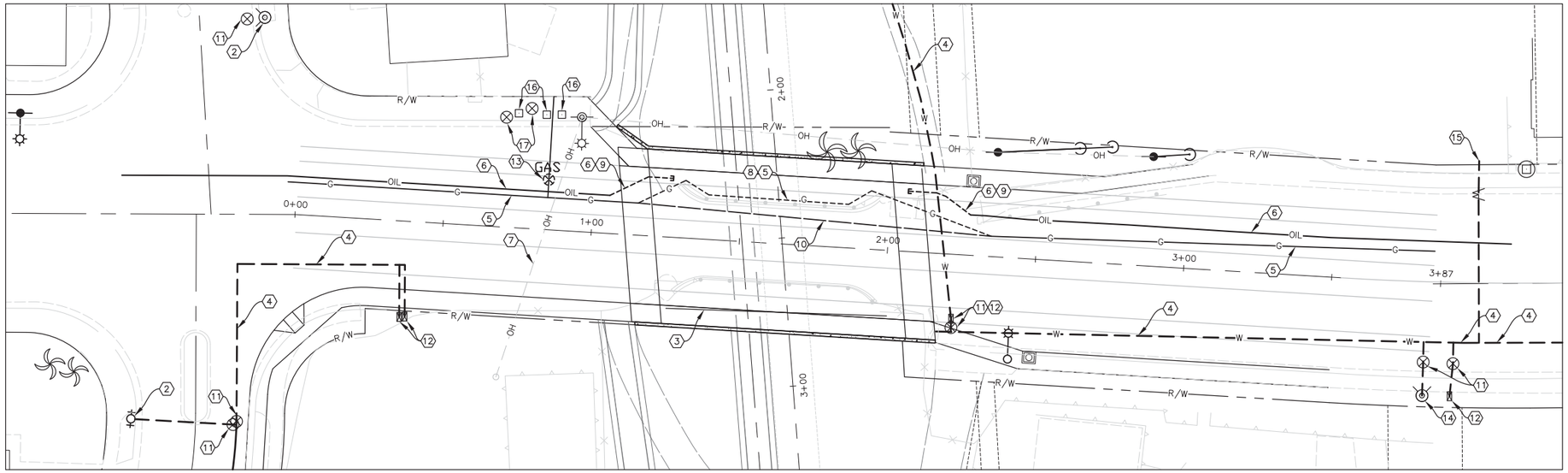
GOLDEN AVENUE BRIDGE PROFILE





CONSTRUCTION NOTES

1. NOT USED
2. EXISTING FIRE HYDRANT, PROTECT IN PLACE
3. EXISTING ABANDONED WATER LINE @ EDGE OF BRIDGE TO BE REMOVED
4. EXISTING 8" WATERLINE APPROXIMATE LOCATION, PROTECT IN PLACE
5. EXISTING 4" GAS LINE APPROXIMATE LOCATION
6. EXISTING "IDLE" 4" OIL LINE APPROXIMATE LOCATION
7. EXISTING OVERHEAD LINE APPROXIMATE LOCATION
8. EXISTING 4" GAS LINE TO BE REMOVED
9. EXISTING "IDLE" 4" OIL LINE TO BE REMOVED
10. PROPOSED 4" POLYETHYLENE GAS LINE
11. EXISTING WATER VALVE, PROTECT IN PLACE
12. EXISTING WATER METER, PROTECT IN PLACE
13. EXISTING GAS VALVE, PROTECT IN PLACE
14. EXISTING FIRE HYDRANT, PROTECT IN PLACE
15. EXISTING BACK FLOW DEVICE, PROTECT IN PLACE
16. EXISTING COMMUNICATION CABINET, PROTECT IN PLACE
17. EXISTING HANDHOLE "GROUND", PROTECT IN PLACE

N

0 25 50 Feet

SCALE: 1:20

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REVISIONS	MADE BY	MADE DATE	APPROVED BY	APPROVED DATE

3550 E. Florida Avenue, Suite B
Hemet, California 92544
(951) 765-6622
ERSG INK.COM
Engineering Resources of Southern California

PREPARED BY			BY	DATE
		DRAWN:		
		DESIGNED:		
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE: _____

CITY OF PLACENTIA

GOLDEN AVENUE BRIDGE REPLACEMENT
UTILITY CONTROL PLAN

PROJECT NO.

SHEET OF

DRAWING NO. C3

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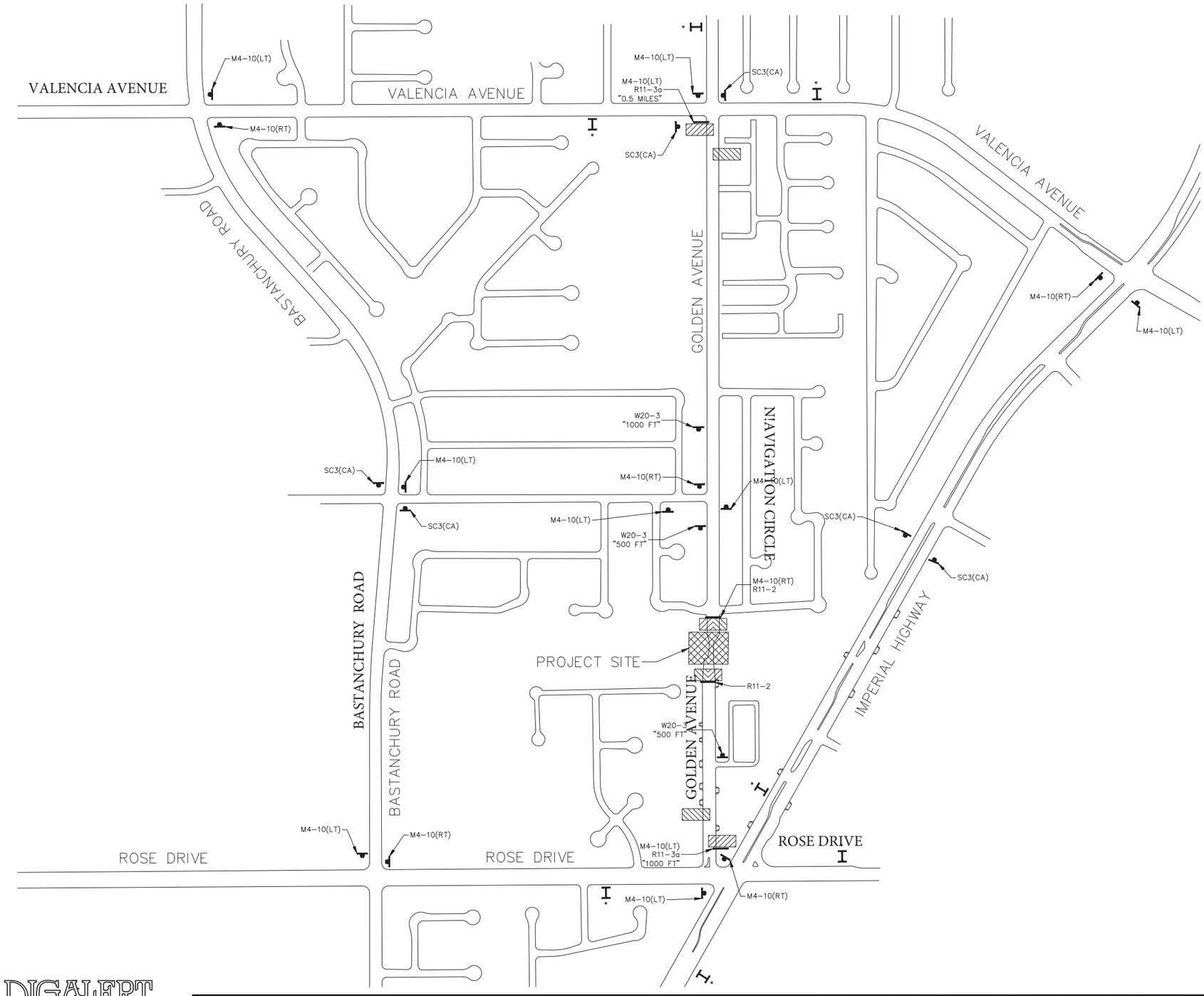


LEGEND

- INSTALL TEMPORARY SIGN, CALLOUTS PER PLAN
- INSTALL CHANGEABLE MESSAGE SIGN *
- INSTALL TYPE III BARRICADE WITH SIGN, CALLOUTS PER PLAN
- INSTALL TYPE III DIRECTIONAL BARRICADE

* – ALL CHANGEABLE MESSAGE SIGNS SHALL READ"

"GOLDEN AVENUE BRIDGE CLOSED
AT CARBON CANYON CHANNEL
USE DETOUR"

NOTES:

1. ALL BARRICADES SHALL INCLUDE FLASHING AMBER WARNING LIGHTS.
2. ALL SIGN CODES PER CURRENT CALIFORNIA MANUAL ON TRAFFIC CONTROL DEVICES (CAMUTCD). MODIFIED SIGNS ARE SHOWN ON THE PLANS.

N

0 250 500 Feet

SCALE: 1:250

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REVISIONS	MADE BY	MADE DATE	APPROVED BY	APPROVED DATE

3550 E. Florida Avenue, Suite B
Hemet, California 92544
(951) 765-6622
ERSC
Engineering Resources of Southern California

PREPARED BY			BY	DATE
		DRAWN:		
		DESIGNED:		
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE: _____

CITY OF PLACENTIA

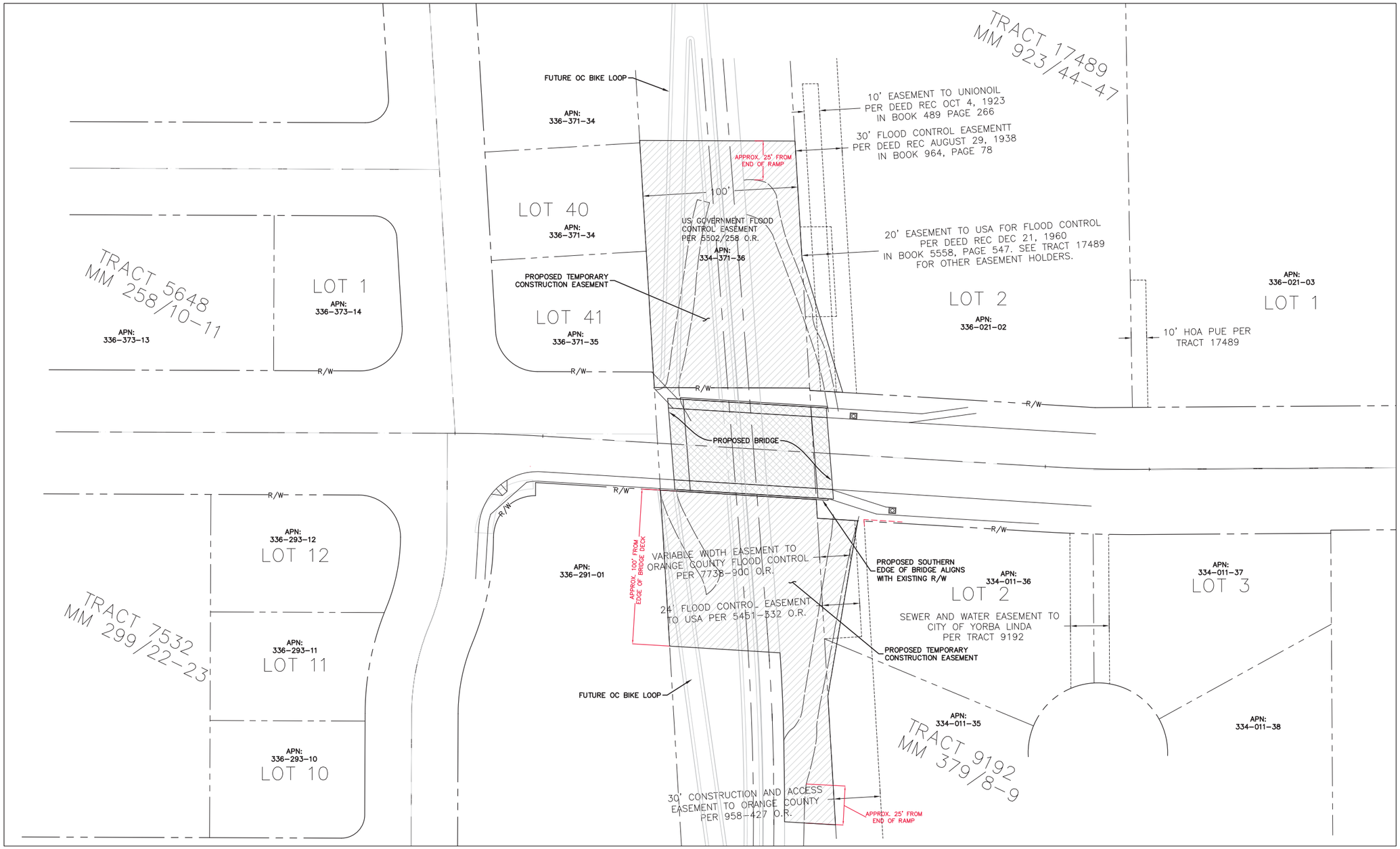
GOLDEN AVENUE BRIDGE REPLACEMENT
TRAFFIC CONTROL PLAN

PROJECT NO.

SHEET 4 OF 4

DRAWING NO.

T:\Projects\16012001 Golden Avenue Bridge Replacement\CAD_35ft Submittal\TCP-1-NoImages.dwg 05/19/2017 19:14



SCALE 1:30

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REVISIONS	MADE BY	MADE DATE	APPROVED BY	APPROVED DATE

3550 E. Florida Avenue, Suite B
Hemet, California 92544
(951) 765-6622
ERSG
Engineering Resources of Southern California

PREPARED BY			BY	DATE
		DRAWN:		
		DESIGNED:		
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE: _____

CITY OF PLACENTIA

GOLDEN AVENUE BRIDGE REPLACEMENT

TEMPORARY CONSTRUCTION EASEMENTS

PROJECT NO.

SHEET OF

DRAWING NO.

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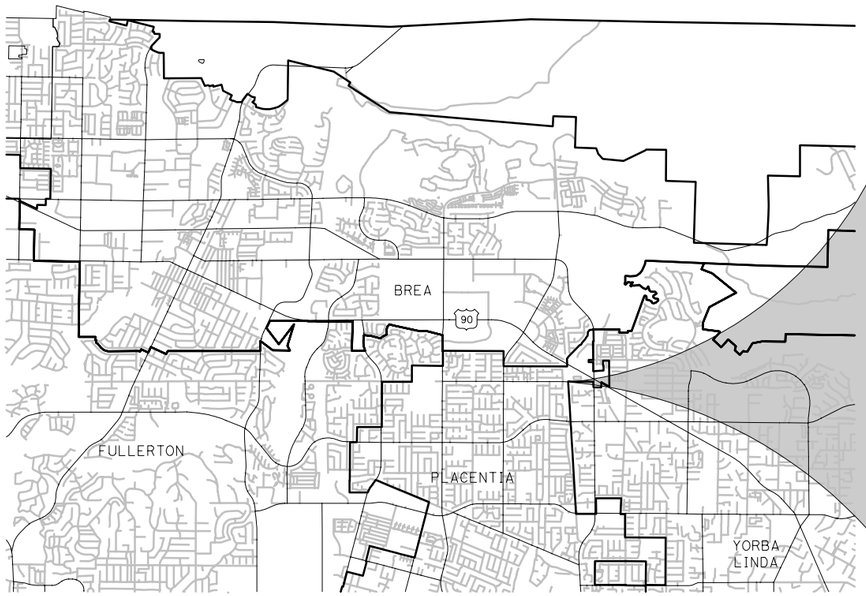
CITY OF PLACENTIA

PLANS FOR THE CONSTRUCTION OF

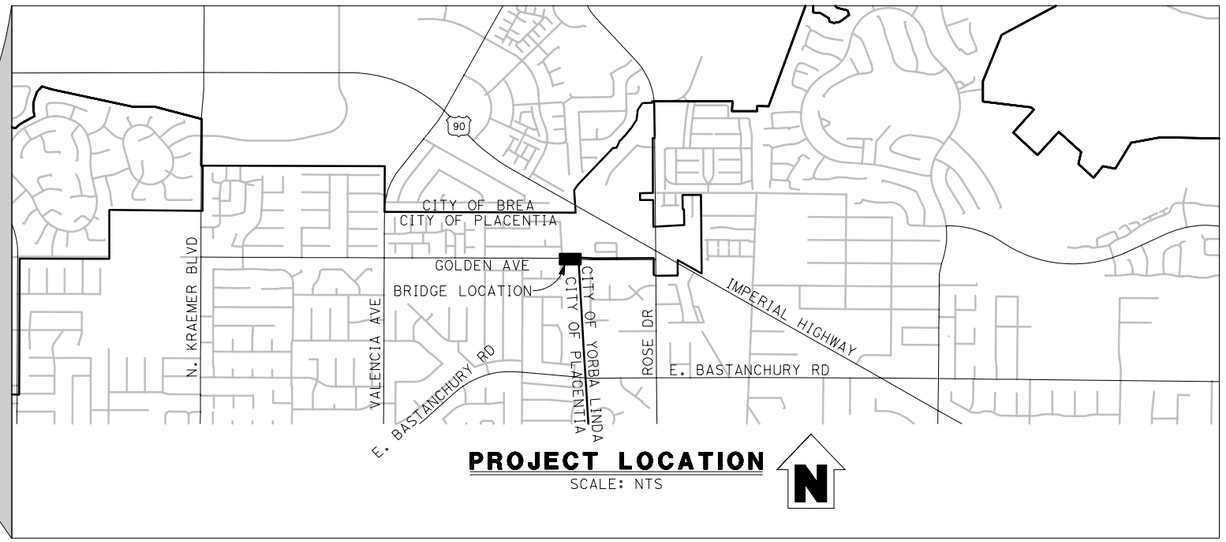
GOLDEN AVENUE BRIDGE OVER CARBON CANYON REPLACEMENT



VICINITY MAP

SCALE: NTS

N



PROJECT LOCATION

SCALE: NTS

N

PLAN CHECK SET/NOT FOR CONSTRUCTION (5/17/17)

DIGALERT

DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG

TOLL FREE 1-800-227-2600

A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REVISIONS	MADE BY	MADE DATE	APPROVED BY	APPROVED DATE

BIGGS CARDOSA ASSOCIATES INC
STRUCTURAL ENGINEERS
500 S. Main Street, Suite 400
Orange, California 92868
714-550-4665
BCA

PREPARED BY		CITY ENGINEER'S STAFF	BY	DATE
		DRAWN:	DM	4/11/17
		DESIGNED:	MAL	4/11/17
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE: _____

CITY OF PLACENTIA

GOLDEN AVENUE BRIDGE REPLACEMENT

TITLE SHEET

PROJECT NO. 2017041

SHEET 1 OF

DRAWING NO. T-1

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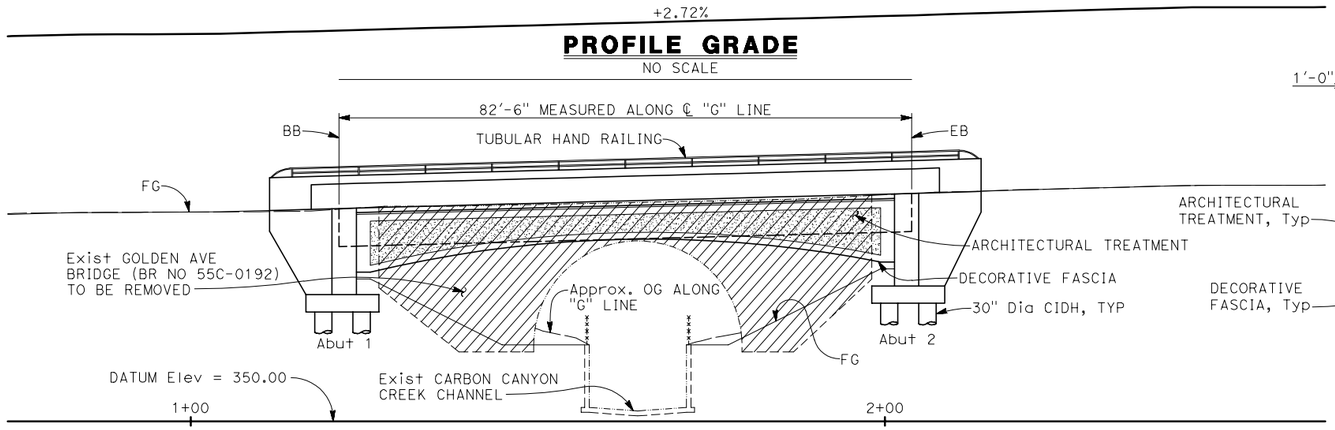
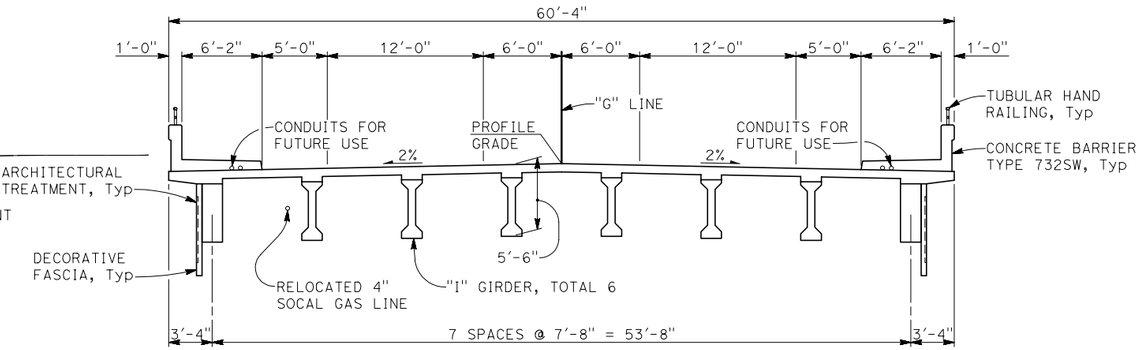
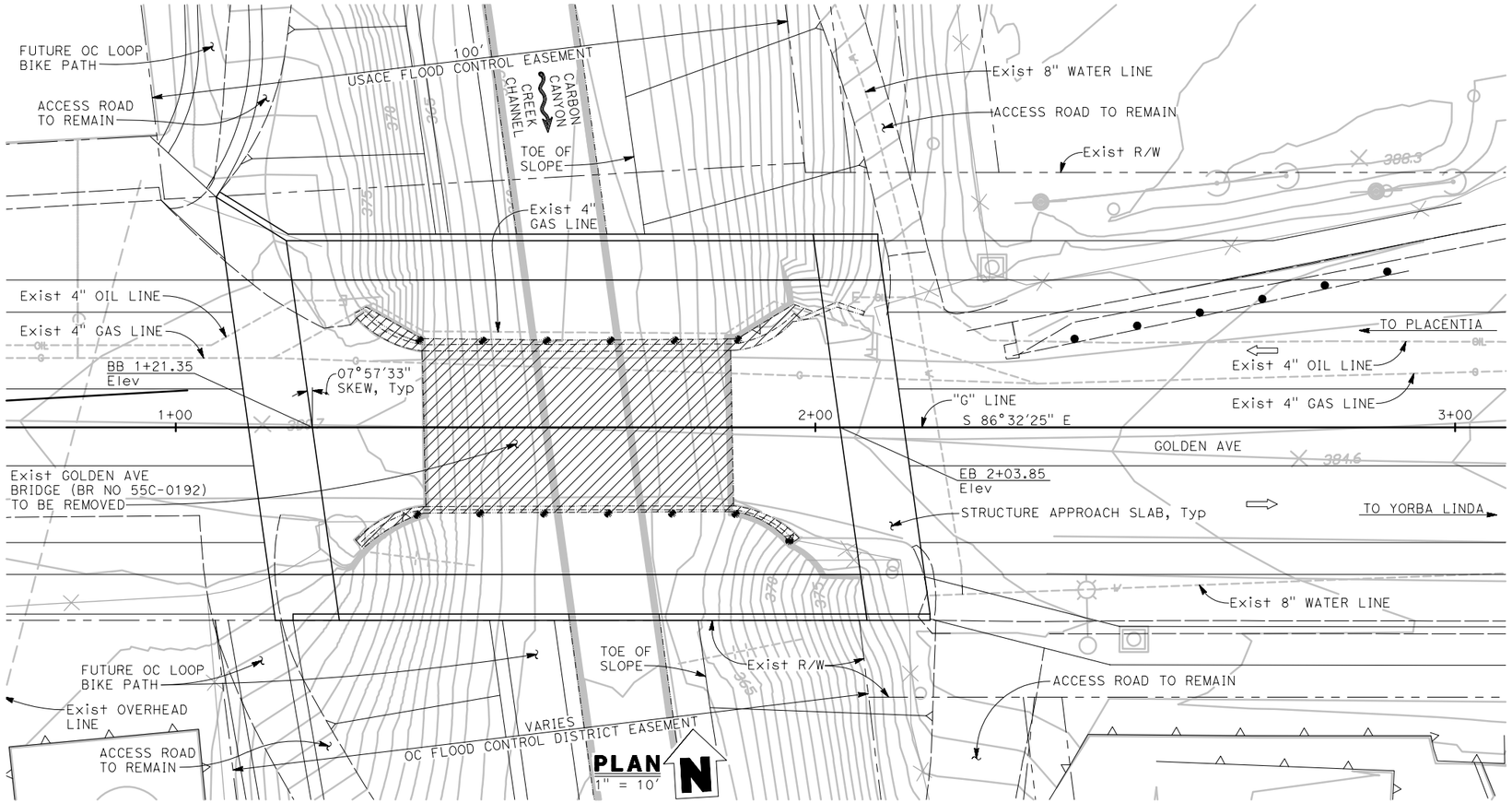




TYPICAL SECTION
3/16" = 1'-0"

ELEVATION
1" = 10'



LEGEND:
- Indicates Bridge Removal
- Indicates Direction of Travel
- Indicates Existing Structure

PLAN CHECK SET/NOT FOR CONSTRUCTION (5/17/17)

DIG ALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REVISIONS	MADE BY	MADE DATE	APPROVED BY	APPROVED DATE

BIGGS CARDOSA ASSOCIATES INC
STRUCTURAL ENGINEERS
500 S. Main Street, Suite 400
Orange, California 92868
714-550-4665
BCA

PREPARED BY		CITY ENGINEER'S STAFF	BY	DATE
		DRAWN:	DM	4/11/17
		DESIGNED:	MAL	4/11/17
		CHECKED:		
		RECOMMENDED:		

APPROVED BY:

DIRECTOR OF PUBLIC WORKS
DATE: _____

CITY OF PLACENTIA
GOLDEN AVENUE BRIDGE REPLACEMENT
GENERAL PLAN

PROJECT NO. 2017041
SHEET 2 OF
DRAWING NO. S-1

Appendix B: Mitigation Monitoring Program

MITIGATION MONITORING PROGRAM

Avoidance and Minimization Measures

The following Avoidance and Minimization Measures are recommended for the project.

Measure	Phase	Responsible Party	Future	On-going	Completion Date	Comments
BIO-1: Work areas would be reduced to the maximum extent feasible, and staging areas would be along the roadway and outside of the creek.	Preconstruction	Contracted Biologist	X			
BIO-2: Hazardous material BMPs, including using protective materials such as matting or basins to catch spills and leaks from fuel containers, storing waste in sealed containers, prohibiting potentially hazardous waste material from accumulating on the ground, and keeping a spill kit on site, would be implemented to reduce the potential for chemical spills or contaminant releases into the creek, including any non-stormwater discharge.	Construction	Construction Contractor	X			
BIO-3: All equipment refueling and maintenance would be conducted in the staging area away from the creek per Caltrans standard specifications. In addition, vehicles and equipment would be checked daily for fluid and fuel leaks, and drip pans would be placed under all equipment that is parked and not in operation.	Construction	Construction Contractor	X			
BIO-4: Following project construction, all temporarily disturbed areas would be restored to pre-project conditions or better, and any re-vegetation or erosion control implemented would be completed using non-invasive species approved by the City.	Post Construction	Construction Contractor	X			
BIO-5: Invasive plant species in the project area would be removed outside of the bird nesting season (typically February 1 to September 15) and disposed of in a manner that minimizes the potential for their reestablishment. Invasive plants would be identified by a biologist prior to their removal and removal procedures would follow the recommendations of the California Invasive Plant Council.	Construction	Contracted Biologist	X			

Measure	Phase	Responsible Party	Future	On-going	Completion Date	Comments
If herbicides are applied, they would be applied in compliance with applicable state and federal laws.						
BIO-6: Environmentally Sensitive Area fencing would be installed around the protected root zone of the southern California walnut trees under the supervision of a qualified biological monitor, to prevent damage to roots or trunks of the trees. The protected root zone would be determined by measuring the tree diameter in inches at 4.5 feet up the tree trunk and multiplying that number by 1.5 to get the distance in feet from the trunk where the protected root zone should be established. No work would be allowed within the protected root zone of these trees.	Preconstruction	Contracted Biologist	X			
BIO-7: A qualified biologist would complete pre-construction surveys no more than 48 hours prior to construction to determine the presence or absence of wildlife, including the coastal whiptail, in the project area. Surveys would be repeated if construction activities are suspended for five days or more. If any wildlife species are identified, appropriate measures would be developed and implemented to avoid impacts on these wildlife species, in consultation with appropriate resource agencies as applicable.	Preconstruction	Contracted Biologist	X			
BIO-8: Any tree removal would be conducted during the month of October to avoid bat maternity and hibernation season, where feasible. Removal would be conducted as close to sunset as possible.	Construction	Contracted Biologist	X			
BIO-9: At least 30 days prior to tree removal, all trees to be removed would be surveyed by a qualified biologist to assess the presence of bats or potential bat-roosting cavities. If bats or bat-roosting cavities are identified, exclusion measures would be discussed with a qualified bat biologist and Caltrans biologist. During the non-breeding and active season (typically October), bats would be safely evicted and excluded from trees to be removed, to the extent feasible, under the direction of a	Preconstruction	Contracted Biologist	X			

Measure	Phase	Responsible Party	Future	On-going	Completion Date	Comments
qualified biologist, to prevent bats from roosting in these cavities prior to tree removal.						
BIO-10: A qualified biological monitor would be onsite during tree removal in the event that all bats were not able to be excluded from the trees to be removed. If bats are disturbed during tree removal, work would be safely stopped until the bats have left the vicinity on their own. Work would resume only once all bats have left the site and/or approval to resume work is given by a qualified biologist.	Construction	Contracted Biologist	X			
BIO-11: Surveys and exclusion measures are expected to prevent maternal colonies from becoming established in the BSA. In the event that a maternal colony of bats is found, the CDFW would be consulted, and no work would be conducted within 100 feet of the maternal roosting site until the maternal season is over or the bats have left the site, or as otherwise directed by the CDFW. The site would be designated as a sensitive area and protected as such until the bats have left the site. No clearing and grubbing would be authorized adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, would not to be parked nor operated under or adjacent to the roosting site. Construction personnel would not be authorized to enter areas beneath the colony, especially during the evening exodus.	Preconstruction/ Construction	Contracted Biologist	X			
BIO-12: Vegetation removed from the BSA would be treated and disposed of in a manner that would prevent the spread of invasive species onsite or offsite.	Construction	Construction Contractor	X			
BIO-13: New landscaping materials, including erosion control seed mixes and other plantings, would be composed of non-invasive species and would be clear of weeds, and all erosion control and landscape planting would be conducted in a manner that would not result in the spread of invasive species.	Construction	Construction Contractor	X			

Measure	Phase	Responsible Party	Future	On-going	Completion Date	Comments
BIO-14: Plants listed in the Pest Ratings of Noxious Weed Species and Noxious Weed Seed (State of California Department of Food and Agriculture, 2010) would not be used as part of the project.	Construction	Construction Contractor	X			
BIO-15: Construction in areas with trees or vegetation that may provide nesting habitat for birds and raptors will be reduced to the maximum extent feasible.	Construction	Construction Contractor	X			
BIO-16: Trimming and removal of vegetation and trees would be minimized and performed outside of the nesting season (typically February 1 to September 15) to the extent feasible.	Construction	Construction Contractor	X			
BIO-17: In the event that trimming or removal of vegetation and trees must be conducted during the nesting season, nesting bird surveys would be completed by a qualified biologist no more than 48 hours prior to trimming or clearing activities to determine if nesting birds are within the affected vegetation. Nesting bird surveys would be repeated if trimming or removal activities are suspended for five days or more. In the event construction is scheduled during bird nesting season, nesting bird surveys would be completed no more than 48 hours prior to construction to determine if nesting birds, raptors, or active nests are in or within 500 feet of the construction area. Surveys would be repeated if construction activities are suspended for five days or more.	Construction	Construction Contractor	X			
BIO-18: In the event nesting birds or raptors are found within 500 feet of the construction area, appropriate buffers (typically up to 300 feet for songbirds and up to 500 feet for raptors) would be implemented, in coordination with the CDFW, to ensure that nesting birds and active nests are not harmed. Buffers would include fencing or other barriers around the nests to prevent any access to these areas and would remain in place until birds have fledged and/or the nest is no longer active, as determined through coordination with the CDFW.	Construction	Construction Contractor/ Contracted Biologist	X			

Measure	Phase	Responsible Party	Future	On-going	Completion Date	Comments
HAZ-1: A Phase II/Site Characterization Specialist will conduct sampling within the project area to determine whether or not contamination exists, including TRPH (gasoline), TRPH (diesel), TRPH (petroleum), VOCs, ADL, and pesticides. Results of the sampling would indicate the level of remediation efforts that may be required, if necessary.	Preconstruction	Contracted Hazardous Expert	X			
HAZ-2: A Soil Management Plan (SMP) will be prepared to provide procedures to guide soil management during excavation, confirmation sampling, and backfilling operations in the project area. A Photo Ionized Detector (PID) will be used to determine any health safety issues relating to VOCs.	Preconstruction	Contracted Hazardous Expert	X			
HAZ-3: A comprehensive survey and sampling will be completed to confirm the presence or absence of ACMs prior to bridge removal or renovation. Any future testing, removal, or disturbance of ACMs will be handled in compliance with federal, state and local regulations. Licensed, qualified asbestos abatement personnel should be retained prior to any demolition or renovation of subject facilities.	Preconstruction	Contracted Hazardous Expert	X			
HAZ-4: A work plan will be developed for LBP survey and sampling prior to bridge removal or renovation. Construction activities (including demolition) that disturb materials or paints containing any amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR, Section 1532.1. Deteriorated paint is defined by Title 17, CCR, Division 1, Chapter 8, Section 35022 as a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separated from a component. Demolition of a deteriorated LBP component will require waste characterization and appropriate disposal. If dust containing hazardous concentrations of lead are generated during scraping or cutting materials coated with LBP, torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory	Preconstruction/ Construction	Contracted Hazardous Expert	X			

Measure	Phase	Responsible Party	Future	On-going	Completion Date	Comments
protection will be implemented during the demolition of materials coated with LBP.						

Mitigation Measures

The following Mitigation Measures shall be implemented during the project.

Measure	Phase	Responsible Party
CUL-1: Work shall be halted in the vicinity of any previously known or unknown buried cultural materials unearthed during construction until a qualified archaeologist can assess the significance of the materials. Any further measures required by the archaeologist will be implemented, including, if necessary, supplemental environmental documentation.	Construction	Construction Contractor
CUL-2: A PMP will be prepared by a qualified Principal Paleontologist. The PMP will detail all the measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements: 1) Required preconstruction paleontological awareness training for ground disturbance personnel, including documentation of training, such as sign-in sheets, to establish communications protocols between construction personnel and the Principal Paleontologist. This training can be given in person or via video. 2) Monitoring, by a qualified Paleontological Monitor shall occur for any ground disturbance east of Carbon Creek, or, as indicated by the presence of a nearby Equus fossil locality, any disturbance deeper than 8 feet below the ground surface (b.g.s.). 3) A signed repository agreement. 4) Field and laboratory methods that meet the curation requirements of the identified repository that will be implemented for monitoring, reporting, collection, and curation of collected specimens. A Paleontological Mitigation Report (PMR) discussing findings and analysis will be prepared by a Principal Paleontologist upon completion of Project earthmoving. The report will be included in the environmental Project file and also submitted to the curation facility.	Preconstruction	Contracted Paleontologist
CUL-3: If human remains and associated artifacts are encountered during ground-disturbing activities, then the provisions of Section 7050 of the California Health and Safety Code, and Section 5097.98 and .99 of the California Public Resources Code, will be followed.	Construction	Construction Contractor
CUL-4: A licensed archaeologist will be present during excavation and grading.	Construction	Contracted Archaeologist
N-1 Construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, shall be limited to between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays.	Construction	Construction Contractor
N-2 Internal combustion engines shall be equipped with engine shrouds and exhaust mufflers in accordance with manufacturer recommendations.	Construction	Construction Contractor
N-3 Portable/stationary equipment (e.g., generators, compressors) shall be located at the furthest distance from the nearest residential dwelling.	Construction	Construction Contractor
N-4 To the extent locally available, quieter equipment alternatives, such as electrified equipment, shall be utilized.	Construction	Construction Contractor

Measure	Phase	Responsible Party
TR-1 A Native American monitor will be present for all earthmoving and/or construction operations.	Construction	Native American Monitor