Market Street Bridge Replacement Project

Draft Initial Study with Proposed Mitigated Negative Declaration

Prepared for:

The City of Jurupa Valley (CEQA Lead Agency) in cooperation with the City of Riverside and Riverside County Transportation Department.

Prepared by:

Dokken Engineering
110 Blue Ravine Road Suite #200
Folsom, CA 95630

March 2019

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General Information about this Document

What's in this document:

This Initial Study has been prepared for the City of Jurupa Valley and examines the potential environmental impacts of the proposed project located in City of Jurupa Valley and City of Riverside, California. The document describes the project being proposed, the existing environment that could be affected by the project, the potential impacts from the project, and the proposed avoidance, minimization and/or mitigation measures. The County of Riverside will oversee the ciruclation of this document.

What you should do:

Please read this Initial Study. Additional copies of this document as well as the technical studies are available for review at the City of Jurupa Valley, City of Riverside and Riverside County Transportation Department. An electronic copy of the Initial Study may be viewed online at the following website: https://rcprojects.org/marketbridge. A 30-day public circulation period will begin March 11, 2019 and ends April 11, 2019.

If you have any comments regarding the proposed project, or if you have concerns you would like addressed, please send your written comments and/or request no later than April 11, 2019.

Submit comments via postal mail or email to the following address and/or email no later than April 11, 2019:

Riverside County Transportation Department
Attn: Frances Segovia, Senior Transportation Planner
3525 14th Street,
Riverside, CA 92501
fsegovia@rivco.org

A Public Meeting is scheduled for this project on March 27, 2019 and will provide an opportunity for you to ask questions and provide comments regarding the project. The meeting will be held at the Avalon Park Community Center located at 2502 Avalon Street, Jurupa Valley, CA 92509. In compliance with the Americans with Disabilities Act (ADA), persons with disabilities may request reasonable accommodations, including auxiliary aids and services at no cost to participate in the meeting by contacting Frances Segovia at (951) 955-1646 or fsegovia@rivco.org at least 3 business days before the scheduled event. This document is available in alternate formats upon request.

What happens next:

After comments are received from the public and reviewing agencies, the City of Jurupa Valley may: (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, (3) abandon the project, or (4) decide to modify the proposed project under consideration based on comments received. If the project is given environmental approval and funding is appropriated, the City could design and construct all or part of the project.

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Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Proponent:	City of Jurupa Valley 8930 Limonite Avenue Jurupa Valley, CA 92509
Project Title:	Market Street Bridge Replacement Project
Project Location:	The project is located along Market Street beginning at Rivera Street in the City of Riverside and extends northwest over the Santa Ana River to Hall Avenue in the City of Jurupa Valley for a total distance of approximately 1.0 miles.
Project Description:	The Project proposes to replace the existing bridge with a similar in length, 1,200-foot-long bridge. The existing two-lane structure is approximately 34-feet (ft.)-wide; the replacement structure will be approximately 88-ft-wide in order to accommodate American Association of State Highway and Transportation Officials (AASHTO) requirements. The new bridge will have one (1) twelve-foot-wide and one (1) fourteen-foot-wide traffic lane in each direction; two (2) eight-foot-wide shoulders striped as Class II bicycle lanes; and one (1) twelve-foot-wide multi-purpose path protected by a traffic barrier on the east side of the bridge. The Proposed Project also includes necessary approach roadway work, restriping, and utility relocation. Along Market Street, roadway improvements, including widening and striping to four lanes, will occur between Rivera Street to the south, and 24th Street/Via Cerro to the north. Between 24th Street/Via Cerro and Hall Road, Market Street will be tapered back to two lanes. Construction is anticipated to begin in 2022 and will take approximately 24 months to complete.
Findings:	Pursuant to the provisions of the California Environmental Quality Act (CEQA), the City of Jurupa Valley has determined that a Mitigated Negative Declaration is the appropriate environmental document for the proposed Project. This Initial Study examines the environmental impacts of the Project. The Project will not result in any potentially significant impacts with the inclusion of the proposed mitigation measures, which reduce potential adverse impacts to less than significant levels. Therefore, the City of Jurupa Valley has prepared a Proposed Mitigated Negative Declaration with mitigation measures in accordance with the provisions of CEQA.
Mitigation Measures	Refer to the Sections I through XXI of this Initial Study, and to Appendix A (Mitigation Monitoring and Reporting Program).

A copy of the Initial Study is available for review at the following locations:

- City of Jurupa Valley, 8930 Limonite Avenue, Jurupa Valley, CA 92509
- City of Riverside Community & Economic Development Department Planning Division, 3900 Main Street, 3rd Floor Riverside, California 92522
- Riverside County Transportation Department, 3525 14th Street, Riverside, 92501;
- Louis Robidoux Library, 5840 Mission Boulevard, Jurupa Valley, CA 92509

and at the City of Jurupa Valley and Riverside County Department of Transportation websites:

- https://rcprojects.org/marketbridge
- http://www.jurupavalley.org/Departments/Development-Services/Public-Works-and-Engineering/Capital-Improvement-Projects

3-21-19

Mike Myers , P.E. Date
Assistant City Engineer
City of Jurupa Valley

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Paleontological Evaluation Report
Visual Impact Assessment Memorandum

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Responsible Agencies

The City of Jurupa Valley is the California Environmental Quality Act (CEQA) lead agency. The California Department of Transportation (Caltrans) is the National Environmental Policy Act (NEPA) lead agency. The City of Riverside and County of Riverside are Responsible Agencies under CEQA, as they are the public agencies which propose to carry out and approve the project. Additionally, since the bridge is primarily located within the City of Jurupa Valley, Jurupa Valley is the implementing agency responsible for sponsoring and funding the project. The City of Riverside desires to cooperate, coordinate, and participate in funding the required local match for the portion of the Project in the City of Riverside's jurisdictional borders. The County of Riverside is responsible for the overall development and implementation of the Project since the County has extensive experience in the development and implementation of large bridge projects involving Federal and State agencies. The County will therefore provide the administrative, technical, managerial, and support services necessary for the development of the Project.

Project Description

The County of Riverside (County), in coordination with the Cities of Jurupa Valley and Riverside, proposes to replace the existing 2-lane Market Street Bridge (Br. No. 56C 0024) over Santa Ana River in Riverside County with a new 4-lane bridge and reconstruct the connecting approach roadways. The existing bridge is eligible for bridge replacement funding through the Highway Bridge Program (HBP) with a current sufficiency rating of SR = 45.1 and a condition status of "Structurally Deficient". The structure is also considered functionally obsolete due to the deficient width of bridge relative to the approach roadway width, including no width for shoulders. The current Annual Average Daily Traffic (AADT) of 18,333 is very high for the two-lane roadway.

The existing Market Street Bridge is 33'-8" wide and carries two-lanes of traffic over the Santa Ana River (1 lane in each direction) plus a sidewalk along the north side that is separated by a concrete barrier from the vehicular traffic. The bridge is a 12-span steel plate girder bridge with a total length of 1195 ft. It is supported on reinforced concrete pier walls founded on driven concrete piles. The existing structure was constructed in 1953 and retrofitted for seismic safety in 2001. The bridge is on the eligible bridge list for the Highway Bridge Program (HBP).

The existing bridge, with the exception of the easternmost end, is located in the City of Jurupa Valley.

Purpose and Need

The current Annual Average Daily Traffic (AADT) of 18,333 vehicles is considered high for a two lane roadway. The new bridge will be constructed to accommodate four traffic lanes with standard shoulders, thus providing increased capacity and congestion relief, particularly during peak hour traffic. The project is expected to have minimum impact on the surrounding environment and the community and will sufficiently upgrade the bridge to meet current standards.

Build Alternative

The Project proposes to replace the existing bridge with a similar in length, 1,200-foot-long bridge. The existing two-lane structure is approximately 34-feet (ft.)-wide; the replacement structure will be approximately 88-ft-wide in order to accommodate American Association of State Highway and Transportation Officials (AASHTO) requirements. The new bridge will have one (1) twelve-foot-wide and one (1) fourteen-foot-wide traffic lane in each direction; two (2) eight-foot-wide

shoulders striped as Class II bicycle lanes; and one (1) twelve-foot-wide multi-purpose path protected by a traffic barrier on the east side of the bridge. The Proposed Project also includes necessary approach roadway work, restriping, and utility relocation.

The Project will be constructed in two phases; the existing bridge will remain open during construction; a parallel structure will be constructed. Once complete, the parallel structure will be accessible to traffic and the existing bridge will be demolished; the new bridge will be built adjacent to the structure. The existing Market Street Bridge will continue to be used while the eastbound structure is constructed. Once the eastbound structure is operational, the existing bridge will be demolished. The second phase of construction will be the establishment of the westbound structure. Once both structures are completed, a closure pour would join the two structures together and create the proposed Market Street Bridge. The final structure will be nine-span, cast-in-place prestressed concrete box girder bridge.

Deep foundations will be used to support the bridge. These may include large-diameter cast-in-drilled-hole concrete piles, cast-in-steel-shell piles, or driven piles embedded 85 -ft. to 100 -ft. below the existing riverbed. The number of supports may vary depending on the bridge and foundation type selected, but could include 15 to 30 eight-foot diameter piles at the bents and approximately 40 three-foot diameter piles at the abutments. Foundation construction may require dewatering and/or drilling slurry. Ground improvements near the abutments may be required to address seismically induced liquefaction and lateral spreading. These improvements may include soil mixing, compaction grouting, and stone columns.

Along Market Street, roadway improvements, including widening and striping to four lanes, will occur between Rivera Street to the south, and 24th Street/Via Cerro to the north. Between 24th Street/Via Cerro and Hall Road, Market Street will be tapered back to two lanes.

Borings will be conducted during the PS&E phase of the Project. Boring locations will be at each bent and abutment of the bridge. The borings may be up to 8 inches in diameter and should take approximately one week to complete. The maximum depth of excavation will be approximately 10-ft deep for construction of the new bridge abutments. The cast-in-drilled-hole (CIDH) piles will extend to a depth of approximately 40 -ft.

The existing bridge is supported on short seat type abutments at each end outside of the channel and on eleven reinforced concrete pier walls within the SAR R4 open water channel. Five of the pier walls are supported on 9 -ft. by 35-ft reinforced concrete footings and each supported on 18 concrete piles. The other six piers are supported on 13 -ft. by 34-ft reinforced concrete footings, each supported on 40 untreated timber piles. The top of footings at each pier are on average about 5 -ft. below ground and likely within the anticipated scour depth. The existing bridge piers will be removed to below the depth of anticipated scour for foundations that are within the river channel and to a depth of 1 foot minimum below finished grade for foundations that are outside of the river channel (i.e. both bridge abutments). As such, it can be assumed that the entire footing at each pier will need to be removed while the existing piles can remain in place. Based on this assumption, the total volume of concrete removed within the river channel below existing ground is estimated to be as high as 760 cubic yards. The total area of the existing pier walls (bridge columns) within the SAR R4 channel that will be removed is approximately 1455 square -ft. (0.12 acre).

Overhead utilities running parallel to Market Street and adjacent to the existing bridge, as well as, underground sewer, water, gas, and internet would likely need to be relocated. Extra conduits may be placed in the new bridge structure to accommodate any future utility installation.

Construction will occur within County and private right of way (ROW). ROW will be acquired along the Project alignment as needed. Partial acquisitions are anticipated. Temporary construction easements (TCEs) will be needed throughout the Project.

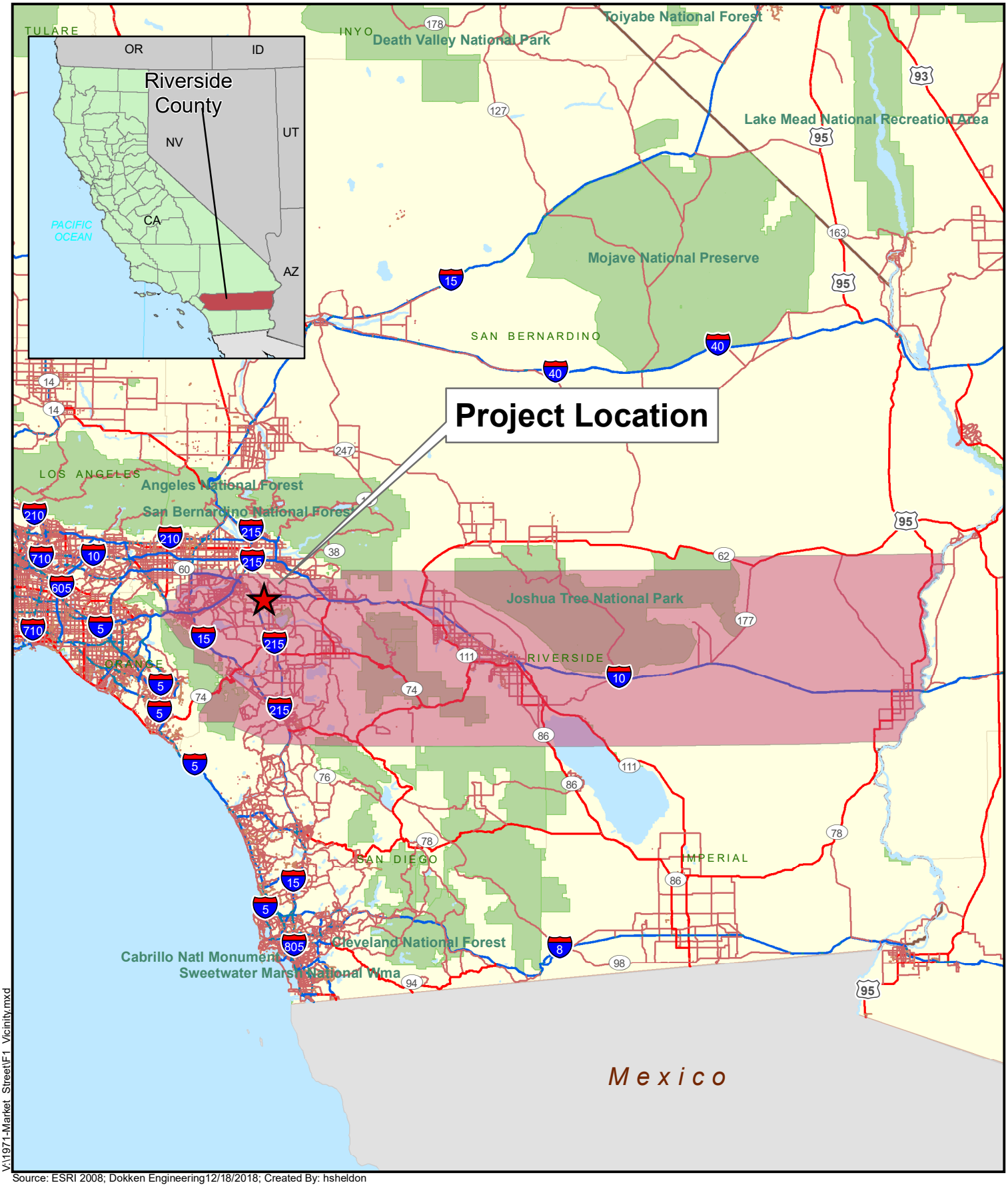
Typical equipment for roadway construction would include heavy construction earthmoving equipment, dump truck and pavers. Typical bridge construction equipment would include cranes, pile drivers, drill rigs, excavators, and concrete pumps.

Construction is anticipated to begin in 2022 and will take approximately 24 months to complete.

Permits and Approvals Needed

The following consultations and environmental permits will be obtained prior to the start of construction.

Agency	Permit/Approval	Status
Santa Ana Regional Water Quality Control Board	Section 401 Water Quality Certification	Anticipated 2020
U.S. Army Corps of Engineers	Section 404 Nationwide Permit	Anticipated 2020
U.S. Army Corps of Engineers	Section 408 Permit	Anticipated 2020
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Anticipated 2020
Riverside County Flood Control and Water Conservation District	Encroachment Permit	Anticipated 2022
City of Jurupa Valley	Temporary Construction Easement	Anticipated 2022
City of Riverside	Temporary Construction Easement	Anticipated 2022



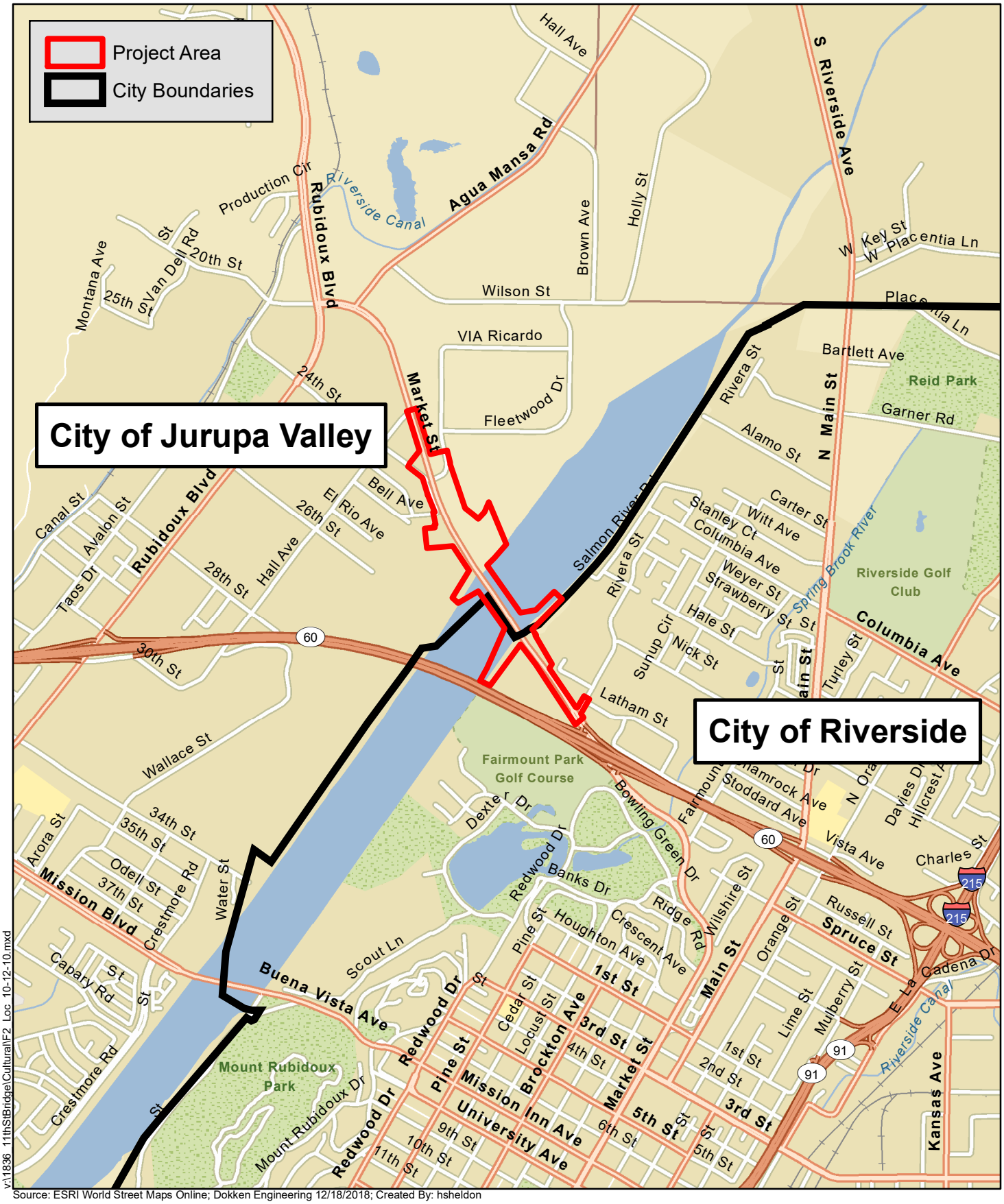
Source: ESRI 2008; Dokken Engineering12/18/2018; Created By: hsheldon

V:\1971-Market_Street\F1_Vicinity.mxd

0 10 20 30 Miles

FIGURE 1
Project Vicinity

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California



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Source: ESRI World Street Maps Online; Dokken Engineering 12/18/2018; Created By: hsheldon

0 0.25 0.5 0.75 1 Miles

FIGURE 2
Project Location

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County California

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\\kingsids\s1\971-Market_Street\ISMND\F3_Project Features.mxd

Source: ESRI Maps Online; Dokken Engineering 1/16/2019; Created By: zachl

0 250 500 750 1,000 Feet

FIGURE 3
Project Features

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning below for additional information.

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

CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The City of Jurupa Valley has not established local CEQA significance thresholds as described in Section 15064.7 of the State CEQA Guidelines. For this reason, this Draft EIR incorporates the CEQA checklist included in Appendix G of the State CEQA Guidelines to determine the significance of environmental impacts.

I. AESTHETICS: Except as provided in Pubic Resources Code Section 21099, 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) In non-urbanized areas, substantially degrade the existing visual character or quality public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized areas, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Source(s): Visual Impact Assessment, Market Street Bridge Replacement Project (2018).

Findings of Fact:

a-b) **No Impact.** The project area is not located immediately adjacent to any state eligible scenic vistas or highways. According to *General Plan Figure 4-23,* the Project site is not adjacent to a scenic corridor.The Proposed Project occurs north of California SR-60 and south of I-10 in the Cities of Riverside and Jurupa Valley, neither of which are designated scenic highways. The proposed project will not have a significant impact upon a scenic highway corridor. No impacts to any state eligible scenic highways or scenic vistas are anticipated.

c) **Less Than Significant Impact with Mitigation Incorporated**. The project location and setting provides for the context for determining the type of changes to the existing visual environment. The Market Street roadway contouring will begin 750 feet north of Rivera Street and Market Street, and will extend north, 50 feet past 24th Street in the City of Jurupa Valley, California. The proposed replacement bridge will be approximately 1,200 feet long, 88 feet wide, and striped for four lanes. The project area is located at the Market Street crossing of the SAR Reach 4 in the Cities of Riverside and Jurupa Valley in Riverside County, California, within an unsectioned area known as the *Land Grant: Jurupa (Rubidoux)*, as shown on the *Fontana, California* 7.5-minute series U.S. Geological Survey (USGS). The project is located within the California Coastal Range Open Woodland-Shrub-Coniferous Forest-Meadow Province and Southern California Mountains and Valleys Section, ecological subsection M262B (Hickman 1993, USDA 2005 and USDA 2007). The landscape is moderate-elevation narrow ranges and broad fault blocks. Granitic formations are beneath the uplands with areas of marine and nonmarine sedimentary rocks elsewhere (NRCS 2017). Vegetation consists of chaparral-mountain shrub, western hardwoods, ponderosa pine, and fir-spruce cover types (USDA 2007). The landscape is characterized by Commercial Retail (CR), Medium Density Residential (MDR), and open/vacant land in the 2017 City of Jurupa Valley Draft General Plan (City of Jurupa Valley, 2017).

Visual Resources and Resource Change

Visual resources of the project setting are defined and identified in this section by assessing visual character and visual quality in the project corridor.

VISUAL CHARACTER

Visual character includes attributes such as form, line, color, and texture, and is used to describe, not evaluate; that is these attributes are neither considered good nor bad. A change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator.

The visual character of the proposed project will be compatible with the existing visual character of the corridor. For this project the following attributes were considered:

- Form—visual mass or shape.

- Line—edges or linear definition.
- Color—reflective brightness (light, dark) and hue (red, green).
- Texture—surface coarseness.
- Dominance—position, size, or contrast.
- Scale—apparent size as it relates to the surroundings.
- Diversity—a variety of visual patterns.
- Continuity—uninterrupted flow of form, line, color, or textural pattern.

The existing visual charter of the project area is a blend of open landscape and constructed elements. The open areas outside of the project area are defined by several surrounding mountains: Rattlesnake Mountain and the Jurupa Mountains to the northwest; Sugarloaf Mountain and the Box Spring Mountains to the northeast and Mount Rubidoux south of the project area. The surrounding mountains create varied, jagged, red ridgelines. Open areas within the project area are defined by straight, smooth lines created by gray levee walls spanning along the Santa Ana River (SAR) Reach 4 and then fragmented by the dark gray State Route 60 Bridge spanning over the river approximately 1,200 feet to the southwest of the project area. Existing linear features will be retained with this project. The existing dominant features in the project area are residential housing and industrial complexes, located to the south. To the north of the project area, are commercial-retail complexes and government offices. Diversely, the SAR Reach 4 runs directly through the project area, suspending the areas of development with a natural setting. This landscape variance alters the texture within the visual resources from a man-made texture of an urbanscape to a rough, grainy riverine environment. The constructed elements within the area generally have straight lines and edges, grey coloring of roadways, and lighter stucco coloring for buildings, and fine to smooth, homogenous textures. The natural vegetation within SAR Reach 4 is rough, granular and creates sporadic edges in comparison to the uniform lines the ornamental vegetation planted near man-made structures generate. The vegetation within the area, both the natural and ornamental vegetation, produces a low lining canopy, creating a uniformed open light effect throughout the area. The color in the project area varies by the season, from dark greens to light browns. The current elements would not be significantly altered by the proposed project and potential changes in visual character would be minimal (see Appendix B: Representative Photos).

VISUAL QUALITY

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the project. The three criteria for evaluating visual quality are de-fined below.

- Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- Intactness is the integrity of visual features in the landscape and the extent to which the existing land-scape is free from non-typical visual intrusions.
- Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual quality of the existing corridor will not be substantially altered by the proposed project. Existing visual quality of the project area is low due to the uniformed, low vividness throughout most of the site. The vividness of the project area is low as the project area consists largely of flat developed lands within medium-density residential development at either end of Market Street Bridge, and lacks distinctive or memorable features. The SAR Reach 4 disrupts the unity and intactness between the disturbed lands on either end of the project area. The proposed project will not alter any of these features; therefore, the changes in visual quality are anticipated to be low.

RESOURCE CHANGE

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed project. This proposed project anticipates having a low impact on Resource Change within the project area. The overall visual resource change as a result of the proposed project is expected to be low, due to changes in visual character and quality anticipated to be minimally altered from the current existing conditions. All of the attributes that comprise the visual character and quality would not substantially be changed as a result of the proposed alternative. The pavement width would be wider, aesthetically treated and textured concrete barriers would separate vehicles from pedestrians, and drainage swales would be constructed on either end of the proposed bridge. The existing soundwall in the southeast quadrant surrounding the La Rivera housing development is anticipated to be raised from 6 feet to 10 feet tall, either at its existing location, adjacent to the existing wall, or at-grade along Market Street. All three potential wall positions would minimally change the existing view for these residents, as a wall currently exists restricting their views from their yards. The change in visual character and quality would be low, as this project is not considered an adverse resource change as the project type is consistent with the existing visual character and quality of the area in its current state.

Viewers and Viewer Response

Neighbors (people with views of the road), travelers (people with views from the road), and recreationalists (people with views from the Santa Ana River trail) would be affected by the proposed project.

Existing residences are located to the northwest and southeast of the existing bridge structure. Commercial and industrial uses are to the north and southeast of the bridge. A government facility, the Riverside County Flood Control and Water Conservation District, exists to the southeast of the bridge. The neighbor group is composed of residents and workers who occupy these surrounding buildings. The local residential and business employee's viewer exposure is moderately-high due to the group's long term duration and constant presence within the project area. The residential and business view's predominate feature in the landscape is the current bridge structure, which is approximately 300 feet from a medium-dense residential, commercial-retail and government office. Though a high rating of sensitivity is given to the group, there would be a low degree of change to views due to the proposed replacement bridge structure being similar in appearance, length, height and position as the current bridge. It is anticipated that the average response of all viewer groups will be moderately-low. The current project area lacks aesthetic treatments and is currently a very disturbed area; however, aesthetics of the project area would likely be valued by the residents and business owners should the bridge be improved.

For roadway travelers approaching from the east and west side of the bridge, viewer exposure is moderately-high due to the high numbers of travelers utilizing the roadway. The number of travelers along this section of the road would be moderately-high as the use by residents and commuters is anticipated to increase with or without the bridge replacement. The duration of these viewers would be low, due to the rate of speed that the new road would operate at, and the small length of the project segment. The viewer group travelers have low sensitivity due to the short time span spent along the proposed project. The travelers' activity level within the project area is high as they are traveling on the roadway and not able to be engaged in observing their surroundings. The awareness of travelers is low as it is focused on the roadway and not the surrounding environment. The aesthetics of the project area is unlikely to be valued by the travelers considering the lack of aesthetics of the existing bridge and level of disturbance in the area.

For recreationalists (e.g joggers) utilizing the Santa Ana River trail and approaching from the north and south side of the bridge, viewer exposure is moderate. The quantity of recreationalists that would travel this section of the trail would be moderately-low as no additional users are anticipated to utilize the Santa Ana River Trail as a result of the proposed bridge widening. The duration and proximity of these viewers would be moderate, due to the slower rate of speed that the recreationalists would move at, and the proximity as the trail runs right under the new widened bridge. The viewer group recreationalists have moderate sensitivity due to the short time span spent within view of the proposed project compared to the average distance traveled along the trail; however, the recreationalists' activity level within the project area is moderate as they are traveling on the Santa Ana River trail are engaged in observing their surroundings. The awareness of travelers is moderate as recreationalists are more focused on the surrounding environment compared to travelers along the roadway. The aesthetics of the project area unlikely to be valued by the recreationalists considering the lack of aesthetics of the existing bridge and level of disturbance in the area; however, with implementation of the proposed project aesthetics, the recreationalists may value the project area to a higher degree.

Visual Impact

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. Two viewpoint locations were assessed, the viewpoint locations can be seen on Figure 4 below and visual simulations showing the existing and proposed conditions can be found below under Viewpoint 1 and Viewpoint 2. The proposed project would be visible from the existing residents in the project's vicinity (see Viewpoint 1), travelers along the widened roadway and adjacent local roadways (see Viewpoint 2), and recreationalists along the Santa Ana River trail. The commercial-retail complexes, industrial complexes, government offices and residents' in proximity to the proposed project would be directly exposed to the changes from the widened roadway. Vehicles are anticipated to travel this portion of Market Street and recreationalists are anticipated to travel along the Santa Ana River trail each day. The viewer exposure duration for neighbors is considered to be long, but residents would have a low response to the surrounding visual environment, as visual character and visual quality would have minimal changes. The proposed bridge aesthetics include textured concrete stained to be more compatible with the natural surroundings, which aim to minimize visual change from the existing bridge to the proposed bridge.

Additionally, the proposed soundwall would minimally change the existing view of the residents located in the southeast quadrant and would be considered a low visual impact as the new soundwall would not be noticeably different from the existing soundwall. The proposed soundwall would continue to maintain the same visual character as existing soundwall; however, it would be heightened from 6 feet to 10 feet tall. The new soundwall would be considered a minimal visual impact to these residents as the wall would continue to obscure views of the roadway and surrounding environment. The viewer exposure duration for travelers is low, as the views would be brief and fleeting, and these travelers would not give notice to the minimal change, especially as the proposed bridge aesthetics including textured concrete barriers stained to be more compatible with the natural surroundings would minimize visual change from the existing bridge to the proposed bridge. The viewer exposure duration for recreationalists is moderate, as the views would be moderately brief and fleeting; however, these recreationalists would likely give minimal notice to the change, especially as the proposed bridge aesthetics including textured concrete barriers stained to be more compatible with the natural surroundings would minimize visual change from the existing bridge to the proposed bridge.

Overall visual impacts as a result of the proposed project would be moderately-low, as the viewer response for neighbors and travelers would be low and the viewer response for recreationalists would be moderately-low.

V:\1971-Market StreetVisual\F4 Viewpoint Locations-20180924.mxd

Source: ESRI Maps Online; Dokken Engineering 12/18/2018; Created By: hsheldon

0 250 500 750 1,000 Feet

FIGURE 4
Viewpoint Locations

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Viewpoint 1 - Existing: View of residents and pedestrians along Market Street facing west (December, 2017).

Viewpoint 1 - Proposed: View representative of residents and pedestrians along Market Street facing west (December, 2017).

Viewpoint 2 - Existing: View of motorists traveling eastbound on Market Street (December, 2017).

Viewpoint 2 - Proposed: View of motorists traveling eastbound on Market Street (December, 2017).

Temporary Impacts

Construction is anticipated to last approximately 24 months. During construction of the Build Alternative, temporary activities such as grading, asphalt laying, truck movement and truck shipments and other routine construction activities within project vicinity will be visible by motorists traveling along Market Street and the adjacent roadways, and from adjacent residential and commercial properties that operate within project vicinity. Construction-related materials, such as road-building material, staging areas, stockpiles, temporary traffic barriers, and construction equipment will be visible to these viewer groups. Areas may also be lighted during construction. Motorists and other viewer groups would experience a change in their physical view of the Market Street Bridge, however, the change is temporary and construction would be subject to local ordinances regarding construction time periods of lighting.

Visible short-term fugitive dust associated with construction would be reduced through the implementation of dust suppression measures outlined within South Coast Air Quality Management District (SCAQMD) Rules and Regulations, Rule 403 Fugitive Dust (SCAQMD 1976), as well as implementation of Caltrans Standard Specifications for Construction, such as Section 10 and 18 (Dust Control). Adhering to Caltrans Standard Specifications for Construction would also minimize visual impacts through the use of opaque temporary construction fencing that would be situated around construction staging areas.

The construction area would be kept neat and orderly with regards to trash. Standard special provisions regarding site maintenance will be implemented. Temporary impacts due to project construction will be short-term and would cease upon the completion of the proposed project.

d) **Less Than Significant with Mitigation Incorporated**. The proposed project may include addition of light sources from streetlighting that are anticipated to result in potential light and glare impacts. However, with implementation of Avoidance and Minimization Measure VIS-1, impacts would be reduced to a less than significant impact.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required; however, the following avoidance and/or minimization measures will be implemented to minimize potential impacts:

VIS-1. Lighting will be appropriately shielded. The project's lighting design must be consistent with the City of Jurupa Valley, the City of Riverside, and Riverside County lighting guidelines and standards.

VIS-2. Concrete surfaces will be heavily textured to discourage graffiti and minimize recurring maintenance activities associated with graffiti removal. Additionally, concrete surfaces will be aesthetically treated or stained natural colors to be more compatible with the surrounding environment.

VIS-3. As feasible the barrier/bridge rail fence shall be powder or vinyl color coated to meet aesthetic needs and to minimize glare.

VIS-4. Implement dust suppression measures as applicable from South Coast Air Quality Management District (SCAQMD) Rules and Regulations, Rule 403 Fugitive Dust and Caltrans Standard Specifications for Construction, Sections 10 and 18 (Dust Control).

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in 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 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 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?	☐	☐	☐	☒

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a) **No Impact**. The proposed project area is not located within the proximity of or in any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

b) **No Impact**. The project is not located within Williamson Act contract lands or within proximity to these types of lands.

c & d) **No Impact**. There are no forest lands or timberlands (or lands zoned as such) in the project study area. The project would not result in the loss of forest land or conversion of forest land to non-forest use.

e) **No Impact**. The project would have no impact to conversion of Farmland to non-agricultural use. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is in the project area as mapped by the Farmland Mapping and Monitoring Program of the California Resources Agency. No forest land is in the project area as well.

Avoidance, Minimization, and/or Mitigation Measures

None.

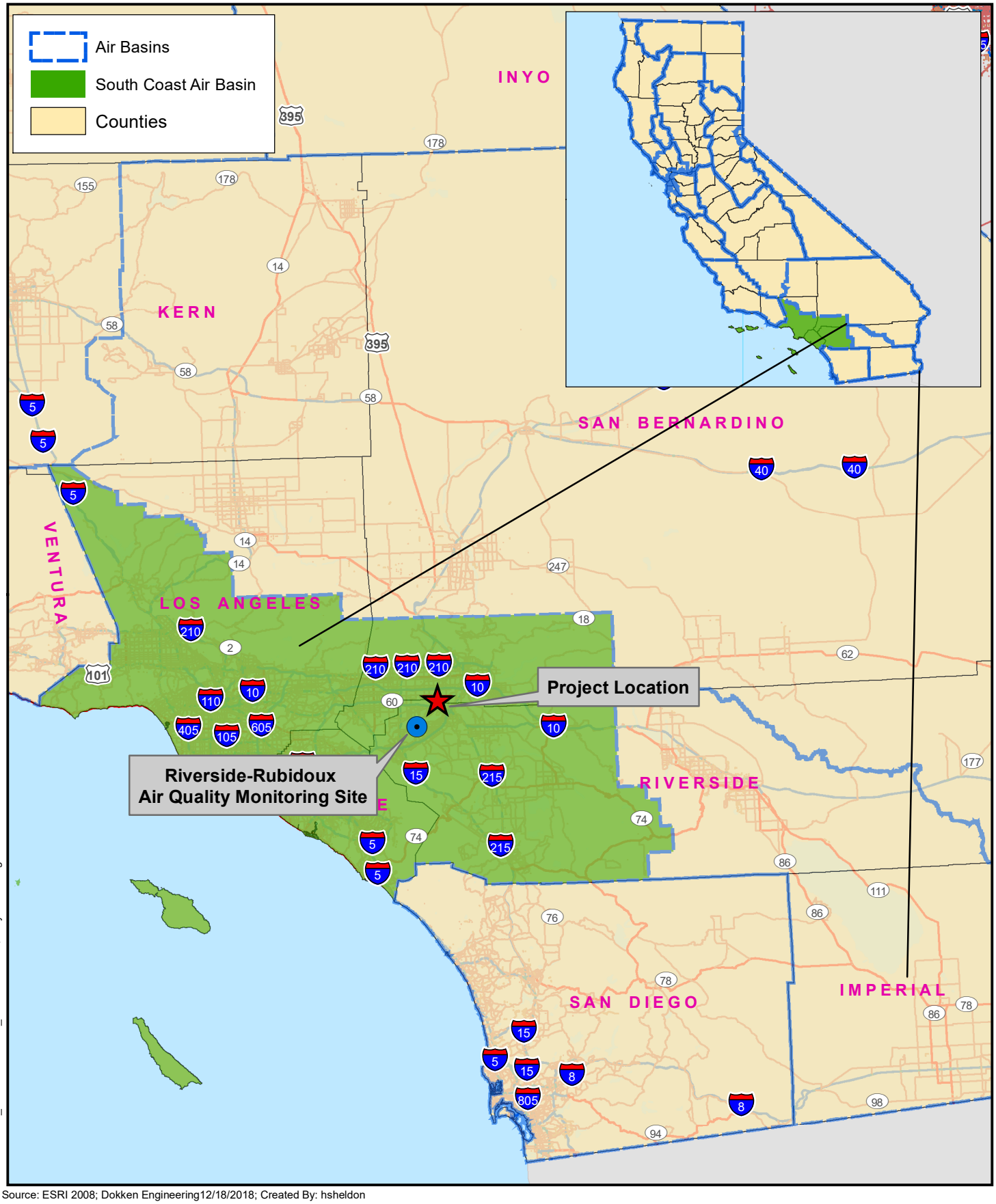
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☒	☐	☐

Source(s): Air Quality Report, Market Street Bridge Replacement Project (2018) & South Coast Air Quality Management District Air Quality Management Plan (2016).

Findings of Fact:

Affected Environment

The Market Street Bridge Replacement project site is located within the City of Jurupa Valley and City of Riverside in Riverside County, an area within the South Coast Air Basin (SCAB). Air quality regulation in the South Coast Air Basin is administered by South Coast Air Quality Management District (SCAQMD). Figure 5 shows South Coast Air Basin and air quality monitoring stations within the vicinity of the project site. The South Coast Air Quality Management District (SCAQMD) is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within the Salton Sea Air Basin. The SCAQMD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. California Air Resources Board (CARB) is the agency with the legal responsibility for regulating mobile source emissions. The SCAQMD is precluded from such activities under State law. The SCAQMD is the agency responsible for preparing regional air quality plans under the state and federal Clean Air Acts.



Source: ESRI 2008; Dokken Engineering12/18/2018; Created By: hsheldon

0 50 100 Miles

Figure 5
South Coast Air Basin

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the state of California (California Ambient Air Quality Standards [CAAQS]) and the federal government NAAQS have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). Table 1 shows the state and federal standards for a variety of pollutants. Ambient air pollutant concentrations are measured at 35 permanent monitoring stations throughout the Basin. The federal and state governments have established ambient air quality standards for six criteria pollutants: ozone, CO, NO_2, SO_2, particulate matter ($PM_{2.5}$ and PM_{10}), and lead. Within the SCAQMD, ozone and $PM_{2.5}$ and PM_{10} are considered pollutants of concern.

SCAQMD prepares an Air Quality Management Plan (AQMP) to describe air pollution control strategies to be implemented by counties or regions classified as nonattainment areas in order to bring the area into compliance with the requirements of federal and State air quality standards. The AQMP utilizes local planning agencies future projections identified in their General Plans to determine control strategies for regional compliance status, and identifies projects potentially causing a significant impact on air quality which would impede fulfilling compliance of the federal and State air quality standards. Projects consistent with the local General Plan are generally considered consistent with the AQMP, as the AQMP is based on projections from local General Plans. Additionally, the estimated pollutants emitted from any project must not exceed any significance threshold set by the SCAQMD or cause a significant impact on air quality for any individual project to be determined consistent with the AQMP. If significance thresholds are exceeded, the project can be considered consistent with the AQMP by implementing feasible mitigation measures to reduce a project's impact level from significant to less than significant under CEQA.

Under NAAQS, the project is located in an area that is in non-attainment for 8-hour ozone and PM10. It is in attainment or unclassified for other Federal criteria pollutants. Under CAAQS, the project is located in an area that is in non-attainment for 8-hour ozone, 1-hour ozone, and PM10. It is in attainment or unclassified for other State criteria pollutants. Table 1 summarizes the ambient air quality classifications for the project location. Table 2 shows Ambient Air Quality Standards.

The South Coast Air Basin has a hot, dry, desert climate. Precipitation is approximately 12 inches annually and occurs mostly in the winter months from active frontal systems and occasionally in summer months from thunderstorms. The project site is at an elevation of approximately 800 feet above sea level. The average maximum temperature annually is 82.6 degrees Fahrenheit and the average minimum temperature annually is 47.8 degrees Fahrenheit (Western Regional Climate Data Center, 2013). The average temperature overall is 74.3 degrees Fahrenheit.

Table 1. Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards** [1]		**National Standards** [2]		
		Concentration [3]	**Method** [4]	**Primary** [3,5]	**Secondary** [3,6]	**Method** [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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(Table 1, continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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Table 2. Attainment for the South Coast Air Basin

Pollutant	Attainment Status	
	Federal	State
O_3 –8-hour	Nonattainment (Extreme)	Nonattainment
O_3 –1-hour	Nonattainment	Nonattainment
PM_{10}	Attainment (Maintenance)	Nonattainment
$PM_{2.5}$	Nonattainment (Serious)	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO_2	Attainment (Maintenance)	Attainment
SO_2	Unclassifiable/Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Lead	Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Attainment
Sources: National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality, SCAQMD February 2016, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf		

Standards (CAAQS) Attainment Status for South Coast Air Basin

The State CEQA Guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the determinations above. The SCAQMD has specified significance thresholds (SCAQMD 2016) to determine whether mitigation is needed for project-related air quality impacts. The SCAQMD's thresholds of significance for construction- and operation-related emissions are presented in Table 3.

Table 3. South Coast Air Quality Management District Thresholds of Significance

Thresholds of Significance		
Pollutant	**Construction (pounds per day)**	**Operation (pounds per day)**
NO_x	100 lbs/day	55 lbs/day (0.0275 tons/day)
VOC	75 lbs/day	55 lbs/day (0.0275 tons/day)
PM_{10}	150 lbs/day	150 lbs/day (0.075 tons/day)
$PM_{2.5}$	55 lbs/day	55 lbs/day (0.0275 tons/day)
SO_x	150 lbs/day	150 lbs/day (0.075 tons/day)
CO	550 lbs/day	550 lbs/day (0.275 tons/day)
Lead	3 lbs/day	3 lbs/day (0.001 tons/day)
Source: SCAQMD 2015		

Asbestos

Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (proper rock name serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present. Based on the map of naturally-occurring asbestos locations contained in *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally*

Occurring Asbestos (California Department of Conservation, Division of Mines and Geology 2000), major ultramafic rock formations are not found within proximity to the proposed project site.

Environmental Consequences

a) No Impact.

The South Coast Air Quality Management District is required to produce air quality management plans directing how the South Coast Air Basin's air quality will be brought into attainment with the national and state ambient air quality standards. The most recent air quality management plan is *2016 Air Quality Management Plan* and it is applicable to City of Jurupa Valley. The purpose of the *2016 Air Quality Management Plan* is to achieve and maintain both the national and state ambient air quality standards described above.

In order to determine if a project is consistent with the *2016 Air Quality Management Plan*, the South Coast Air Quality Management District has established consistency criterion which are defined in Chapter 12, Sections 12.2 and 12.3 of the South Coast Air Quality Management District's *CEQA Air Quality Handbook* and are discussed below.

Consistency Criterion No. 1: *The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2016 Air Quality Management Plan.*

Consistency Criterion No. 1 refers to violations of the California Ambient Air Quality Standards and National Ambient Air Quality Standards. As evaluated under Issue (b) below, the Project would not exceed regional or localized significance thresholds for any criteria pollutant during construction or during long-term operation. Accordingly, the Project's regional and localized emissions would not contribute substantially to an existing or potential future air quality violation or delay the attainment of air quality standards.

Consistency Criterion No. 2: *The proposed project will not exceed the assumptions in the 2016 Air Quality Management Plan.*

The *2016 Air Quality Management Plan* demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP.

The Air Quality Elements of the City of Jurupa Valley and City of Riverside General Plans emphasize several approaches for improving air quality within each City. The existing and future traffic volumes along the bridge are accounted for in the circulation elements of the respective General Plans. As this project is identified within the General Plans, it is not anticipated the project itself would generate growth. Further, the project does not include the potential for new growth into an area where previous infrastructure did not exist. The project is the replacement of an existing bridge on the same alignment, will be widened to match the general plan; therefore, the project is consistent with the respective General Plans.

Additionally, the bridge would serve the same average daily traffic with or without the bridge widening; therefore, the proposed project would not change the number of vehicle trips or their operational characteristics, no change in the volume of vehicular emissions would occur; therefore, the project would not substantially contribute to or cause deterioration of existing air quality. Further, the proposed project would not increase emissions nor would the proposed project prevent the goals outlined in either City's General Plan from being reached. It is determined that the project is consistent with the AQMP; therefore, the project would not conflict with or obstruct implementation of the AQMP.

b) Less Than Significant with Mitigation Incorporated.

Construction Emissions

Construction and grading would not occur in an area with ultramafic rock that could be a source of emissions of naturally-occurring asbestos. Major ultramafic rock formations are not found in Riverside County (California Department of Conservation, Division of Mines and Geology 2000).

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and various other activities. Emissions from construction equipment also are anticipated and would include CO, NOx, volatile organic compounds (VOCs), directly-emitted particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NOx and VOCs in the presence of sunlight and heat.

Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, demolition of the existing bridge, and paving roadway surfaces. Construction-related effects on air quality from the bridge replacement would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. If not properly controlled, these activities would temporarily generate PM_{10} and $PM_{2.5}$, and small amounts of CO, SO_2, NOx, and VOCs. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture.

Adverse effects of construction activities include increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the project area and may

require frequent washing during the construction period. Further, asphalt-paving materials used during construction will present temporary, minor sources of hydrocarbons that are precursors of ozone.

The Build Alternative project's construction is anticipated to take 24 months. The Project's construction emissions were estimated using the Roadway Construction Emissions Model by the Sacramento Metropolitan Air Quality Management District (SMAQMD 2014), which can be used to assist roadway project proponents with determining the emission impacts of their projects in the SCAQMD. As summarized in Table 4, construction activities from the Build Alternative of the Project would not exceed emission thresholds established by the SCAQMD.

Table 4. Road Construction Emissions Model Compared to Thresholds of Significance

Thresholds of Significance		
Pollutant	**Road Construction Emissions Model Estimates**	**SCAQMD Threshold (pounds per day)**
NO_x	87.61 lbs/day	100 lbs/day
VOC	8.49 lbs/day	75 lbs/day
PM_{10}	13.87 lbs/day	150 lbs/day
$PM_{2.5}$	5.58 lbs/day	55 lbs/day
SO_x	0.16 lbs/day	150 lbs/day
CO	71.77 lbs/day	550 lbs/day
Lead	N/A	3 lbs/day
Source: Modeling using the Roadway Construction Emissions Model 8.1.0 (Sacramento Metropolitan Air Quality Management District 2017).		

As shown in Table 4 above, construction emissions will not exceed SCAQMD thresholds. To avoid and minimize impacts to applicable air quality plans, violation of air quality standards, or increase of criteria pollutants for which the project region is in non-attainment during construction, the project will implement measure AQ-1 which would ensure that impacts related to would be less than significant with mitigation incorporated.

Operational Emissions

CT-EMFAC was utilized to calculate emissions of pollutants, which can be found in Table 5 below. The inputs and results used for CT-EMFAC can be found in Appendix B.

Table 5. Daily Operational Emissions and Local Thresholds

	2017	Opening Year (2025)		Future Year (2045)		SCAQMD Threshold (tons)
	Existing (tons)	No Build (tons)	Build (tons)	No Build (tons)	Build (tons)	
NO_x	<0.001	<0.001	<0.001	<0.001	<0.001	0.0275
PM_{10}	<0.001	<0.001	<0.001	<0.001	<0.001	0.075
$PM_{2.5}$	<0.001	<0.001	<0.001	<0.001	<0.001	0.0275
CO	<0.001	<0.001	<0.001	<0.001	<0.001	0.275
ROG	<0.001	<0.001	<0.001	<0.001	<0.001	N/A
Note – NOx and ROG are ozone precursorss						

While the bridge replacement is anticipated to accommodate additional vehicles, air emissions would be improved by reducing idle time due to stop and go traffic. As shown in Table 5, no criteria pollutant in nonattainment in the SCAB would be increased as a result of the proposed project. Overall ambient emissions are not anticipated to be substantially higher with the proposed project. Emissions caused by the proposed project would be well below the SCAQMD thresholds. Operational air quality impacts would not be substantial. The project's air quality emissions would not exceed any applicable thresholds of significance for either construction or operation of the facility. Further, no cumulatively considerable impacts to criteria pollutants in non-attainment are anticipated as the project's operational emissions for non-attainment pollutants are the same for both the build and no-build alternatives. As shown in Table 5 above, operational emissions will not exceed SCAQMD thresholds and no mitigation measures are required.

Regional Transportation Conformity

To be determined as regionally conforming, a project must be listed and accounted for in the modeling associated with the Regional Transportation Plan (RTP) and the Federal Transportation Improvement Program (FTIP). In accordance with Section 93.114 of the U.S. Environmental Protection Agency (EPA) transportation conformity regulations, the proposed project is in the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 SCAG RTP/SCS) under RTP ID 3A04WT165. The 2016 SCAG RTP/SCS was found to conform by the Southern California Association of Governments (SCAG) on April 7, 2016 and FHWA and FTA adopted the air quality conformity finding on June 1, 2016. The design concept and scope of the proposed project is consistent with the project description in the 2016 RTP and the assumptions in SCAG's regional emissions analysis (Appendix B). The project would not obstruct the State Implementation Plan or the applicable Air Quality Plan; impacts are less than significant with the proposed mitigation incorporated.

Project Level Conformity

The proposed project is consistent with the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016 SCAG RTP/SCS). The 2016 SCAG RTP/SCS was found to conform by the Southern California Association of Governments (SCAG) on April 7, 2016 and FHWA and FTA adopted the air quality conformity finding on June 1, 2016.

The Air Quality Conformity Analysis of the 2016 RTP/SCS found that all projects consistent with the 2016 RTP/SCS would not result in an increase of criteria pollutants to a level which would bring the area into non-attainment. The design concept and scope of the proposed project is consistent with the project descriptions found in the 2016 RTP/SCS and the assumptions in SCAG's regional emissions analysis. Therefore, the project would not exceed quantitative thresholds for ozone precursors, NOx and ROG (VOC), PM_{10} or $PM_{2.5}$, and NO_2.

The project is subject to PM2.5/PM10 conformity analysis because it is located within a PM10 and PM2.5 nonattainment area. As the first step in demonstrating PM2.5/PM10 conformity, the project underwent Interagency Consultation through the SCAG Transportation Conformity Working Group to determine if it is a Project of Air Quality Concern (POAQC) as defined in 40 CFR 93.116 and 93.123 and U.S.EPA's Hot-Spot Guidance. The SCAG Transportation Conformity Working Group determined the project is not a POAQC on February 6, 2018.

While the bridge replacement is anticipated to accommodate additional vehicles, air emissions would be improved by reducing idle time due to stop and go traffic. Overall ambient emissions are not anticipated to be substantially higher with the proposed project. Emissions caused by the proposed project would be short-term and well below the SCACMD thresholds. Operational air quality impacts would not be substantial.

c, d) **Less Than Significant with Mitigation Incorporated**. The project would have less than significant impact with mitigation incorporated, on exposing sensitive receptors to substantial pollutant concentrations and creating objectionable odors. Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of each paving site(s). Such odors would be quickly dispersed below detectable thresholds as distance from the site(s) increases. Although the closest sensitive receptors are residences located southeast of the bridge, approximately 200 feet east of the project area, construction would be temporary in nature and with the inclusion of measure AQ-1, these impacts are not considered to be significant.

Avoidance, Minimization, and/or Mitigation Measures

All of the construction impacts to air quality are short-term in duration and, therefore, will not result in adverse or long-term impacts. Implementation of the following measure will reduce any air quality impacts resulting from construction activities:

AQ-1: The Wind Erosion Control BMP (WE-1) from Caltrans' Construction Site Best Management Practices Manual will be implemented as follows:

- Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment shall be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the project.
- If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked "NON-POTABLE WATER – DO NOT DRINK."
- Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits.

IV. BIOLOGICAL RESOURCES: 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, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
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 policies 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?	☐	☐	☒	☐

Source(s): Natural Environment Study, Market Street Bridge Replacement Project (2018).

Findings of Fact:

Regulatory Setting

"Special status species" include any species that has been afforded special recognition by federal, state or local resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW], etc.), and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal

requirements. The project's CNDDB, USFWS, CNPS, and CDFW Special Status Species Table is included in Appendix C.

Affected Environment

A Biological Study Area (BSA) is shown in Figure 6. The Western Riverside County MSHCP area is shown in Figure 7. The BSA was defined as the Proposed Project impact area with an additional 50-foot buffer to accommodate the design and facilitate construction. The Proposed Project impact area is defined as all areas that will be temporarily impacted by the Proposed Project, including proposed right-of-way, construction easements, cut and fill limits, potential staging areas, and access roads.

The Proposed Project is located within the Western Riverside Multiple Species Habitat Conservation Plan (WRMSHCP) and is considered a WRMSHCP Covered Activity. As a covered activity, the project is required to be in compliance with Sections 6.1.2 (Riparian/Riverine and Vernal Pools), 6.1.3 (Narrow Endemics), 6.1.4 (Urban Wildlands Interface), 6.3.2 (Additional Surveys), and 7.5 (Guidelines for Facilities within the Criteria Area and Public\Quasi-Public Lands). Section 12.2.2 of the WRMSHCP Implementing Agreement requires WRMSHCP Permittee regional infrastructure projects to contribute funding to WRMSHCP implementation. The Western Riverside County Regional Conservation Authority (RCA), tasked with implementing the WRMSHCP, adopted a policy regarding public project funding contributions to the WRMSHCP that requires City and County roadways covered by the WRMSHCP to contribute 5 percent of project construction costs of any new or capacity enhancing/widening project, excluding Transportation Uniform Mitigation Fee (TUMF) and Measure A sales tax fund sources. Also, contingent on approval of Federal Highway Administration, any federally funded portion of the project's construction would be subject to the WRMSHCP fee contribution. The 5 percent contribution, like the Local Development Mitigation Fee payment by private projects, is a requirement of WRMSHCP participation.

Further, the Project was reviewed to determine consistency with the WRMSHCP in relation to 1) Conserved Lands, Criteria Cells, or Cells Groups; 2) NEPSSA; 3) Burrowing Owl Survey Area (WRMSHCP Section 6.3.2.); 4) Public/Quasi Public Lands; and 5) WRMSHCP Cores, Linkages, or Reserve Assembly within the Area Plan (See Appendix D. WRMSHCP Consistency Analysis). A majority of the BSA is located within Western Riverside County MSHCP Public/Quasi Public (PQP) Lands and a small portion is located within private lands. The Project may need temporary construction easements within adjacent Public/Quasi Public (PQP) Lands. The BSA is also in a Narrow Endemic Plant Species Survey Area (NEPSSA), Burrowing Owl Survey Area, the Criteria Species Survey Area, MSHCP Core A Area which provides important Core Linkages and Wildlife Corridors/Crossings (See Figure 7). However, the BSA is not within a designated Western Riverside County MSHCP Criteria Cell or Reserve Assembly areas.

Literature review, habitat assessments and biological surveys determined that the BSA was potentially suitable for the following sensitive species to occur: Santa Ana River woollystar (*Eriastrum densifolium* ssp. *Sanctorumleast*), burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), loggerhead shrike (*Lanius ludovicianus*), Santa Ana sucker (*Catostomus santaanae*), coast horned lizard (*Phrynosoma blainvillii*), western yellow bat (Lasiurus xanthinus) and Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*). Several surveys were conducted throughout the BSA and the least Bell's vireo, Santa Ana River woollystar and the coast

horned lizard were the only species observed. All the mentioned listed species are considered to have the potential to occur within the BSA based on nearby known occurrences and presence of suitable habitat within and/or directly adjacent to the BSA. The State-listed Santa Ana River woollystar and least Bell's vireo were found within the BSA; however, no take of State-listed species is anticipated. Additionally, suitable habitat is present for least Bell's vireo, loggerhead shrike, Santa Ana sucker, Santa Ana woollystar and Delhi Sands flower-loving fly.

Threatened and Endangered Species

Santa Ana River Woollystar

Santa Ana River woollystar is a Federally and State listed endangered perennial herb. This native and rare plant is endemic to California and is a covered species within the Western Riverside County MSHCP. Additionally, the species has been assigned a rare plant rank of 1B.1 by the CNPS. The species grows in Southern California in Riverside, San Bernardino and Orange County. The species requires sandy or gravelly soils in chaparral or coastal scrub (alluvial fan) habitats (CNPS 2017).

The species is seriously threatened by urban development, vehicles, foot traffic, sand and gravel mining, hydrological alterations, illegal dumping, road construction, flood control projects, and non-native plants (CNPS 2017; Jepson eFlora 2017).

Delhi Sands Flower-loving Fly

The Delhi Sands flower-loving fly is a Federally listed species and is a covered species within the Western Riverside County MSHCP. Currently, the species is only found in small areas in San Bernardino and Riverside counties, in habitats that are characterized by fine sandy soil, known as Delhi series sands. The distribution of the Delhi Sands flower-loving fly within Riverside County is limited to the northern portion of the County in the vicinity of Mira Loma, Jurupa, and the Agua Mansa area. Major threats to the species include habitat loss from development and habitat degradation associated with off-road vehicles and illegal dumping.

Santa Ana Sucker

The Santa Ana sucker is a Federally listed species that is endemic to California and is a covered species within the Western Riverside County MSHCP. Critical habitat has been designated for this species and is located within the BSA. Santa Ana suckers are primarily found in small to medium sized streams that flow year-round and may vary in depth from several centimeters to over 1 meter deep. Spawning occurs in gravelly riffles from mid-March until early June; however, spawning can also occur outside of these ranges if the river behavior, including flow, temperature, oxygen levels, etc., is ideal. The species uses their scraping mouths to feed on algae and detritus, and may also feed on insects. Major threats to the species include habitat loss from development and habitat degradation associated with dewatering, water quality, and recreational activities.

Least Bell's Vireo

The least Bell's vireo is a Federally and State listed endangered species; and a covered species within the Western Riverside County MSHCP. In 1994, critical habitat was designated for this species. No designated critical habitat for this species is located within the Proposed Project Area. The least Bell's vireo occurs in riparian habitats and typically breeds in willow riparian woodland supporting a dense, shrubby understory of mulefat and other mesic species. The species requires dense riparian shrubbery, such as willow and

wild rose, for nest construction and prefers to nest where flowing water is present. The decline of the species is attributed to land development, water diversion, recreational activities, and excessive grazing continue to impact the remaining riparian systems that support least Bell's vireos.

Non-Listed Special Status Species

Species discussed in this section are not listed as threatened or endangered under the FESA or CESA but are protected by CFG Code. The following special status species have been determined to have the potential of occurring within the BSA and may be affected by the proposed project.

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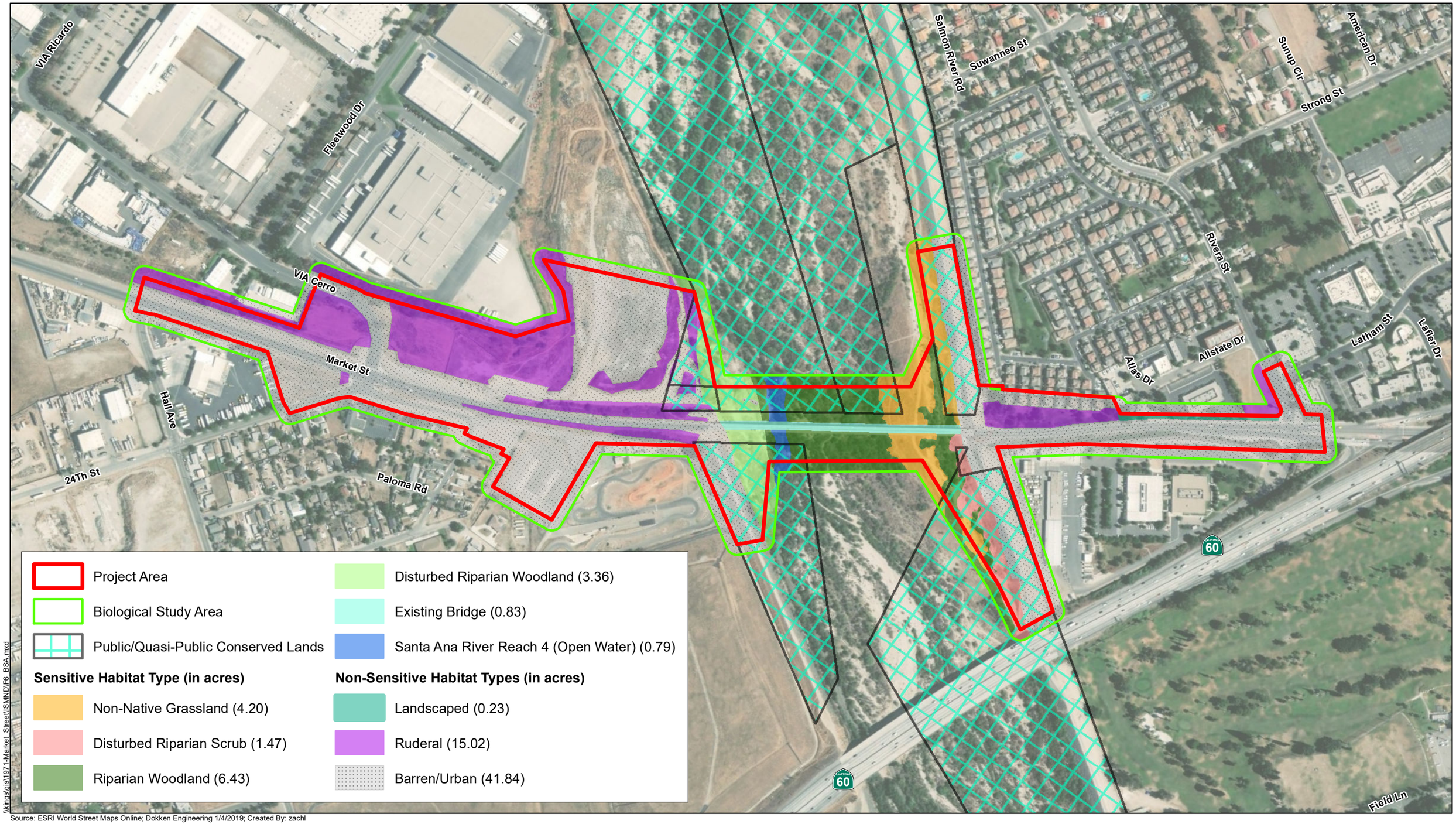

\\kingsgis\gis\1971-Market_Street\ISMND\F6_BSA.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 1/4/2019; Created By: zachl

0 500 1,000 1,500 2,000 Feet

FIGURE 6
Biological Study Area

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Project Area

WESTERN RIVERSIDE MSHCP Boundary

Criteria Cells

AREA PLAN

Jurupa

AREA PLAN SUBUNIT

Santa Ana River North

CRITERIA AREA SURVEYS

Narrow Endemic Plants Survey

Burrowing Owl Survey

Criteria Cell 187

0 500 1,000 1,500 2,000 Feet

0 4 8 12 16 20 Miles

V:\1971-Market Street\SMND\F7 MSHCP Consistency MSHCP Boundary.mxd

Source: ESRI Aerial Online; Dokken Engineering 12/18/2018; Created By: hsheldon

FIGURE 7
MSHCP Boundary

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Western Yellow Bat

The western yellow bat is not a Federally or State listed species but is a CDFW Species of Special Concern. Western yellow bats can be found, year-round, from Los Angeles to San Bernardino County and south toward Baja California. Typically, the species occurs close to water resource within riparian, desert riparian, desert wash and palm oasis habitats. Populations of western yellow bats are threatened and eliminated from many areas in Riverside County due to cosmetic trimming of palm fronds. The use of pesticides in date palm and other orchards may also constitute a threat to both roosting bats and the insects upon which they forage. Domestic cats, whether pets or feral, may be a significant source of predation, as they are for many lizards, songbirds, and rodents.

Coast Horned Lizard

The coast horned lizard is not a Federally or State listed species, but is a CDFW Species of Special Concern and is a covered species within the Western Riverside County MSHCP. The species inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. The species is often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills. The species is most active April through July with breeding occurring April to May and hatchlings emerging August to September. The coast horned lizard is diurnal, displaying active periods during warm weather, and retreating underground, becoming inactive during extended periods of low temperatures or extreme heat.

Populations of coast horned lizards are threatened and eliminated from many areas in Riverside County due to habitat destruction from human development and agriculture, and the spread of nonnative ants, such as Argentine ants (*Ridomyrmex humilis*) which displace the native ant food source (Stebbins 2003).

Burrowing Owl

The burrowing owl is not a State or Federally listed species, but is a CDFW Species of Special Concern and a USFWS Migratory Nongame Bird of Management Concern. Burrowing owls were historically common throughout much of California, however due to habitat loss and degradation, populations have been drastically reduced. The owl is a yearlong resident occupying open, arid habitats, particularly grasslands, deserts and abandoned agricultural areas. To support its life processes, the species requires friable soils for burrow construction and an adequate prey base (Zeiner 1988-1990).

Logger-head Shrike

The loggerhead shrike is a medium size carnivorous songbird. The species is listed as a Species of Special Concern by CDFW. Historically, shrikes were found throughout most of California in a variety of open habitats with sparse shrubs or trees for perching, territorial advertisement, and nest construction. The species preys on a variety of small insects, amphibians, reptiles, small mammals and other song birds. The species is unusual in that it will store larger prey by impaling it on sharp objects (i.e. cactus thorns, barbed wire) for later consumption. According to the North American Breeding Bird Survey, the species has declined on average by 3.2 percent per year between 1966 and 2010, which is a cumulative loss of more than 75 percent. Much of this decline has been attributed to the widespread use of pesticides and habitat loss as suitable open woodland and scrub habitats are converted to agricultural or urban areas.

Environmental Consequences

a) **Less than Significant with Mitigation Incorporated**. The project would have less than significant impact on special status species. The following sensitive species occur within the BSA:

Santa Ana River Woollystar

The Proposed Project will result in temporary effects to Santa Ana River woollystar habitat. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Santa Ana River woollystar is a covered species under the MSHCP for which take is partially covered. Take of this species is covered outside Public/Quasi-Public Lands, but not within Public/Quasi-Public Lands. Take of the species is not anticipated as the identified Santa Ana woollystar specimen were located within BSA but 100-ft. outside of the proposed impact area. With the inclusion of Mitigation Measures BIO-5 through BIO-7, permanent impacts to the species are not anticipated.

Delhi Sands Flower-loving Fly

The Proposed Project will result in temporary effects to approximately 2.66 acres of Delhi sands flower-loving fly habitat. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Direct impacts to the species will be minimized through the Project's avoidance and minimization measures BIO-1 through BIO-4. Delhi sands flower-loving fly is a covered species under the MSHCP for which take of the species is partially covered. Take of this species is only covered outside of Public/Quasi-Public Lands but not within Public/Quasi-Public Land.

Santa Ana Sucker

The existing running waters in the low-flow channel contain suitable habitat for Santa Ana sucker, as well as, other portions of the floodplain within the BSA when it flows during large storm events. The presence of water in the low-flow channel, coarse substrates such as boulders, cobbles, and gravels as well as fine silts and sands, in addition to riparian vegetation, indicate the potential presence of suitable habitat for all Santa Ana sucker life stages. Approximately 0.79 acres of stream channel/pool designated critical habitat, SAR R4 open water channel, is within the BSA. Existing pier walls will be removed from the active SAR R4 open water channel and new pier walls will not be established within SAR R4 active channel, therefore, pier walls are not anticipated to result in a net loss to Santa Ana sucker habitat within the BSA, and no permanent impacts are anticipated. However, the Proposed Project will result in 0.49 acres of temporary effects and 0.06 acres of shade impacts to Santa Ana sucker critical habitat. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. The Santa Ana sucker is a covered species under the MSHCP for which take of habitat is covered. With the inclusion of Mitigation Measures BIO-13 through BIO-19 mentioned below, direct impacts to the species are not anticipated.

Least Bell's Vireo

The Proposed Project will result in temporary effects to least Bell's vireo. Temporary impacts include suitable riparian woodland and disturbed riparian scrub that would be disturbed during construction. New areas of shade would also be introduced by the establishment of the expanded bridge deck. Approximately, 4.34 acres of riparian woodland and 1.33 acres of disturbed riparian scrub habitat that could be utilized as foraging/nesting habitat by the least Bell's vireo will be temporarily disturbed during construction. Temporary effects will be re-contoured and re-vegetated to preconstruction

conditions. Additionally, shade created with the establishment of the extended bridge deck will occur. The establishment of the new bridge deck will result in new shade impacts to approximately 0.39 acre of riparian woodland habitat.

If pile driving occurs during the nesting season, it could temporarily negatively affect the reproductive output of the least Bell's vireo. The Project will avoid and minimize effects to the least Bell's vireo with implementation of avoidance measures described below. With the inclusion of Mitigation Measures BIO-8 and BIO-10 through BIO-12, impacts to the species will be reduced to the greatest extent feasible. However, direct impacts from the Project may adversely affect the species.

Western Yellow Bat

The Proposed Project will result in temporary effects to western yellow bat species. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Additionally, tree removal within the BSA could potential impact roosting habitat for the species. With the inclusion of Mitigation Measures BIO-20 through BIO-27, direct impacts to the western yellow bat are not anticipated.

Burrowing Owl

The Proposed Project will result in temporary impacts to potential burrowing owl habitat. Temporary impacts include suitable grassland habitat that would be disturbed during construction. Approximately 2.66 acres of non-native grassland habitat that could be utilized as foraging/nesting habitat by the burrowing owl will be temporarily disturbed during construction. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. General biological surveys conducted in 2012 and 2017 detected suitable habitat but no individuals were observed; therefore, no direct impacts are anticipated. However, since suitable habitat is present within the BSA, and in accordance to the Western Riverside MSHCP, protocol burrowing owl surveys will be conducted between March 1 and August 31 in accordance to 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and the 2012 Staff Report on Burrowing Owl Mitigation. If burrowing owls are detected, disturbance to burrows will be avoided during the nesting season (February 1 through August 31) and with the inclusion of Mitigation Measure BIO-9, no impacts to burrowing owls are anticipated.

Logger-head Shrike

The Proposed Project will result in temporary effects to loggerhead shrike species. Temporary effects include construction areas outside of permanent effects that will be re-contoured and re-vegetated to preconstruction conditions. Approximately, 4.34 acres of riparian woodland and 2.66 acres of non-native grasslands that could be utilized as foraging/nesting habitat by the loggerhead shrike will be temporarily disturbed during construction. With the inclusion of Mitigation Measures BIO-8 and BIO-12, direct impacts to the species are not anticipated.

Coast Horned Lizard

The Proposed Project will result in temporary effects to coast horned lizard species. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Temporary impacts include 2.66 acres of non-native grassland habitat that could be utilized by the coast horned lizard will be temporarily disturbed during construction. Direct impacts to the species will be minimized through the Project's Avoidance and Minimization Measures BIO-30 through BIO-33. The coast horned lizard is a covered species under the MSHCP for which take is partially covered.

b) **Less than Significant with Mitigation Incorporated**. The project would have less than significant impact on riparian habitat or other sensitive natural community. The following habitats occur within the BSA:

Non-Native Grassland

Areas of non-native grassland habitat within the BSA are densely vegetated and dominated by non-native species, including shortpod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), common ripgut grass (*Bromus diandrus*), and foxtail chess (*Bromus madritensis*). Areas of non-native grasslands habitats within the BSA are concentrated under the existing Market Street Bridge and contain evidence of human disturbance through indications of heavy Off-Highway Vehicle (OHV) use through the area, trash dumping, and disturbance associated with transit encampments. The total area of non-native grassland habitat is approximately 4.20 acres of the BSA of which 2.66 acres will be temporarily disturbed and 0.13 acres will be shaded by the proposed project.

Disturbed Riparian Scrub

Areas of disturbed riparian scrub habitat within the BSA are dominated by willows, mule fat, caster bean (*Ricinus communis*) and tamarisk (*Tamarix ramosissima*). The riparian vegetation has a sparse canopy, mixed with garbage and other evidence of human presence (OHV tracks). Areas of disturbed riparian scrub habitat within the BSA are concentrated directly under the existing Market Street Bridge, between existing pier walls, and total approximately 1.47 acres within the BSA of which 1.33 acres will be temporarily disturbed by the proposed project.

Riparian woodland

Areas of riparian woodland habitat within the BSA are composed primarily of willows, Fremont cottonwood, mule fat, and tamarisk. Areas of riparian woodland habitat within the BSA are concentrated near the existing Market Street Bridge and SAR R4 open water channel, and total approximately 6.43 acres within the BSA of which 4.34 acres will be temporarily disturbed and 0.39 acres will be shaded by the proposed project.

Disturbed Riparian woodland

Disturbed riparian woodland habitat within the BSA includes areas that were once categorized as riparian; however, were recently cleared with heavy equipment, such as bulldozers and graders. Disturbed riparian woodland is categorized by the abundant evidence of recent grading and compaction, trash dumping, and disturbance associated with transient encampments. Within the BSA, the disturbed riparian woodland is restricted to the north side of the SAR R4 open water channel. Total area of disturbed riparian habitat is approximately 3.36 acres of the BSA of which 2.09 acres will be temporarily disturbed and 0.16 acres will be shaded by the proposed project.

Riparian/Riverine

Under Section 6.1.2 of the Western Riverside County MSHCP, special consideration is given to riparian/riverine habitats. The MSHCP categorizes land as riparian/riverine within the BSA as the Santa Ana River Reach 4 wash between the toes of the levee slopes, which is the same area classified as jurisdictional Waters of the State and encompasses all mapped sensitive habitat types. The total area of protected riparian/riverine habitat within the BSA is approximately 17.08 acres of which 11.74 acres will be temporarily disturbed, including 0.83 acres currently occupied by the existing bridge, and 0.74 acres will be shaded by the proposed project.

Project Impacts to Riparian Habitat

The Proposed Project anticipates 11.74 acres of temporary impacts, including 0.83 acres currently occupied by the existing bridge, and 0.74 acres of new shade impacts to MSHCP riparian/riverine habitat. Permanent impacts are not anticipated to result from the Proposed Project because the Proposed Project will be replacing the eleven existing pier walls, at 0.01 acre each for a total area of 0.115 acre, with thirty-four piers at 0.00543 each that total 0.018 acre. The removal of the old piers and establishment of the new piers will result in a 0.1-acre net gain within the BSA.

Table 6 illustrates the anticipated temporary and shade impacts to vegetation communities and land cover within the Project Area. Project impacts to Riparian/Riverine Vegetation Communities are shown in Figure 8.

Table 6: Impacts to Riparian/Riverine Habitat within BSA

Vegetation Community	Total Area within BSA	Project Effects	
		Temporary Impacts	Shade Impacts*
Non-Native Grassland	4.20	2.66	0.13
Disturbed Riparian Scrub	1.47	1.33	0
Riparian woodland	6.43	4.34	0.39
Disturbed Riparian Woodland	3.36	2.09	0.16
Existing Bridge	0.83	0.83	N/A
Open Water of SAR R4	0.79	0.49	0.06
Total	**17.08**	**11.74**	**0.74**

Source: Compiled by Dokken Engineering, March 2018.
*Shade Impacts are determined by areas that will receive less than 6 hours of sun light.

The Proposed Project has been designed to minimize temporary impacts to sensitive habitats to the maximum extent practicable. Prior to construction, regulatory permits will be obtained from USACE, CDFW, and RWQCB.

Additionally, in accordance with the WRMSHCP requirements, if project's cannot avoid impacts to riparian/riverine areas, an MSHCP Consistency Report and Determination of Biological Equivalent or Superior Preservation (DBESP) Report must be prepared to, 1) identify impacts to covered species and, 2) develop appropriate mitigation to offset any project impacts to covered species. Because the Project cannot avoid all effects to riparian/riverine areas, a MSHCP Consistency Report and DBESP Report was prepared as required to mitigate for any effects (see Appendix D. WRMSHCP Consistency Analysis and Appendix E. Determination of Biologically Superior or Equivalent Preservation). The DBESP will ensure replacement of any lost functions and values of habitat as it relates to covered species (including the least Bell's vireo and Santa Ana sucker). In addition to all measures specified in the regulatory permits, Mitigation Measures BIO-1 through BIO-4 will be incorporated into the design to minimize impacts to less than significant to jurisdictional waters and associated sensitive habitats or regional water quality.

c) **Less than Significant with Mitigation Incorporated.** The Proposed Project will not result in substantial adverse effect on state or federally protected wetlands. The Proposed

Project would result in temporary impacts to jurisdictional waters of the U.S., State which includes associated protected riparian/riverine habitats. CDFW will be asserting jurisdiction between the toe of the levees of the Santa Ana River including associated riparian woodland, disturbed riparian scrub and associated disturbed riparian habitats. Temporary effects include temporary construction easements, temporary equipment access areas and temporary staging areas. Construction of the Proposed Project will temporarily impact 2.88 acres of Water of the U.S. and 12.48 acres waters of the State (see Figure 9. Project Impacts to Waters of the U.S. and State). Temporary impacts will be re-contoured and re-vegetated to preconstruction conditions. New shade from the new bridge structure is considered a temporary impact to Waters of the U.S.

The Proposed Project will minimize impacts to jurisdictional waters and riparian/riverine habitat to the greatest extent practicable by implementing avoidance and minimization measures, BMPs, and by complying with all permit conditions specified by regulatory agencies during the permitting phase of the Proposed Project. The Western Riverside County MSHCP is designed to mitigate for effects to covered species and habitat on a regional level. The Project is a covered Project in the Western Riverside County MSHCP and will be adhering to all Western Riverside County MSHCP required measures. As a result, the Project is not anticipated to have significant impacts to jurisdictional waters and MSHCP riparian/riverine habitat.

Project Area

Temporary Impacts (10.91 acres)

Non-Native Grassland (2.66 acres)

Disturbed Riparian Scrub (1.33 acres)

Riparian Woodland (4.34 acres)

Disturbed Riparian Woodland (2.09 acres)

Open Water in Santa Ana River Reach 4 (0.49 acres)

Existing Bridge (0.83 acres)

Existing Bridge (0.83 acres)

Shade Impacts (0.74 acres)

Non-Native Grassland (0.13)

Riparian Woodland (0.39)

Disturbed Riparian Woodland (0.16)

Santa Ana River Reach 4 (0.06)

Single Box Culvert Location

Market St

60

60

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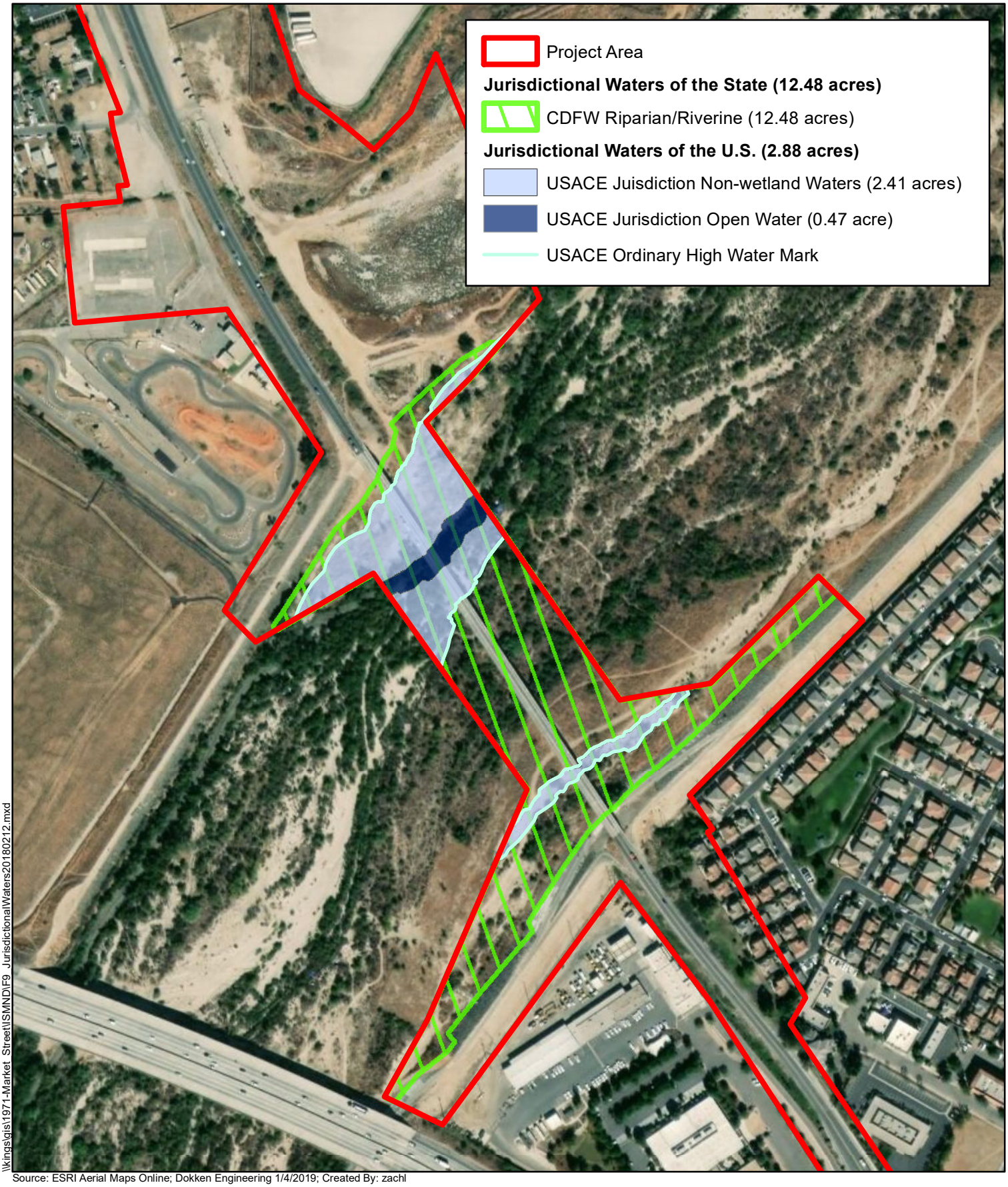
Source: ESRI World Street Maps Online; Dokken Engineering 1/16/2019; Created By: zachl

0 250 500 750 1,000 Feet

FIGURE 8
Temporary Impacts to Riparian/Riverine Vegetation Communities

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California



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Source: ESRI Aerial Maps Online; Dokken Engineering 1/4/2019; Created By: zachl

0 250 500 750 1,000 Feet

FIGURE 9
Project Impacts to Waters of the U.S. and State

Market Street Bridge Replacement Project
County of Riverside, California

d) **Less than Significant with Mitigation Incorporated.** The BSA contains the SAR R4 open water channel and the associated river wash. This area falls within an area categorized by the Western Riverside County MSHCP as an Existing core A Area and a wildlife corridor (Figure 7). The Core A Area is a southwest-to-northeast trending swath of land composed largely of Public/Quasi-Public Lands owned by a variety of entities, but it also contains a small number of privately-owned lands. Core A Area also functions as a Linkage, connecting Orange County to the west with San Bernardino County to the north. Existing Core A is connected to Existing Core B (Cleveland National Forest) via both and upland and a riparian connection. Core A is constrained on all sides by existing urban development and agricultural use. Planned land uses surrounding Core A consists largely of high impact land uses, such as, city and community development (Western Riverside County MSHCP 2003). Therefore, high quality riparian habitat within Core A Areas and along the edges will be maintained for Western Riverside County MSHCP protected species. Guidelines pertaining to Urban/Wildlands Interface for the management of edge factors presented in Section 6.1 and 7.5.2 of the Western Riverside County MSHCP will be incorporated to the Project's design. Maintenance of existing floodplain processes and water quality along the SAR R4 is also important to Santa Ana River woollystar. Management entities in existing Core A include: the County of Riverside Parks and Open Space District, U.S. Army Corps of Engineers, Orange County Water District, and California Department of Parks and Recreation.

The major regional wildlife conservation habitat areas (east to west) include: Rancho Jurupa Co. Park/Rubidoux Nature Center, located 3.5 miles from BSA; DeAnza Narrows Regional Park, approximately 4.1 miles from the BSA; Hidden Valley Wildlife Area, located 8.6 miles from BSA; Lake Norconian approximately 12.5 miles from the BSA; and Prado Basin located 17 miles from the BSA. The dominant land use within the BSA and in the surrounding area is categorized as medium-dense residential and heavy-industrial use. The Proposed Project's bridge replacement activities are not anticipated to permanently impact any local wildlife or migration corridors.

Fish Passage issues
The Santa Ana Sucker (*Catostomus santaanae*) has been identified as present within the Upper Santa Ana River Watershed and has potential to occur within the Proposed Project Area. Additionally, USFWS-designated critical habitat for the species is present within the BSA. The Santa Ana Sucker is listed as a threatened species under Federal legislation and is considered a Species of Special Concern in CDFW (Moyle 2002). The species is currently being evaluated for the Upper Santa Ana River Habitat Conservation Plan (IFC International 2014). The Proposed Project will temporary disturb Santa Ana sucker habitat; however, the use of avoidance and minimization measures, BMPs, and by compliance with all permit conditions specified by regulatory agencies during the permitting phase of the Proposed Project will minimize impacts to Santa Ana sucker to the greatest extent practicable. Prior to construction, regulatory permits will be obtained from USACE, CDFW, and RWQCB. In addition to all measures specified in these permits, the Mitigation Measures BIO-13 through BIO-19 will be incorporated into the design to avoid and minimize construction impacts to the Santa Ana sucker and its critical habitat within the BSA.

e) **No Impact**. The project is not anticipated to conflict with any local policies or ordinances protecting biological resources within the project area. Additionally, the Project is a covered Project in the Western Riverside County MSHCP and will be adhering to all Western Riverside County MSHCP required measures.

f) **Less than Significant.** The Proposed Project is located within the Western Riverside Multiple Species Habitat Conservation Plan (Western Riverside County MSHCP) and is considered a Western Riverside County MSHCP Covered Activity. A majority of the BSA is located within Western Riverside County MSHCP Public/Quasi Public (PQP) Lands and a small portion is located within private lands. The Project may need temporary construction easements within adjacent Public/Quasi Public (PQP) Lands. The BSA is also in a Narrow Endemic Plant Species Survey Area (NEPSSA), Burrowing Owl Survey Area, the Criteria Species Survey Area, Western Riverside County MSHCP Core A Area which provides important Core Linkages and Wildlife Corridors/Crossings. However, the BSA is not within a designated Western Riverside County MSHCP Criteria Cell or Reserve Assembly areas.

The Project will comply with the Western Riverside County MSHCP as well as other state and local environmental regulations. An MSHCP Consistency Report has been prepared for the project to further ensure consistency with the plan. Avoidance measures will be implemented to ensure no take of native birds or their nests would occur during construction. In addition, applicable Best Management Practices (BMPs) and Construction Guidelines from Appendix C of the Western Riverside County MSHCP, Volume I, will be implemented. Impacts would be reduced to less than significant.

Avoidance, Minimization, and/or Mitigation Measures

Waters and Associated Sensitive Habitats

BIO-1: Construction personnel would attend biological awareness training prior to working within the Project Area. The biological awareness training would include a description of special status species and habitats and identify mitigation measures that must be complied with.

BIO-2: Prior to the start of construction activities, the Project limits in proximity to riparian/riverine habitats will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters or any other biologically sensitive resources detected required during pre-construction surveys. The Project biologist throughout construction will periodically inspect the ESA to ensure sensitive locations remain undisturbed.

BIO-3: The County will re-contour the SAR R4 river bottom and adjacent lands that encounter temporary impacts to pre-construction conditions.

BIO-4: Compensatory mitigation for riparian/riverine areas will occur such that the project will be equivalent or superior to existing conditions. The identification of proposed compensatory mitigation areas shall be coordinated with representatives of the Riverside County Flood Control and Water Conservation District. On-site and off-site mitigation shall be provided based on the following:

- 1.48 acres. To help off-set the temporal loss of riparian vegetation due to 0.74 acres of shade impacts, payment at a 2:1 ratio to the Santa Ana River Watershed in-lieu fee program will be made. This fee will be paid following completion of the NEPA/CEQA environmental documents, rather than prior to construction. If pre-project mitigation is ultimately infeasible, coordination of alternative mitigation strategies shall be conducted with the wildlife agencies.

- 16.43 acres. To help off-set the temporal loss of riparian vegetation through temporary impacts to 12.48 acres of riverine/riparian at a 1.25:1 ratio and temporary impacts to 0.83 acres currently occupied by the existing bridge at a 1:1 ratio, implementation of a 5-year Invasive Species Removal Program for 16.43 acres within the Santa Ana River will occur. The locations for the invasive species removal will include the project site and additional sites shall be coordinated with the Riverside County Flood Control District and Water Conservation District. It is anticipated that each year, there will be a focus on a different 16.43 acres within the Santa Ana River depending upon the identified needs at that time. Additionally, it is anticipated that control efforts each year will involve multiple removal/control efforts. Prior to construction, an Invasive Species Removal Plan will be prepared and will be submitted to the WRMSHCP agencies, including the Western Riverside County Regional Conservation Authority, U.S. Fish & Wildlife Service, and the California Department of Fish and Wildlife, for review and approval.

Santa Ana River Woollystar

BIO-5: Focused surveys shall be conducted to identify locations of Santa Ana River woollystar in the months of June and July preceding vegetation clearing or other grading activities.

BIO-6: If it is not feasible to avoid effects to the Santa Ana River woollystar within the Public/ Quasi-Public Lands, seed shall be collected during the summer and fall prior to vegetation clearing or other grading activities. Seed shall be collected once the plants have matured and seeds senesce. Additionally, soil shall be collected in a one-foot radius to a depth of one-inch around each plant. In the event effects to the Santa Ana River woollystar within Public/Quasi-Public lands are avoided Mitigation Measure BIO-7 shall not be required.

BIO-7: If it is determined that seed collection is required (refer to Mitigation Measure BIO-15), half of the collected seed and soil will be dispersed outside of the project footprint subsequent to seed collection and the other half of the collected seed and soil will be retained by a seed collection company (such as S&S Seed) for site restoration following project completion. Prior to seed dispersal, the location of the seed dispersal and revegetation activities shall be coordinated with representatives of the Riverside County Flood Control and Water Conservation District.

Least Bell's Vireo and Sensitive Avian Species

BIO-8: Removal of riparian vegetation will occur prior to construction and between September 1st and February 14th to avoid least Bell's vireo breeding season, as well as the general breeding season for other nesting birds. If vegetation remove must occur during the breeding season, a qualified biologist(s) will conduct a pre-construction survey for least Bell's Vireo and other migratory bird species within three days of the start of construction from February 15th through August 31st. Any active nests identified within the Project Area or within 300-feet of the Proposed Project Area may be marked with a 300-foot buffer, and the buffer area may need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. Any buffer smaller then 300-feet must be approved by qualified regulatory biologists prior to working within the buffer.

BIO-9: A qualified project biologist shall conduct pre-construction, take-avoidance surveys for burrowing owls no earlier than 14 days prior to ground-disturbing activities within the construction area, or if time lapses between project activities for 14 days or more,

subsequent pre-construction avoidance surveys, including, but not limited to an additional survey within 24 hours of ground-disturbing activities shall be conducted. Focused burrowing owl surveys shall be conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 Staff Report; CDFG 2012), with the exception of the survey buffers, which follows the California Burrowing Owl Consortium (1993). Surveys shall be conducted by walking 20-meter transects. Pre-construction surveys shall be conducted within a reasonable buffer around the area, generally 150 meters (492 feet). If burrowing owl, including any active burrowing owl burrows, are not found during the pre-construction survey, no further action is required.

If pre-construction focused burrowing owl surveys determine that burrowing owls occupy the project area, a tiered approach referred to as an Avoidance and Relocation Strategy shall be implemented to avoid burrowing owls, relocate burrowing owls, and prevent recolonization of areas (where needed, such as construction and/or substation areas) by burrowing owls. These methods generally adhere to the recommendations contained in the *Staff Report on Burrowing Owl Mitigation* currently used by CDFW to guide burrowing owl mitigation measures.

If burrowing owls occupy the project area, including within the 150-meter buffer, the qualified project biologist will evaluate each occupied burrow to determine whether the proposed project is likely to directly impact or substantially indirectly impact the burrow such that injury or death of a burrowing owl could occur. Avoidance buffers can be implemented to avoid direct and substantial indirect impacts to owl burrows and individuals. A substantial indirect impact would be a situation where even though the burrow is not directly impacted during construction, the construction activities could potentially cause injury or mortality of owls, including from collisions with nearby construction equipment, vehicles, fences, or walls. The project biologist will have discretion in determining whether an indirect impact is substantial.

Avoidance buffers shall be strictly required for occupied nest burrows so that nesting activities are not disturbed and nesting pairs have the opportunity to rear and successfully fledge young. Per the guidelines outlined by the *Staff Report on Burrowing Owl Mitigation*, a standard minimum avoidance buffer ranging between 200 meters (656 feet) and 500 meters (1,640 feet) will be initially applied to occupied nest sites between April 1 and October 15. Burrows will be monitored by the project biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW.

If avoidance of occupied burrowing owl burrows is not possible, and removal of occupied burrows is unavoidable, passive relocation methods are to be used by the biological monitors to move the owls out of the impact zone. One-way doors are to be installed in the entrances of occupied burrows. This will allow any animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. A period of at least one week is required after the installation of one-way doors relocation effort to allow the birds to leave the impacted area before construction can begin. Each burrow must be scoped to ensure no burrowing owls remain within the burrows before excavation can begin. The burrows should then be excavated by hand and filled in to prevent reuse. Any potentially suitable unoccupied burrows in the path of construction must also be scoped and collapsed prior to the installation of the one-way doors to prevent the burrowing owls from relocating within the project area.

The removal of active burrows on- site requires construction of new burrows or the enhancement of existing unsuitable burrows (i.e., enlargement or clearing of debris) at least one week prior to passive relocation efforts. Burrow mitigation will occur at a ratio of 2:1 at least 50 m (164 ft) from the impacted area but within 80 m (262 ft) of the current burrows. Burrows must be constructed as part of the above-described relocation efforts and be completed before relocation efforts begin.

Compensatory burrow construction should occur at least 7 days prior to passive owl relocation and should be located at least 50 m (164 ft) from the project area and literature suggests that burrowing owls are more likely to voluntarily relocate to artificial burrows installed within 75 m (246 ft) of their old burrows (Trulio 1995). Burrowing owls are semi-colonial and have a preference for sites with multiple burrow options and other resident burrowing owls in the vicinity. Artificial burrows should be installed in pairs 165 to 250 ft away from the currently occupied burrows with approximately 30 ft between paired burrows. The habitat around the artificial burrow sites is very similar to the area around the natal burrows and is expected to provide the same quality of foraging habitat. The exact location of each burrow will be determined in the field to ensure the burrows are placed in the best possible micro-topography to prevent flooding and allow resident owls optimal foraging opportunities and safety from predators.

Artificial burrows should be constructed of plastic parts to increase longevity and reduce construction time. Burrow design should be consistent with the recommendations of the *Global Owl Project: Users Guide to Installation of Artificial Burrows for Burrowing Owls* (Johnson 2010). The main nest chamber of each burrow should consist of half a 55 gallon plastic drum or similar with one or two access tunnels. The floor of the nest chamber should be approximately 3 ft below ground level. The access tunnels should be constructed of either 4 or 6 inch diameter flexible drain pipe. If 6 inch diameter pipe is selected, a 2 inch strip along the bottom of the pipe should be removed to provide a level walking surface for resident owls. Access tunnels should be approximately 6 to 10 ft long and be installed with a vertical shallow s-bend to prevent water from flooding the nest chamber. Each access tunnel should also be installed with at horizontal bend to provide the necessary darkness within the nest chamber and should gently slope down along the entire length of the tunnel. Nest entrances should be designed to provide protection from predation. The entrances to artificial burrows should be constructed of 6 inch diameter pipe tapering to a 4 inch diameter pipe approximately 12 inches from the entrance or should include a 4 inch diameter predator exclusion collar at this location instead. This will allow multiple owls to enter the tunnels quickly while still excluding common mammalian predators like skunks. Entrances should also be “armored” by surrounding them with rocks or concrete pieces and sleeved in hard PVC pipe to discourage excavation by coyotes or domestic dogs.

Short perches (< 2 ft) should also be installed in front of each artificial burrow. This will provide an area for resident owls to watch for predators and forage. Tall perches are unsuitable as they encourage other avian species to utilize them. Perches can be a short post or be made from locally sourced dead branches. Perches should always be located in front of a burrow entrance to allow resident owls to check for predators before leaving the burrow.

The status of burrowing owls surrounding the project area will be monitored periodically during construction. The focus of the periodic monitoring will be to ensure that no burrowing owls have relocated to the project area and that burrowing owls in adjacent

natural and artificial burrows are not being affected by project activities. If it is determined that resident owls are being impacted, shelter in place strategies such as building a hay-bale screen between the burrows and construction may be employed.

The project area and the artificial burrows will be monitored during the breeding season the year after passive relocation efforts take place. The focus of the monitoring effort will be to determine if burrow relocation was successful at the site. Artificial burrows and any potentially occupied burrows should be continuously observed for one hour from a distance of approximately 30 m (100 ft) so as not to intimidate burrowing owls from emerging or returning to the burrow. Alternately, the entrance of each observed burrow should be swept clean and checked after 24 hours for evidence of burrowing owl activity.

If pile driving activities occur during nesting season, the following measures would be implemented:

BIO-10: The Project would sponsor placement of two cowbird traps for each nesting season that pile driving activities occur. This measure would improve the productivity of least Bell's vireo during nesting season, due to the potential loss in temporary reproductive output for any pile driving related noise effects during nesting season.

BIO-11: If an active least Bell's vireo nest is identified within 1,000 linear feet of the Project impact area and pile driving activities are occurring during the least Bell's vireo nesting season (March 15 through July 15), a biological monitor will conduct daily site visits to document how pile driving activities affect nesting least Bell's vireo. This data collection will be utilized by USFWS to provide guidance for future Projects and will not impose additional restrictions on this Project.

If the Mission Boulevard Bridge Replacement at the Santa Ana River Project and the Market Street Rehabilitation Project are constructed at the same time, RCA and the wildlife agencies recommended the County hire the same biological monitor to conduct least Bell's vireo monitoring. By utilizing the same biological monitor for both Projects, it will ensure that methods are consistent, and the results are holistically analyzed. Additionally, if the Project at Mission Boulevard should be constructed first, the Project at Market Street should coordinate with RCA and the appropriate wildlife agencies to develop the monitoring strategy based on information gathered while monitoring during pile driving activities at the Project at Mission Boulevard. The Proposed Project reserves the right to revise least Bell's vireo monitoring plans based on the findings from Mission Boulevard Bridge Replacement at the Santa Ana River Project.

BIO-12: During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. To minimize the construction-generated noise, abatement measures in standard Specification 14-8.02, "Noise Control" and SSP 14-8.02 must be followed:

- Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- Equip an internal combustion engine with the manufacturer recommended muffler.

- Do not operate an internal combustion engine on the job site without the appropriate muffler.

Santa Ana Sucker

BIO-13: Prior to beginning any pile driving activities, the contractor will implement "pre-noise" and "pre-vibration" precautions and allow equipment with operations of ≥ 6,000 RPM to idle for 5-10 minutes to permit Santa Ana suckers in the vicinity the opportunity to vacate the Project Area.

BIO-14: Equipment used that causes vibration from movement or operation (e.g. operations ≥ 6,000 RPM) should be avoided for periods of use longer than 10 minutes. The engine controls will be used so that only during high demand would the operator need to "rev" the engine to conduct the work. When in water, this engine control method will be used when possible. Work conducted beyond 30 -ft. of the river edge, no engine RPM control would be necessary, based upon studies by Laikre 2010; Hawkins and Popper 2014.

BIO-15: In-water work areas will be isolated from the rest of the water body and surrounding riparian areas and flows will be diverted using appropriate features such as filtration fencing, water dams, cofferdams, boulders and cobble. The intent of this MM is to avoid or minimize turbidity impacts on fish and habitat downstream of the construction area and to exclude fish from being entrained, trapped or isolated from the river.

BIO-16: The Project will not inhibit passage of any listed fish species, regardless of life stage, during or following completion of construction of the Project. When feasible, a bypass system or diversion will be installed during construction to permit both upstream and downstream passage of listed fish. The intent of this MM is to avoid interfering with the migration, rearing activities and natural dispersal of suckers and chub.

BIO-17: If water diversion activities are necessary, an approved, qualified biologist will conduct a preliminary underwater survey of the affected area noting habitat and any fish present prior to any water diversion. Water diversions will be conducted outside of the spawning season for the species (approximately February 15 to July 31) to the greatest extent feasible. If the Santa Ana sucker is found to be present, a relocation program will be implemented. The preconstruction survey and relocation program will require approval from the USFWS.

BIO-18: If Santa Ana sucker are found to be present, exclusion nets will be placed around the work area. Once diversion of flow is complete, exclusion nets will be removed. Seining will then be conducted inside the exclusion area to remove and relocate Santa Ana Sucker prior to the commencement of diversion activities. As the diversion of flow is taking place, the biologist(s) will patrol the dewatering area in order to capture stranded fish. A combination of seining, dip netting, and hand capture will be utilized.

All captured Santa Ana sucker will be placed into coolers filled with river water. Fish will remain in coolers for the shortest time necessary. Air pumps will be used to maintain oxygenated water supply. The coolers will be kept shaded at all times. The water temperature in the coolers and condition of captured Santa Ana sucker will be closely monitored. Ice (or frozen water bottles) will be used, as necessary, to maintain cool water

(similar to ambient or <85 degrees Fahrenheit). Any Santa Ana suckers removed from the site will be relocated upstream or downstream of the Project Area, as determined appropriate by the qualified biologist, in consultation with the USFWS. A summary report will be provided to the USFWS for all diversions resulting in relocation of Santa Ana sucker.

If capture and relocation of Santa Ana sucker is necessary, it will be achieved through one or more of the following methods: the use of fine mesh [2–4 mm (0.08–0.16 in)], knotless seine nets; fine mesh [4–6 mm (0.16– 0.24 in] knotless hoop nets, modified hoop nets, or similar traps; or dip nets of 0.5 mm (0.20 in) or finer mesh for survey of larval Santa Ana sucker. The survey methods will be selected to minimize the potential injury or mortality to Santa Ana suckers and potential disturbance or damage to breeding areas. If seines are used, particular care shall be taken to avoid incidental injury or mortality to Santa Ana sucker that may be caught and suffocated in algal mats or sand. Care should also be taken to keep Santa Ana sucker in water as much as possible. Larval fishes should be kept submerged in a dip net until species is identified and released at the point of capture. Use of non-conventional sampling gear will first be approved by the USFWS.

Prior to activities that may involve handling Santa Ana sucker, the qualified biologist will ensure that all participants' hands are free of sunscreen, lotion, or insect repellent.

The qualified biologist will submit a brief report to the USFWS identifying the number of any native fish species that were relocated and any other measures that were taken to minimize impacts to Santa Ana sucker.

BIO-19: If water diversion is not required, highly visible barriers (such as ESA fencing) will be installed around the low-flow channel, and other areas of running water, and designated as an ESA to be avoided. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas of flowing water.

<u>Western Yellow Bat</u>

BIO-20: If determined to be necessary, a humane eviction and exclusion of bats shall be performed under the guidance of a qualified bat biologist and the CDFW prior to bridge construction and especially bridge demolition activities.

BIO-21: Bridge demolition will occur outside of maternity season (April 15th - August 31st) to the greatest extent possible.

BIO-22: During nighttime work for Project construction, night lighting shall be used only in the area actively being worked on and focused on the direct area of work. Additional, any night lighting shall be directed away from the culvert entrance to avoid affecting any roosting bats.

BIO-23: Airspace access to and from the roost features of the bridge structure shall not be obstructed except in direct work areas.

BIO-24: The removal of mature trees and snags should be minimized to the greatest extent practicable.

BIO-25: Trimming or removal of any mature trees (including untrimmed palm trees) and snags during the maternity season (April 1–August 31) shall be avoided to prevent "take" of nonvolant (flightless) young; this period approximately coincides with bird nesting season (typically February 1st–August 31st). If removal of mature trees (including trimming of palm fronds or removal of palm trees) during the bat maternity/bird nesting season is necessary for Project construction, all mature trees to be removed that have also been identified as containing suitable bat roosting habitat should be surveyed at night prior to removal. Any trees confirmed during those surveys as housing bat maternity colonies and/or special status bats will be avoided until the end of the maternity season.

BIO-26: Mature trees to be removed as part of the Project shall be more closely evaluated by a qualified bat biologist for their potential to support roosting bats. Trees that are identified as suitable bat roost sites shall be removed using a two-step process that occurs over a two-day period. On Day one, branches and limbs that do not contain crevices or cavities shall be removed using hand tools or chainsaws. The goal is to create a disturbance sufficient to cause any bats roosting in the tree to leave that night and not return, but not at a level of intensity that will cause bats to fly out of the tree during the disturbance itself (e.g. during the daytime, when leaving the roost will likely result in predation). On Day two, the remainder of the tree may be removed.

BIO-27: Idling or operation of engines within 100 -ft. of the culvert entrance, which is located approximately 200 feet due north of the existing bridge, shall be avoided.

Invasive Species

BIO-28: Eradication procedures (e.g., spraying and/or hand weeding) will be decided should an infestation occur; the use of herbicides will be prohibited within waters and near native vegetation, except as specifically authorized and monitored by the County- designated Project Biologist.

BIO-29: All woody invasive species (e.g., tamarisk) and identified Arundo patches (0.11 acre) will be removed from the Project limits.

Local Wildlife Species

BIO-30: If any wildlife is encountered during the course of construction, said wildlife must be allowed to leave the construction area unharmed.

BIO-31: Plastic mono-filament netting (erosion control matting) or similar material that could trap wildlife must not be used. Acceptable substitutes include jute, coconut coir matting or tackified hydroseeding compounds.

BIO-32: To allow subterranean wildlife enough time to escape initial clearing and grubbing activities, equipment used during initial clearing and grubbing must be operated at speeds no greater than 3 miles per hour.

BIO-33: The contractor must dispose of all food-related trash in closed containers, and must remove it from the Project Area each day during construction. Construction personnel must not feed or attract wildlife to the Project Area.

V. 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 pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Source(s): Historic Property Survey Report, Market Street Bridge Replacement Project (2018).

Findings of Fact:

Regulatory Setting

The CEQA Guidelines Section 15064.5(a) and the Public Resources Code (PRC) 5024(a)(b) and (d) require consideration of potential project impacts to "unique" archaeological sites that do not qualify as historical resources. The statutory requirements for unique archaeological sites that do not qualify as historical resources are established in PRC Section 21083.2. These two PRC sections operate independently to ensure that significant potential impacts on historical and archaeological resources are considered as part of a CEQA project's environmental analysis. Historical resources, as defined in the CEQA regulations, include:

1) Cultural resources listed in or eligible for listing in the California Register of Historical Resources (California Register);
2) Cultural resources included in a local register of historical resources;
3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in one of several historic themes important to California history and development.

Under CEQA, a project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of a historical resource that conveys its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g). PRC Section 5024 also requires state agencies to identify and protect state-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocation, or demolishing state-owned historical resources

that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks. Also, CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

Environmental Consequences

a) **No Impact.** The Area of Potential Effect (APE) was defined to include planned construction activity, proposed staging and storage areas, permanent right-of-way acquisition, temporary construction easements, and a 20-foot wide buffer where possible to include potential indirect effects that may develop as a result of this undertaking. The APE consists of approximately 55.0 acres. The vertical extent of the APE ranges from 3 feet to 70 feet below ground surface (bgs) and up to 25 feet above ground surface (ags), depending on the construction needs of different components of the project. (Figure 10. APE Limits).

Efforts to identify potential historical resources in the APE included background research, a search of site records and survey reports on file at the Eastern Information Center (EIC), coordination with Native American representatives, and a pedestrian ground surface inventory. The record search conducted at the EIC on April 4, 2017, revealed that 39 surveys in the general area recorded 55 historic-era resources within the 1-mile search radius, of which 52 were structures, one was a historic district, and two other historic-era resources, and all were located outside of the APE. The entire APE has experienced extensive modification due to the channelization of the Santa Ana River, flooding events, as well as residential and commercial development outside the Santa Ana River channel. Such development makes the potential to find historic deposits within the APE low.

An archaeological field survey was conducted by archaeologists Brian S. Marks, Ph.D. and Althea Asaro on October 20, 2017 for the purpose of identifying and recording archaeological resources. No cultural resources or historic-era structures were identified as a result of the field survey.

Therefore, there are no historical resources as defined by §15064.5 located within the project area. No impact would occur.

b) **Less Than Significant with Mitigation Incorporated**.

Current knowledge of the geologic history of the region provides a strong basis for assessing the potential for discovering buried archaeological sites. The APE contains alluvium, deposited as the Santa Ana River flows beneath the bridge. The presence of alluvium suggests the project area is located within a depositional environment which has the potential to bury archaeological sites, should they be present. The Santa Ana River is and was an important resource to human occupation, even in prehistoric times. However, while the Santa Ana River has a low flow during the majority of the year, it is prone to high flows and flash floods during the wet winter months. These flash floods would have redistributed archaeological sites that were present on the surface. Along with the disturbance associated with the construction of the Pacific Electric Railroad, Market Street, the levees, evidence of vegetation removal, and channel maintenance, the APE has been highly disturbed in the last few decades by residential, commercial, and transportation corridor development, including installation of storm water, sewer, and other subsurface

utilities, resulting in a low potential for archaeological sites to be present within the APE. Additionally, the Santa Ana River is a braided river and frequently changes course within its channel. Historic Aerial photographs show the river has flowed along both banks and several different courses since 1939.

Efforts to identify potential archaeological resources in the APE were conducted similarly as for historic resources and included background research, a search of site records and survey reports on file at the Eastern Information Center (EIC), coordination with Native American representatives, and a pedestrian ground surface inventory. The record search conducted at the EIC on April 4, 2017, revealed that 39 surveys in the general area recorded no prehistoric cultural resources within the 1-mile search radius of the APE, suggesting the potential for encountering intact prehistoric archaeological sites low. The entire APE has experienced extensive modification due to the channelization of the Santa Ana River, flooding events, as well as residential and commercial development outside the Santa Ana River channel. Such development makes the potential to find archaeological deposits within the APE low.

On March 16, 2017, a letter requesting a Sacred Lands Search and a list of Native American individuals and organizations that may have knowledge of or concerns regarding cultural resources in the project area was sent to the Native American Heritage Commission (NAHC) in West Sacramento. On March 28, 2017, Gayle Totton (NAHC Associate Governmental Program Analyst) responded that a search of the Sacred Lands File was completed with negative results.

Native American individuals and organizations provided by the NAHC were consulted by Caltrans as mandated by NEPA to meet Section 106 requirements. Caltrans contacted 25 individuals representing 9 Native American groups in May 2017. Letters were followed up by email and telephone calls during June and September 2017. During consultation, only the Gabrielino/Tongva Indians of California Tribal Council requested to be contacted if any Native American cultural resources, including human remains, will be impacted by the project. Additional information regarding Native American consultation conducted for CEQA under AB 52 can be found in Section VI. Tribal Cultural Resources.

Based on the known geology of the area, consultation with the Native American tribes, and the evidence of disturbance in the area, the project has a low buried archaeological site potential.

With any project requiring ground disturbance, there is always the possibility that unmarked burials may be unearthed during construction. This impact is considered potentially significant. Implementation of Mitigation Measure CR-1 and CR-2 would reduce this impact to a less-than significant level.

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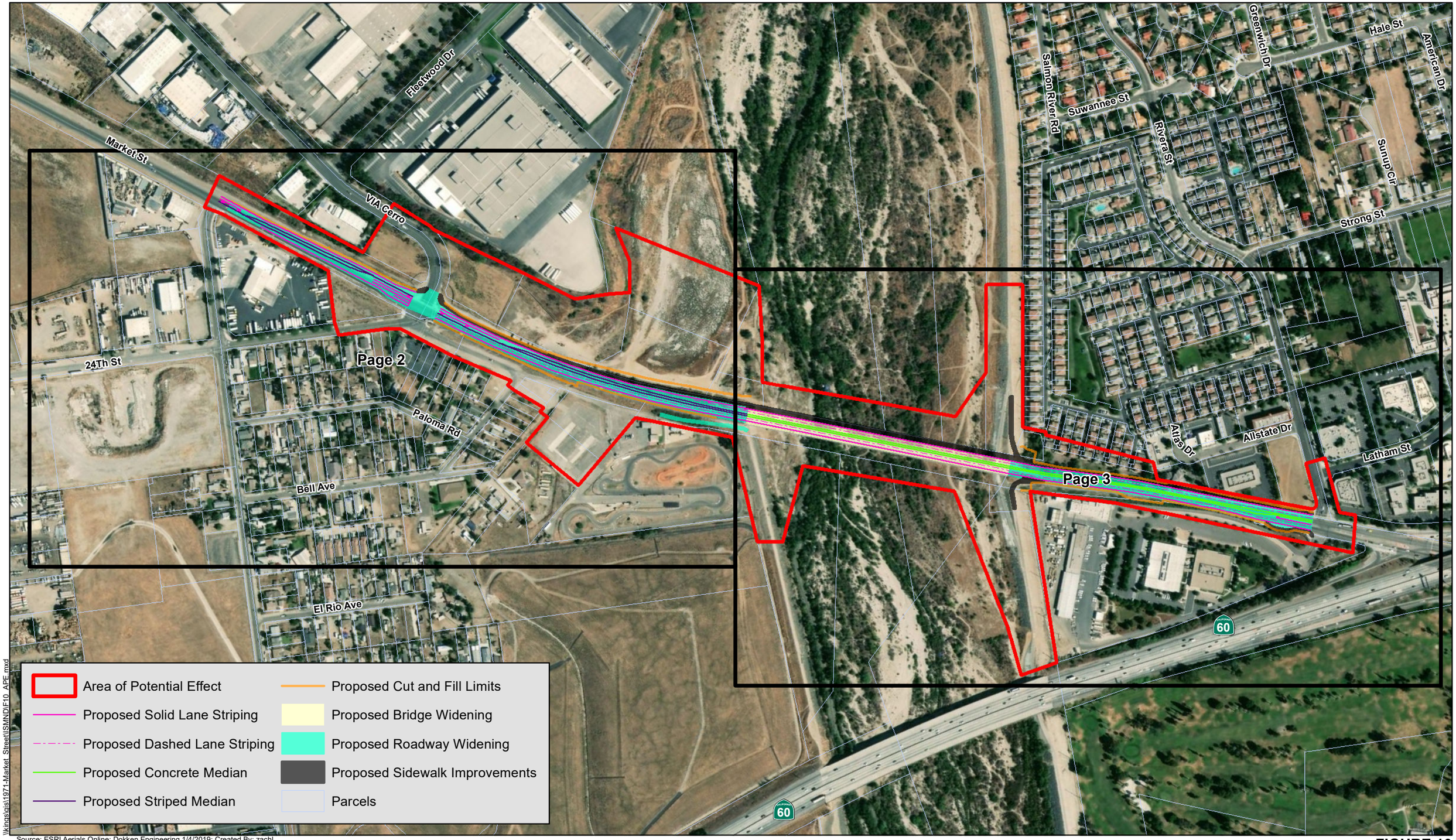


Source: ESRI Aerials Online; Dokken Engineering 1/4/2019; Created By: zachl

1 inch = 400 feet

0 500 1,000 1,500 2,000 Feet

FIGURE 10
Page 1 of 3
Area of Potential Effects

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

\\kingsgis\gis\1971-Market_Street\SMND\F10_APE.mxd

Source: ESRI Aerials Online; Dokken Engineering 1/4/2019; Created By: zachl

1 inch = 200 feet

0 250 500 750 1,000 Feet

FIGURE 10
Page 2 of 3
Area of Potential Effects

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

\\kingsgis\1971-Market Street\SMND\F10_APE.mxd

Source: ESRI Aerials Online; Dokken Engineering 1/4/2019; Created By: zachl

1 inch = 200 feet

0 250 500 750 1,000 Feet

FIGURE 10
Page 3 of 3
Area of Potential Effects

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

c) **Less Than Significant with Mitigation Incorporated.** No formal cemeteries or known burial sites are within or adjacent to the APE. Disturbance to human remains, including those interred outside of formal cemeteries, is not anticipated. Measure CR-2 would further avoid effects on human remains.

Avoidance, Minimization, and/or Mitigation Measures

CR-1: If a significant archaeological resource(s) or tribal cultural resource is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). An archaeologist, who meets the Secretary of Interior Standards for an archaeologist, shall assess the discovery, and if the discovery involves Native American resources a representative of the concerned tribe(s) shall be contracted to assess significance. The archaeologist, a representative of the appropriate Native American Tribe(s), and the Riverside County Transportation Department shall confer regarding mitigation of the discovered resource(s). Work shall not resume in the area until mitigation has been completed or it has been determined that the archaeological resource(s) is not significant.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of such identification. Further provisions of PRC 5097.98 are to be followed as applicable.

VI. 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.	☐	☒	☐	☐

Source(s): Historic Property Survey Report, Market Street Bridge Replacement Project (2018).

Findings of Fact:

Regulatory Background

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American tribes and consideration of tribal cultural resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to TCRs. CEQA now establishes that a "project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment" (PRC § 21084.2).

To help determine whether a project may have such an adverse effect, the PRC requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (PRC § 21080.3.1). Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed projects within their traditionally and culturally affiliated area. AB 52 stipulates that the Native American Heritage Commission (NAHC) shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated within the project area. If the tribe wishes to engage in

consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. Once the lead agency receives the tribe's request to consult, the lead agency must then begin the consultation process within 30 days. If a lead agency determines that a project may cause a substantial adverse change to TCRs, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act. TCRs are also exempt from disclosure. The term "tribal cultural resource" refers to sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources
- Included in a local register of historical resources as defined in subdivision (k) of California Public Resources Code (PRC) Section 5020.1
- A resource determined by a California lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of the PRC Section 5024.1.

Affected Environment

Consultation with Native American groups occurred during the Section 106 process required under NEPA through Caltrans and during the AB 52 process required under CEQA through the City of Jurupa Valley. This section discussion is focused on the consultation efforts conducted under AB 52.

TCR identification efforts were conducted to determine whether a TCR, as defined by PRC § 21074, would be impacted by the project. These efforts included background research, a search of archaeological site records and cultural survey reports on file at the East Information Center (EIC), literature and map review, a review of the Sacred Lands File by the NAHC, efforts to coordinate with Native American Tribal Governments, and a pedestrian field survey.

On May 9, 2017, and April 4, 2018, initial consultation letters were sent to the Native American individuals on the AB 52 list provided by the City of Jurupa Valley. Letters were sent to the following individuals and organizations:

- Pechanga Band of Mission Indians; Cultural Analyst Anna Hoover (May 9, 2017)
- Soboba Band of Luiseño Indians, Cultural Resources Department; Joseph Ontiveros (May 9, 2017)
- Torres-Martinez Desert Cahuilla Indians; Cultural Resources Manager, Michael Mirelez (May 9, 2017)
- San Manuel Band of Mission Indians, CRM Department; Director Lee Clauss (April 4, 2018)

The letters provided a summary of the project and requested information regarding comments or concerns the Native American community might have about the project and whether any

traditional cultural properties, TCRs, or other resources of significance would be affected by implementation of the project. The letters also stated that if the tribes would like to consult under AB 52, they would have to respond within 30 days, pursuant to PRC 21080.3.1(d). Only the Soboba Band of Luiseño Indians and San Manuel Band of Mission Indians responded within 30 days after the initial consultation letters were sent out.

Environmental Consequences

a-b) **Less Than Significant Impact with Mitigation Incorporated.** At this time, no traditional cultural properties or TCRs have been identified within the project area by the Native American community. During the AB52 consultation efforts, no request to consult was received from the Pechanga Band of Mission Indians or the Torres-Martinez Desert Cahuilla Indians; therefore, consultation under AB 52 is determined complete for those tribes; however, during the County of Riverside quarterly meeting with the Pechanga Band of Mission Indians on November 6, 2018 the Market Street Bridge Replacement Project was discussed. The tribe requested that language for inadvertent finds and human remains be included in the environmental document, which is captured in Measures CR-1 and CR-2. The Soboba Band of Luiseño Indians and San Manuel Band of Mission Indians requested the project's cultural documentation for review. During review of the cultural documentation, Caltrans contacted the Soboba Band of Luiseño Indians and San Manuel Band of Mission Indians as part of their obligations under Section 106, in which the tribes concurred they had no concerns and determined no further consultation was necessary. Formal letters to close out consultation under AB 52 were sent to the Soboba Band of Luiseño Indians and San Manuel Band of Mission Indians. Refer to Appendix F for a summary of consultation efforts with the Native American community under AB 52. Since Native American Consultation resulted in no known Tribal Cultural Resources within the APE, impacts to TCRs would be unlikely. Nevertheless, with any project requiring ground disturbance, there is always the possibility that unmarked burials may be unearthed during construction. No additional mitigation measures were received during the AB52 consultation that varied from those identified during the Section 106 process. Implementation of Mitigation Measures CR-1 and CR-2 would reduce this impact to a less-than significant level.

Avoidance, Minimization, and/or Mitigation Measures

See Measures CR-1 through CR-2 listed in Section V for Cultural Resources.

VII. ENERGY: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☒	☐	☐

Source(s): Market Street Bridge Replacement Project (2018), City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a) **Less Than Significant Impact with Mitigation Incorporated.** Neither construction nor operation of the proposed project will result in a potential significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. As discussed in Section IX for Greenhouse Gases, the on-site construction equipment for proposed project is anticipated to emit 2,304 metric tons of GHG during construction, less than 1% of the annual GHG emissions during construction within Riverside County. Construction activities, including demolition of the existing bridge, would require minimal electricity consumption which is not anticipated to have any adverse impact on available energy resources. It is not anticipated that the project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction.

During operation of the bridge and adjacent roadways, the main source of energy consumption will be associated with the traffic signals; however, the project would incorporate the use of energy-efficient lighting, such as LED traffic signals, per Measure CC-1. LED bulbs but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves also consume 10 percent of the electricity of traditional lights, which will also help reduce the project's energy consumption.

b) **Less Than Significant Impact with Mitigation Incorporated.** The project would not conflict with or obstruct any local plans, including the Riverside County Climate Action Plan and the Western Riverside County Council of Governments Subregional Climate Action Plan, for renewable energy or energy efficiency. The City of Jurupa Valley, the City of Riverside and Riverside County are committed to reducing energy consumption to be consistent with the Riverside County Climate Action Plan and the Western Riverside County Council of Governments Subregional Climate Action Plan, which outlines plans for renewable energy and energy efficiency as a means to reduce greenhouse gas emissions. As a result, the measure CC-1 will be included in the project be consistent with the local plan for energy efficiency.

Avoidance, Minimization, and/or Mitigation Measures

See Measure CC-1 listed in Section IX for Greenhouse Gas Emissions.

VIII. GEOLOGY, SOILS AND PALEONTOLOGICAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly 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 on- or off-site 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 direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a (i-iv) **Less Than Significant Impact**. The project would not expose people or structures to potential substantial adverse effects, involving rupture of a known fault, strong seismic ground shaking, seismic-related ground failure, or landslides. According to the Department of Conservation Seismic Hazard Zones Map for the Fontana Quadrangle, no fault zone crosses or occurs within the project area. The nearest fault line is the San Jacinto Fault approximately 6 miles northeast. Furthermore, design and construction in accordance with Caltrans' seismic design criteria will ensure that substantial impacts due to seismic forces

and displacements are avoided or minimized to the extent feasible. According to the City of Riverside General Plan and the City of Jurupa Valley General Plan, the project location falls within a Very High and Moderate Liquefaction Zone. However, with adherence to Caltrans' seismic design criteria and construction standards, impacts from ground shaking, liquefaction, landslides would be less than significant.

b) **Less Than Significant Impact with Mitigation Incorporated**. The National Resources Conservation Service (NRCS) identifies soils within the Proposed Project vicinity as Delhi fine sand (DaD2) with 2 to 15 % slopes, Dello loamy fine sands (DmA), poorly drained with 0 to 2 % slopes, wind eroded Metz loamy fine sand (MfA) with 0 to 2 % slopes, Riverwash (RsC), San Emigido fine sandy loam (SfA), deep with 0 to 2 % slopes, and Tujunga loamy sand (TuB) with 0 to 5 % slopes. Identified soil types DaD2, DmA, and TuB are alluvium- derived from granite, MfA is derived alluvium from sedimentary rock, SfA is residuum weathered from sedimentary rock and RsC is sandy/gravelly alluvium derived from mixed sources (NRCS 2013). The erodibility factor for this soil is K=0.24, indicating that it is moderately susceptible to detachment and may produce moderate runoff (NRCS 2017). Erosion due to surface runoff is not expected in paved and/or properly slope areas with controlled surface drainage facilities. Grading and earthwork during construction may result in erosion and sedimentation. Erosion and loss of top soil would be a less than significant impact with mitigation. This impact would be mitigated through implementation of the Stormwater Pollution Prevention Plan (SWPPP) which would incorporate erosion control methods as detailed in measure WQ-1 listed in Section XI for Hydrology and Water Quality.

c) **Less Than Significant Impact**. Topography of the project area is very flat within Santa Ana River, but the Jurupa and Box Springs Mountains are near the project area to the northwest and east, respectively and rise over 2200 feet from the valley floor within 4 miles of the project area. Soils within the project area are predominantly well- drained sandy loam derived from granite. Geology is comprised of alluvial fan deposits (loamy sands) on the edges of the project with riverwash sediments within the channel of the Santa Ana River. According to the City of Riverside General Plan and City of Jurupa Valley General Plan, the project area is defined as having a moderate to very high potential for liquefaction susceptibility. The Riverside County General Plan identifies the project area has a low to moderate potential for subsidence and liquefaction. However, with adherence to Caltrans' seismic design criteria and construction standards, impacts from on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse is not anticipated.

d) **No Impact**. Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils swell, the change in volume can exert significant pressures on loads that are placed on them, and can result in structural distress and/or damage. According to the City of Riverside General Plan, City of Jurupa Valley General Plan, and Riverside County General Plan, soils with high shrink swell potential do not occur near the project site. Therefore, soils at the proposed project site are anticipated to be non-expansive and no impacts are expected.

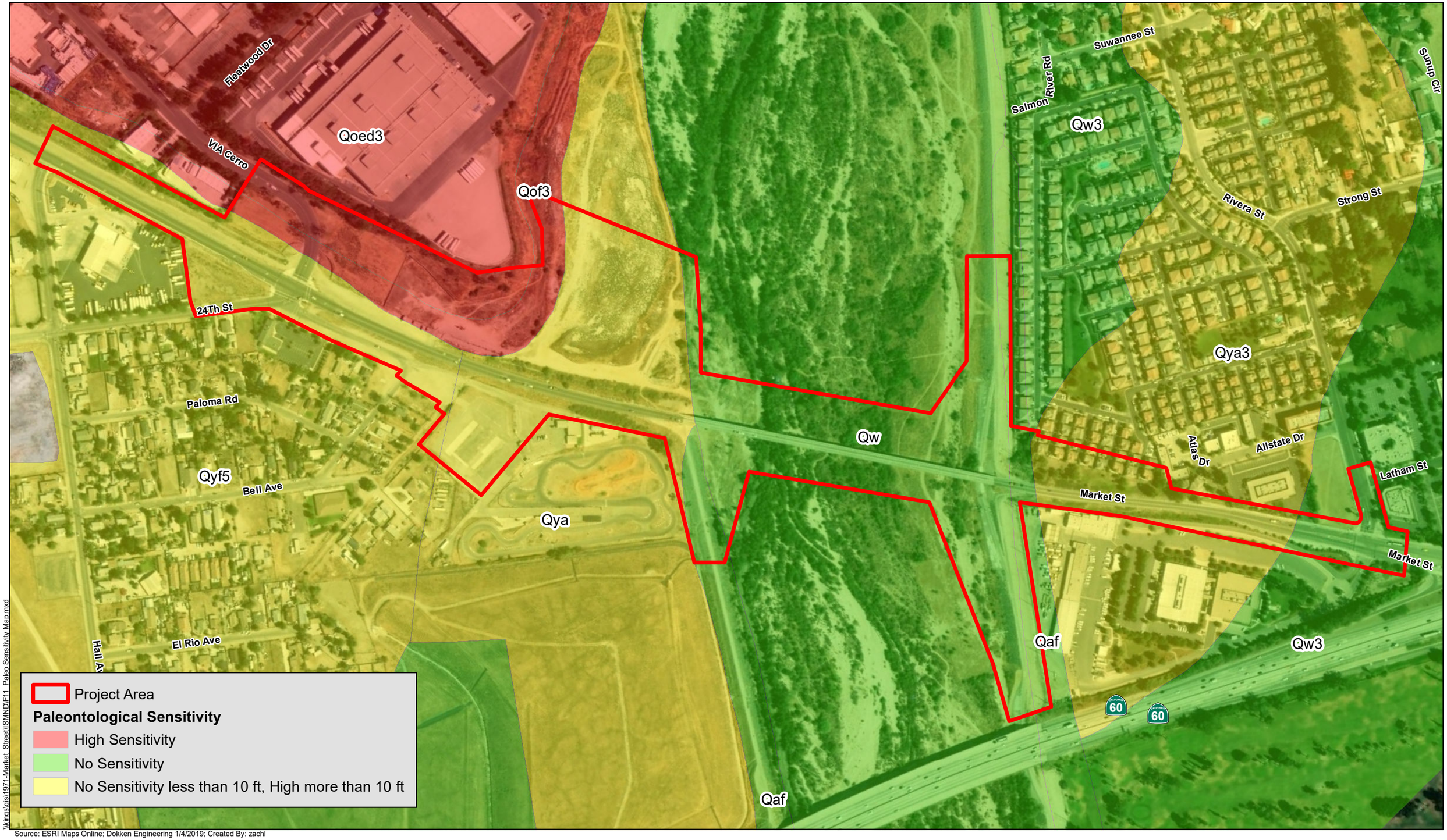
e) **No Impact.** The project does not include septic tanks or an alternative wastewater disposal system on the site.

f) **Less Than Significant.** Per the Paleontological Identification/Evaluation Report for the Market Street Bridge Replacement Project (January 2018), no known paleontological localities are present or recorded within the project site or within several miles in any

direction. Figure 11 shows potential areas of high paleontological sensitivity based on the soils and geological conditions that occur in the project vicinity. Most excavation would be shallow for the roadway and bridge and much of it would take place at previously disturbed parcels. Excavation is anticipated to be approximately 10 feet at the abutments and approximately 40 feet for the piles. No excavations are proposed within the high sensitivity areas shown in Figure 10 nor are any excavations exceeding 10 feet in depth proposed within the identified high risk portions below 10 feet. Therefore, impacts related to paleontological resources are anticipated to be Less than Significant.

Avoidance, Minimization, and/or Mitigation Measures

See Measure WQ-1 listed in Section XI for Hydrology and Water Quality.



\\kings\gis\1971-Market Street\SMND\F11_Paleo Sensitivity Map.mxd

Source: ESRI Maps Online; Dokken Engineering 1/4/2019; Created By: zachl

0 250 500 750 1,000 Feet

FIGURE 11
Paleontological Sensitivity

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County California

IX. 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?	☐	☒	☐	☐

Source(s): Air Quality Report, Market Street Bridge Replacement Project (2018) & South Coast Air Quality Management District Air Quality Management Plan (2016).

Findings of Fact:

Regulatory Background

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include CO_2, CH_4, NO_X, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. AB 1493 requires the CARB to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the EPA. The waiver was denied by the EPA in December 2007 and efforts to overturn the decision had been unsuccessful. See California v. Environmental Protection Agency, 9th Cir. Jul. 25, 2008, No. 08-70011. On January 26, 2009, it was announced that EPA would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 mpg fuel economy standard for automobiles and light duty trucks which will take effect in 2012. On June 30, 2009 EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming

Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate GHG as a pollutant under the Clean Air Act (Massachusetts vs. [EPA] et al., 549 U.S. 497 (2007). The court ruled that GHG does fit within the Clean Air Act's definition of a pollutant, and that the EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions. [1]

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6)--in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.[2]

According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient

[1] http://www.epa.gov/climatechange/endangerment.html

[2] https://grist.org/article/epa-greenhouse-gases-threaten-public-health-and-the-environment/

information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Climate Change Scoping Plan, CARB recently released an updated version of the GHG inventory for California (July 11, 2017). Figure 12 is a graph from that update that shows the total GHG emissions for California for 2016.

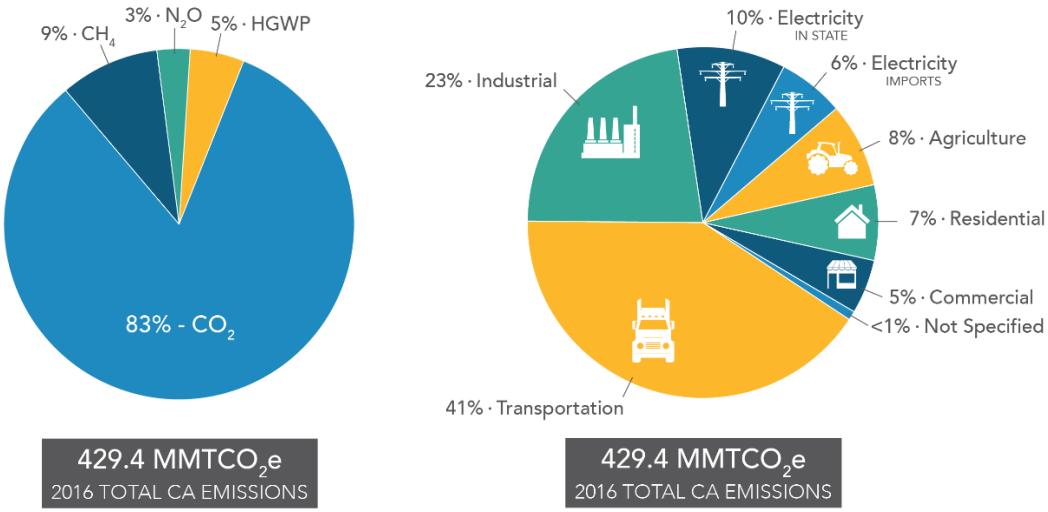


Figure 12. California Greenhouse Gas Inventory
Source: https://www.arb.ca.gov/cc/inventory/data/data.htm

On May 13, 2010, the USEPA issued a Final Rule that establishes a common sense approach to addressing greenhouse gas emissions from stationary sources under the CAA permitting programs. The rule is in its second phase, which continues through June 2013. In this phase, new construction projects that exceed a CO_2e threshold of 100,000 tons per year and modifications of existing facilities that increase CO_2e emissions by at least 75,000 tons per year are subject to permitting requirements. Additionally, operating facilities that emit at least 100,000 tons per year are subject to Title V permitting requirements for GHGs (USEPA 2010a). New and existing industrial facilities that meet or exceed that threshold require a permit under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs.

Riverside County 2015 Climate Action Plan

Following the state's adopted AB 32 GHG reduction target, Riverside County has set a goal to reduce emissions back to 1990 levels by the year 2020. This target was calculated as a 15% decrease from 2008 levels, as recommended in the AB 32 Scoping Plan. The estimated community-wide emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the proposed General Plan Update, are 12,129,497 MT CO_2e. In order to reach the reduction target, Riverside County must offset this growth in emissions and reduce community-wide emissions to 5,960,998 MT CO_2e by the year 2020 (Riverside County CAP 2015).

Western Riverside County Council of Governments Subregional Climate Action Plan

Twelve cities in Western Riverside County have joined efforts to develop the *Western Riverside County Council of Governments Subregional Climate Action Plan (WRCOG Subregional CAP)*, which sets forth a subregional emissions reduction target, emissions reduction measures, and action steps to assist each community to demonstrate consistency with California's Global

Warming Solutions Act of 2006 (Assembly Bill [AB] 32). AB 32 directs California to reduce statewide GHG emissions to 1990 levels by 2020. Several initiatives at the state level will help the western riverside subregion reduce GHG emissions, but they alone will not be sufficient to meet the 2020 target. The *WRCOG Subregional CAP* provides a roadmap for individual communities in the subregion to reduce GHG emissions through local actions. As a member agency of WRCOG, the City of Jurupa Valley is a participant in the *WRCOG Subregional CAP*.

Affected Environment

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. As discussed in Section III, Air Quality, construction of the project would be in compliance with applicable air quality rules.

Environmental Consequences

a & b) Less Than Significant with Mitigation Incorporated.

Construction Emissions

Construction in Riverside County contributes approximately 110,000 metric tons of GHG every year (SCAG 2012). The on-site construction equipment for proposed project is anticipated to emit 2,304 metric tons of GHG during construction, less than 1% of the annual GHG emissions during construction within Riverside County (Table 7).

Table 7. Construction CO_2 Emissions Compared to Threshold of Significance

Greenhouse Gas	Road Construction Emissions Model Estimates (metric tons/year)	U.S. EPA Threshold (metric tons/year)
CO_2	2,304 total for the project	75,000[3]
Source: Modeling using the *Roadway Construction Emissions Model* 8.1.0 (Sacramento Metropolitan Air Quality Management District 2017). https://www.epa.gov/sites/production/files/2015-12/documents/ghgpermittingguidance.pdf		

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Per measure CC-1, construction activities will be in compliance with the SCAQMD.

[3] Per the U.S. EPA, modifications of existing facilities that increase CO_2e emissions by at least 75,000 tons per year are subject to permitting requirements. Additionally, operating facilities that emit at least 100,000 tons per year are subject to Title V permitting requirements for GHGs (USEPA 2010a).

Operational Emissions

GHG emissions produced during operations are those that result from potentially increased traffic volumes or changes in automobile speeds. As shown in Table 8, the proposed project would not increase the number of automobiles in the traffic system. By widening the existing road, overall traffic flow is expected to improve, and the project is not anticipated to increase CO_2 emissions. Lower speeds, such as those experienced in congested areas, generally result in higher CO_2 emissions rates. No impact to greenhouse gas emissions or climate change would result from operations.

Table 8. Annual CO_2 Emissions for the Market Street Bridge

Time span	Existing (Year 2016)	Opening (Year 2025)		Future (Year 2045)	
		No-Build	**Build**	**No-Build**	**Build**
Annually	0.319 tons	0.286 tons	0.280 tons	0.398 tons	0.357 tons
*Based on CT-EMFAC Version 6.0.0.29548 (2017) and *Traffic Operations Analysis* (2017).					

A final numerical threshold for determining the significance of greenhouse gas emissions in the South Coast Air Basin has not been established by the South Coast Air Quality Management District. The City of Jurupa Valley is using the following as interim thresholds for non-industrial projects:

- Projects that emit less stationary source greenhouse gas emissions less than 3,000 MTCO2e per year are not considered a substantial greenhouse gas emitter and the impact is less than significant. Projects that emit in excess of 3,000 MTCO2e per year require additional analysis and mitigation.

This project is far below this threshold, with a maximum annual emission of 0.280 $MTCO_2e$/year in 2025 and 0.357 $MTCO_2e$/year in 2045. Furthermore, the project is estimated to generate less CO_2 than future conditions without the project due to general improvement in LOS through the study intersections. No significant impact to greenhouse gas emissions or climate change would result from the bridge replacement.

Additionally, the numbers are not necessarily an accurate reflection of what the true CO_2 emissions will be because CO_2 emissions are dependent on other factors that are not part of the model such as the fuel mix (EMFAC model emission rates are only for direct engine-out CO_2 emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

Avoidance and Minimization Measures

Although the proposed project will not exceed U.S. EPA thresholds, the City of Jurupa Valley, the City of Riverside and Riverside County are commited to reducing greenhouse gas emissions consistent with the Riverside County Climate Action Plan and Western Riverside County Council of Governments Subregional Climate Action Plan. As a result, the following measure will be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

CC-1: The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost $60 to $70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs

themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO_2 emissions.

X. 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 handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Source(s): Hazardous Waste Initial Site Assessment, Market Street Bridge Replacement Project (2018).

Findings of Fact:

<u>Regulatory Setting</u>

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.
Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during Project construction.

Affected Environment

The proposed project area was evaluated for the presence of Recognized Environmental Conditions (RECs) and/or Activity and Use Limitations (AULs), which are:

REC: "…the presence or the likely presence of any hazardous substances or petroleum hydrocarbons on the (Subject Property) that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum hydrocarbons into structures or into the ground, groundwater, or surface water of the subject property."

AUL: "…an explicit recognition by a federal, tribal, state, or local agency that residual levels of hazardous substances or petroleum hydrocarbons may be present on the property, and that unrestricted use of the property may not be acceptable."

Environmental Consequences

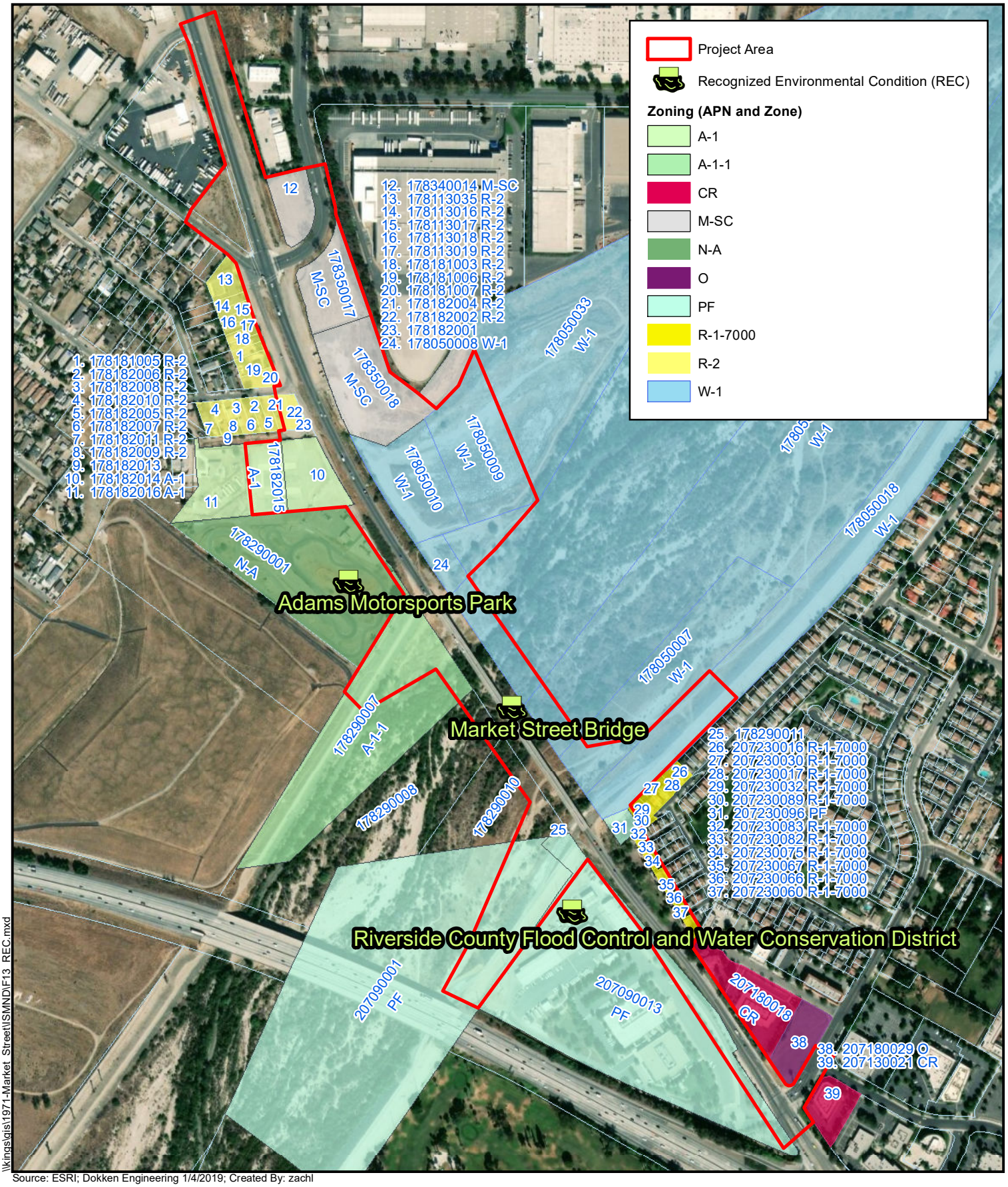
a) **Less than Significant.** The proposed project is designed to accommodate current and future traffic in the area. No additional transport, use, or disposal of hazardous materials is anticipated as a result of the project.

b) **Less than Significant Impact with Mitigation.** Based on a records review of EPA and state/local regulatory agencies performed by EDR and a visual site survey, the following potential recognized environmental conditions (REC)s were observed:

Table 9. REC Evidence

Location	Description of REC Evidence Found
Market Street Bridge 1901-1961 Market Street, Riverside, CA 92509	Based on the age of the bridge, there is potential for the existing Market Street Bridge to include asbestos, ACMs, or lead based paints.
Adams MotorSports Park 5292 24th St, Riverside, CA 92509	There is potential for fuel leaks or pavement staining associated with the motorsports park to occur.
Riverside County Flood Control and Water Conservation District 1995 Market Street, Riverside, CA 92501	There is potential for fuel leaks or pavement staining associated with maintenance or parking of fleet vehicles to occur.

Figure 13 shows the locations of the RECs.



Source: ESRI; Dokken Engineering 1/4/2019; Created By: zachl

\\kings\gis\1971-Market Street\SMND\F13_REC.mxd

FIGURE 13
Recognized Environmental Conditions

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

No ground disturbance would occur at the locations where the potential for fuel leaks or pavement staining is anticipated; however, due to the age of the bridge and potential for asbestos and lead based paint, standard BMPs for lead-containing structures prior to construction will be implemented; therefore, impacts are anticipated to be less than significant with mitigation incorporated. Mitigation measures HAZ-1 and HAZ-2 will be implemented to further reduce any potential impacts to a less than significant level.

c) **Less than Significant.** The project site is located within 0.25 miles of Patricia Beatty Elementary School in the City of Riverside. Construction activities would not involve handling or transportation of hazardous materials. However, the potential to encounter unforeseen hazardous materials does exist; therefore, it would be a less-than-significant impact in regards to exposure of existing contaminated soil during construction activities.

d) **No Impact.** The proposed project is not on a site included in the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, which is also known as the Cortese List. No sites in the Cortese List are in this area of Riverside County (EnviroStar 2017).

e) **No Impact**. The only airport within a two-mile radius of the project area is the Flabob Airport approximately 2 miles west of the project. The Riverside Municipal Airport is approximately 5 miles southeast of the project area. The project does not conflict with the Riverside County Airport Land Use Commission Compatibility Plan (2004) as the project area is not located within any Compatibility Zone established for this airport. The project would not result in a safety hazard or excessive noise for people residing or working in the project area.

f) **Less Than Significant with Mitigation Incorporated**. The Project will be constructed in two phases; the existing bridge will remain open during construction; a parallel structure will be constructed. Once complete, the parallel structure will be accessible to traffic and the existing bridge will be demolished; the new bridge will be built adjacent to the structure. As the bridge will remain open during construction, response times are not anticipated to be affected during construction. In the long-term, it is anticipated that the widened bridge would better serve emergency vehicles by reducing traffic congestion along the Market Street Bridge. Measure TRA-1 in Section XVIII would be implemented to further reduce temporary impacts to emergency access as a result of construction activities to a less than significant level.

g) **No Impact**. The project would not cause people or structures to be exposed to a significant risk of loss, injury, or death involving wildland fires either directly or indirectly.

Avoidance, Minimization, and/or Mitigation Measures

HAZ-1: As is the case for any project that proposes excavation, the potential exists for unknown hazardous contamination to be revealed during project construction. If soil contaminated by hazardous waste is discovered during construction, proper hazardous waste handling and emergency procedures under 40 CFR § 262 and Division 4.5 of Title 22 CA Code of Regs shall be followed.

HAZ-2: Upon removal of yellow thermoplastic pavement striping during construction, it is recommended that removal requirements for yellow striping and pavement marking

materials be performed in accordance with Caltrans Standard Special Provisions for REMOVE TRAFFIC STRIPE AND PAVEMENT MARKINGS.

HAZ-3: Any leaking transformers observed during the course of the project should be considered a potential polychlorinated biphenyl (PCB) hazard. A detailed inspection of individual electrical transformers was not conducted for this Phase I Environmental Site Assessment. However, should leaks from electrical transformers (that will either remain within the construction limits or will require removal and/or relocation) be encountered during construction, the transformer fluid should be sampled and analyzed by qualified personnel for detectable levels of PCB's. Should PCBs be detected, the transformer should be removed and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency. Any stained soil encountered below electrical transformers with detectable levels of PCB's should also be handled and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency.

XI. 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 or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☒	☐	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;	☐	☒	☐	☐
(iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Source(s): Water Quality Assessment Report, Market Street Bridge Replacement Project (2018).

Findings of Fact:

State Regulatory Setting

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and

surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

Construction General Permit

CGP (Order No. 2012-0006-DWQ, which amends Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ), adopted on July 17, 2012, became effective on July 17, 2012. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. For all projects subject to the CGP, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP.

The CGP separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

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

Regional and Local Regulatory Setting

The anti-degradation directives of Section 13000 of the Water Code and State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality Waters in California") require that high quality waters of the State shall be maintained "consistent with the maximum benefit to the people of the State." The Regional Water Board applies these directives when issuing a permit, or in an equivalent process, regarding any discharge of waste which may affect the quality of surface or groundwaters in the region.

Implementation of this policy to prevent or minimize surface and groundwater degradation is a high priority for the Board. In nearly all cases, preventing pollution before it happens is much more cost-effective than cleaning up pollution after it has occurred. Once degraded, surface water is often difficult to clean up when it has passed downstream. Likewise, cleanup of groundwater is costly and lengthy due, in part, to its relatively low assimilative capacity and inaccessibility. The prevention of degradation is, therefore, an important strategy to meet the policy's objectives.

The Regional Water Board will apply Resolution No. 68-16 in considering whether to allow a certain degree of degradation to occur or remain. In conducting this type of analysis, the Regional Water Board will evaluate the nature of any proposed discharge, existing discharge, or material change therein, that could affect the quality of waters within the region. Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

Pursuant to this policy, a Report of Waste Discharge, or any other similar technical report required by the Board pursuant to Water Code Section 13267, must include information regarding the nature and extent of the discharge and the potential for the discharge to affect surface or groundwater quality in the region. This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives. The extent of information necessary will depend on the specific conditions of the discharge. For example, use of best professional judgment and limited available information may be sufficient to determine that ground or surface water will not be degraded. In addition, the discharger must identify treatment or control measures to be taken to minimize or prevent water quality degradation.

Santa Ana River Basin Water Quality Control Plan

The 1995 Water Quality Control Plan for the Santa Ana River Basin (Region 8) was updated in February 2008, June 2011, and February 2016. The Basin Plan for the Santa Ana Region consists of the water quality goals and policies, descriptions of conditions, and discussions of solutions. It is also the basis for the Regional Board's regulatory programs. The Basin Plan establishes water quality standards for the ground and surface waters of the region. The term "water quality standards," as used in the federal Clean Water Act, includes both the beneficial uses of specific waterbodies and the levels of quality which must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the Regional Board and others that are necessary to achieve and maintain the water quality standards.

The Regional Board regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means.

Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For waterbodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included.

In some cases, it has been necessary for the Regional Board to completely prohibit the discharge of certain materials. Some types of discharges are prohibited in specific areas. Details on these prohibitions also appear in the Basin Plan.

Santa Ana Region MS4 Permit for Santa Ana River (NPDES Order No. R8-2010-0033, as amended Order No. R8-2013-0024; NPDES Permit No. CAS618033)

For the areas outside the City of Jurupa Valley and City of Riverside's ROW, the post-construction storm water controls will be regulated under the Santa Ana MS4 permit. The federal Clean Water Act (CWA) establishes requirements for the discharge of urban runoff from Municipal Separate Storm Sewer Systems (MS4) under the National Pollutant Discharge Elimination System (NPDES) program. On January 29, 2010, the Santa Ana Regional Water Quality Control Board (RWQCB) issued Permit Order No. R8-2010-0033 ("MS4 Permit") to authorize the discharge of urban runoff from MS4 facilities in Riverside County within the Santa Ana Region MS4 Permit area. The MS4 Permit requires development of a standard design and post-development Best Management Practices (BMP) guidance to guide application of Low Impact Development BMPs to the maximum extent practicable on streets, roads or highways under the jurisdiction of the Permittees used for transportation of automobiles, trucks, motorcycles, and other vehicles. The Santa Ana Region MS4 Permit Program prepared the Low Impact Development: Guidance and Standards for Transportation Projects (LID) to provide direction to Transportation Project owners and operators regarding how to address MS4 Permit requirements for public works Transportation Projects within their jurisdiction.

Affected Environment

The nearest receiving water body to the proposed project site is the Santa Ana River directly beneath the Market Street Bridge.

Environmental Consequences

a) **Less Than Significant with Mitigation Incorporated.**

Long-term Water Quality Impacts

The project will result in an approximate 3.9 acre increase of new impervious surface, which will increase the volume of storm water runoff from the roadways surface. Roadways may contain oil, grease, petroleum products, zinc, copper, lead, cadmium, iron, and other trace metals, which could harm aquatic life.

The Market Street Bridge Replacement project is a Category 3 project under the Santa Ana Region MS4 Permit area and a Transportation Project Guidance analysis report was prepared for the project for both City of Jurupa Valley and City of Riverside in July of 2018. This report included the following LID BMP feasibility analysis:

1. Minimum Road Widths
2. Drainage Swales
3. Infiltration Basins
4. Bioretention
5. Sidewalk Trees and Tree Boxes
6. Permeable Pavement

Based on the LID BMP feasibility analysis, the incorporation of drainage swales and permeable pavements are feasible to mitigate for surface runoff from the new impervious surface as a result of the proposed project. Measure WQ-2 provides a summary of the site design BMPs that are planned to be implemented by the project. Impacts related to long-term water quality impacts would be reduced to less than significant.

Short-term Water Quality Impacts

Short-term construction-related earth disturbing activities could potentially cause soil erosion and sedimentation to local waterways. Projects are at the highest risk during use of heavy equipment during grading actives. A Construction General Permit would be obtained and a Storm Water Pollution Prevention Plan (SWPPP) would be prepared prior to construction. Potential impacts would be mitigated for through sediment, erosion, and non-storm water control methods identified in the SWPPP pursuant to the requirements of the NPDES General Construction Permit. Implementation of a SWPPP would ensure the project does not result in significant impacts to water quality due to construction-related activities.

Accidental spills of petroleum hydrocarbons (fuels and lubricating oils), concrete waste or other construction-related products or wastes are also a concern during construction activities. The project SWPPP will include spill prevention and response BMPs to reduce impacts to less than significant levels. Measure WQ-1 provides the requirements for NPDES compliance.

Further, large trucks used to transport construction materials to the site could leak hazardous materials such as oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous materials could pose a threat to the Santa Ana River or groundwater quality. The SWPPP will have a section designated to non-storm water and materials management controls (which includes management of fuel transport, fueling, storing, etc. As the Construction General Permit will include a number of project-specific

BMPs to prevent any substantial degradation of water quality, this impact is considered less than significant with the implementation of WQ-1 through WQ-6.

b) **No Impact.** The proposed project does not propose activities requiring permanent increases in groundwater use. No new buildings that will increase water usage are proposed. The project does not have the potential to impede sustainable groundwater management of the basin.

c(i) **Less Than Significant with Mitigation Incorporated.** Existing drainage facilities exist on either side of the bridge structure. On the north side of the bridge, drainage sheet flows to the adjacent embankment on the west and is collected by asphalt concrete overside drains and conveyed into the Santa Ana River. On the south side of the bridge, drainage flows along asphalt concrete dike and concrete curb and gutter until it is collected by a small drainage channel and conveyed offsite on the west side and is collected offsite by a catch basin on the east side. It is anticipated that the facilities on the south side of the bridge can be reused for drainage of the proposed project. Facilities on the north side will need to be reconstructed. Due to the limited areas for BMP implementation, connectivity of BMPs may be limited to those directly adjacent to existing drainage facilities. However, this would not have any impact on the course of the Santa Ana River. Adherence to WQ-1 and WQ-2 would ensure that substantial erosion or siltation would not occur on or off-site. Impacts would be less than significant with mitigation incorporated.

c(ii) **Less Than Significant with Mitigation Incorporated**. The proposed project involves replacement of the Market Street Bridge with a wider bridge that accommodates 2 additional through lanes. The project will result in an approximate 3.9 acre increase of new impervious surface.

Additional runoff can contribute to increased flood potential of natural stream channels, accelerated soil erosion and stream channel scour, and increased transport of pollutants to waterways. This increase in impervious surfaces and potential runoff would be accommodated for by following MS4 guidelines for long-term, post construction storm water runoff (see discussion of these BMPs in the response to question a). Implementation of measure WQ-2 would ensure that increased pollutant runoff caused by the increase in impervious surfaces is mitigated to prevent substantially increasing the rate of surface runoff. Impacts related to surface runoff that would result in flooding on or off-site would be less than significant with mitigation incorporated.

c(iii) **Less Than Significant with Mitigation Incorporated**. The proposed project involves replacement of the 2-lane Market Street Bridge to a wider 4-lane bridge, which will result in an approximate 3.9 acre increase to the paved surface area.

The increase of pervious surfaces could potentially provide additional sources of polluted runoff. Additional runoff can contribute to increased flood potential of natural stream channels, accelerated soil erosion and stream channel scour, and increased transport of pollutants to waterways. The proposed project would implement all feasible LID BMPs and follow MS4 guidelines for long-term, post construction storm water runoff (see discussion of these BMPs in the response to question a). Implementation of measure WQ-2 would minimize potentially increased pollutant runoff caused by the increase in impervious surfaces to help prevent water quality impacts to the Santa Ana River. Impacts related to surface runoff that would result in substantial additional sources of runoff would be less than significant with mitigation incorporated.

c(iv) **No Impact**. The proposed project location occurs within Zone AE which indicates floodway areas (http://msc.fema.gov) (See Figure 14). The project would involve relocation of an access road to a levee along west of the Market Street Bridge; however, the project would not impede or redirect flood flows within the Santa Ana River channel. Further, the project is designed to reduce the impedance of flows by removal of the eleven existing pier walls and replacing them with thirty-four piers, which will result in a 0.1-acre net gain of unobstructed channel. The proposed project does not have the potential to impede or redirect flood flows.

d) **No Impact**. The proposed project location occurs within Zone AE which indicates floodway areas. The project would not involve inundation as it is a bridge replacement project. Further, the project would improve drainage facilities to avoid accidental or unintentional inundation.

Further, according to the California Department of Conservation, *California Official Tsunami Inundation Maps* the site is not located within a tsunami inundation zone. The project would have no impact on associated inundation from seicheor mudflow because the land is relatively flat and not located adjacent to or near any water bodies of sufficient size to create such situations.

e) **No Impact.** The proposed project does not propose activities requiring permanent increases in groundwater use and therefore would not conflict with a sustainable groundwater management plan. Additionally, no new buildings are proposed that will increase water usage. The project is compliant with Santa Ana River Basin Water Quality Control Plan and does not conflict or obstruct implementation of a water quality control plan.

V:\1971-Market_Street\ISMND\F15_FEMA FIRM.mxd

Source: USA Topo Maps Online; Dokken Engineering 8/7/2018; Created By: kchen

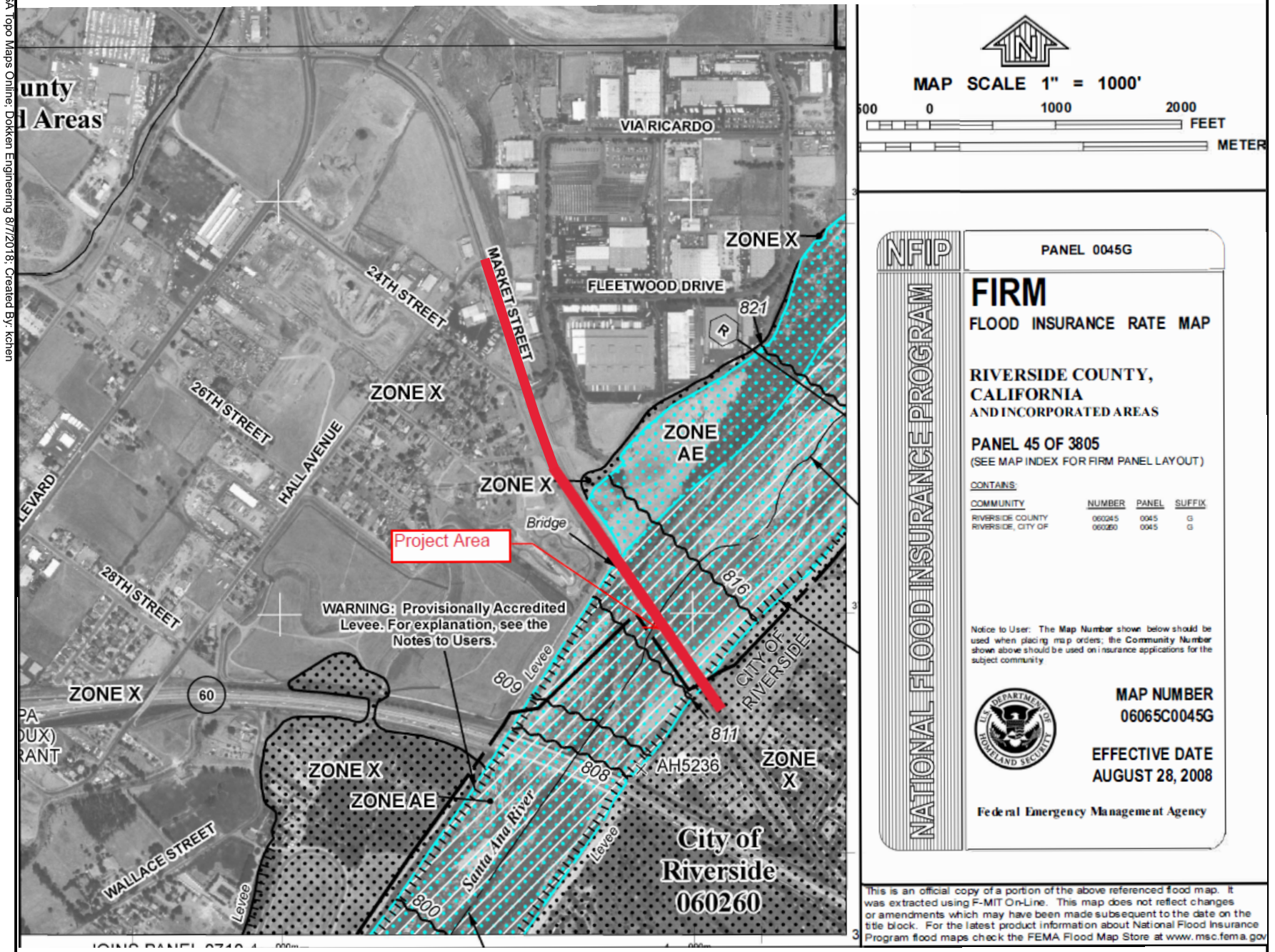


FIGURE 14
FEMA Firmette Map

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, California

Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented:

WQ-1: The proposed project would require a National Pollution Discharge Elimination System (NPDES) General Construction Permit for Discharges of storm water associated with construction activities (Construction General Permit 2012-0006-DWQ). The construction contractor shall adhere to the SWRCB Order No. 2012-0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes storm water and authorized non-storm water discharges from construction activities. As part of this Permit requirement, a SWPPP shall be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP will incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.

WQ-2: Post-construction storm water control requirements will be addressed in accordance with the Santa Ana River Watershed MS4 permit. Site Design BMPs will potentially include:

- Bioswales: A bioswale will be included at the toe of slope on the east side of bridge abutments within the City of Riverside.
- Permeable pavement will be incorporated into sidewalks within the project area.
- Source control BMPs would include sweeping, drainage facility inspection and maintenance, MS4 stenciling and signage, and protection of slopes and channels.

WQ-3: All concrete will be poured in dry areas only, or within confined areas that have been dewatered to prevent surface water contact, and will be allowed to cure a minimum of 7 days before contact with any surface water. The intent of this MM is to prevent concrete from increasing the pH of natural water bodies by allowing concrete to fully cure prior to contact with river water.

WQ-4: Water pumped out of any construction area in an effort to keep ground water or surface water from re-filling a dewatered site will be discharged to a temporary storage and treatment site or to an upland area where it can be filtered through native vegetation prior to reentering the stream channel, or be allowed to percolate into the ground. Sediments that may be with the water will be allowed to settle in a temporary basin and then removed and disposed of at a landfill site or used in access road stabilization. Discharge of water back to the river will occur in such a manner as not to cause erosion. The intent of this measure is to protect the river from turbidity impacts associated with sediment-laden runoff.

WQ-5: Equipment will be checked daily for leaks and will be well maintained to prevent lubricants and any other deleterious materials from entering waters of the state. Prior to operating equipment on the banks of the active channel, all such equipment will be free of any external petroleum products, hydraulic fluid, and coolants. Wash water will not be discharged to any water body without pre-treatment and all wash activities will take place outside of the river floodplain. All equipment will have straw wattle rings around them during the night to prevent any leaking of petroleum into the water. Use of plastic tarping

under the equipment will further reduce percolation of oil into the soil. The intent of this MM is to prevent pollutants from entering natural water bodies and affecting fish or their habitat through staging of equipment outside of the river floodplain during non-work hours. Equipment that is easily de-mobilized will be moved from the riverbed overnight. Larger equipment such as pumps and cranes will remain overnight unless flooding is imminent.

WQ-6: All materials, such as rock riprap, gravel, or large boulders placed within the water or along the river bank, will be free of fines, silt, soil, or other extraneous material and the use of natural materials will be initiated as much as practicable. An exception to the presence of fines is permitted if they are required as part of channel bed reconstruction or temporary sand berms using sand existing on-site.

XII. 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) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

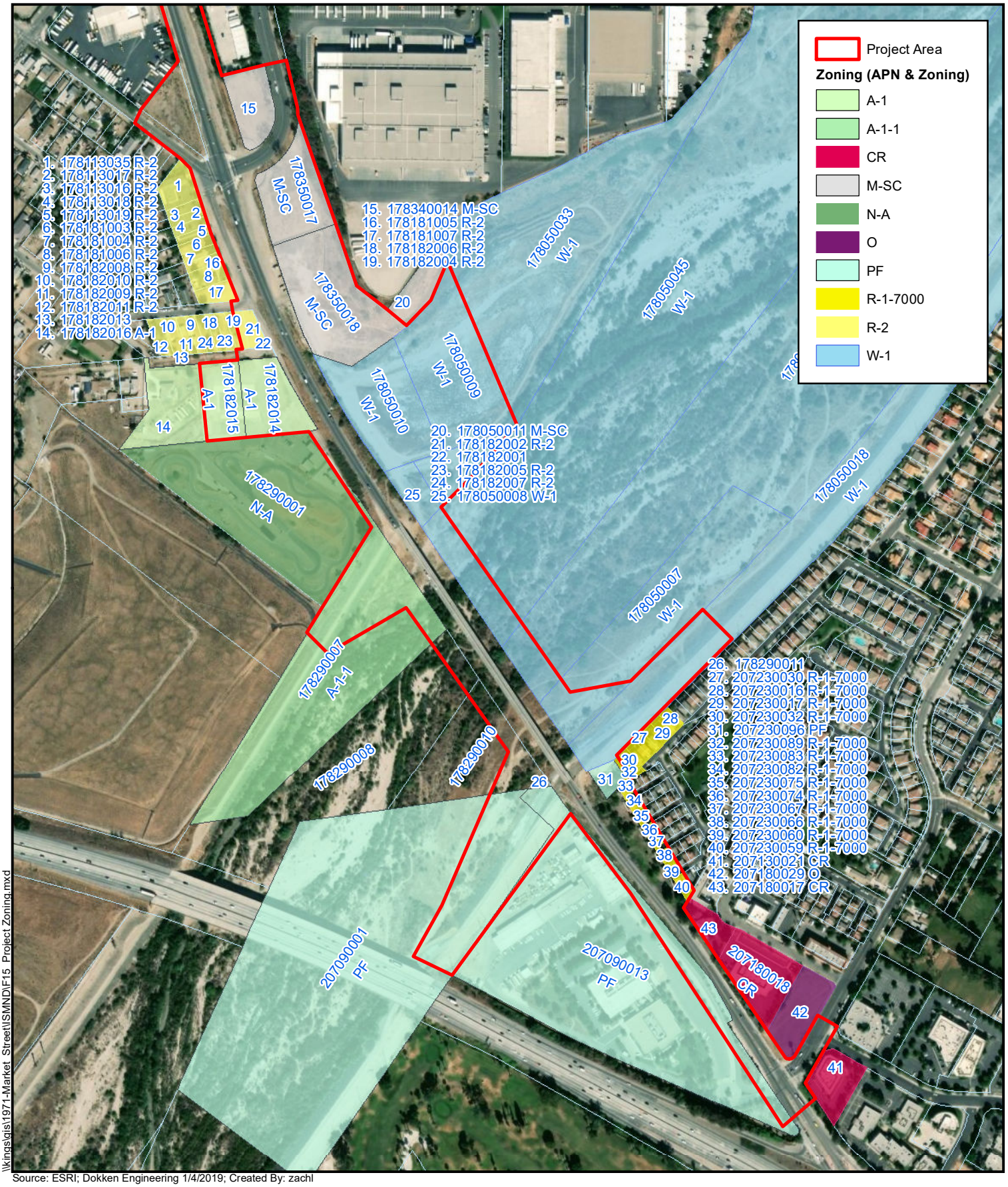
Findings of Fact:

a) **No Impact**. The project would not divide an established community. As a bridge replacement project, the project would provide improved north-south connectivity within Riverside County.

b) **No Impact**. The land use on adjacent properties includes a distribution center, a motorsports park, the Riverside County Flood Control and Water Conservation District, the Santa Ana River Trail, a business/office park, single- and multi-family residential properties, and open, undeveloped lands. Zoning for adjacent properties within the City of Riverside include Commercial Retail Zone (CR), Office (O), Public Facilities (PF), Single-family Residence (R-1), and Watercourse (WC). Zoning for properties within the City of Jurupa Valley include Light Agriculture (A-1), Manufacturing – Service Commercial (M-SC), Natural Assets (N-A), Multiple-Family Dwellings (R-2), Watershed & Conservation Areas (W-1). Zoning for the project area is shown in Figure 15 along with the APNs. As demonstrated throughout this Initial Study/Mitigated Negative Declaration, the Project would otherwise not conflict with any applicable goals, objectives, and policies of the *City of Jurupa General Plan, City of Riverside General Plan,* City of Jurupa Valley Municipal Code.or the City of Riverside Municipal Code. Additionally, the Project would not conflict with any applicable policy document, including the *Western Riverside Multiple Species Habitat Conservation Plan, the Santa Ana Regional Water Quality Control Board's Santa Ana River Basin Water Quality Control Program,* the *South Coast Air Quality Management District's Air Quality Management Plan, and the Flabob Airport Land Use Compatibility Plan*. The purpose of these plans are to avoid or mitigate an environmental effect.

Avoidance, Minimization, and/or Mitigation Measures

None.



Source: ESRI; Dokken Engineering 1/4/2019; Created By: zachl

\\kings\gis\1971-Market Street\SMND\F15 Project Zoning.mxd

0 250 500 750 1,000 Feet

FIGURE 15
Project Zoning

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

XIII. 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?	☐	☐	☐	☒

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a & b) **No Impact**. The Riverside County General Plan EIR indicates the project site is located in Mineral Resource Zone 3 (MRZ-3), which are areas indicating that mineral deposits are likely to exist; however, the significance of the deposit in these areas is undetermined. Since the Market Street Bridge is located in a previously disturbed commercial, residential, and industrial area, the disturbance of important mineral resources is not anticipated. The project would not result in impacts to mineral resources.

Avoidance, Minimization, and/or Mitigation Measures

None.

XIV. NOISE: Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) Be located within the vicinity of a private air strip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Source(s): Noise Study Report and Traffic Operations Report, Market Street Bridge Replacement Project (2018).

Findings of Fact:

Regulatory Setting

Noise is generally characterized as an equivalent continuous sound level (Leq) averaged over time, day-night average sound level (Ldn), or CNEL (Community Noise Equivalent Level). Both the City of Riverside and City of Jurupa Valley's respective General Plan Noise Element outline noise/land use compatibility guidelines which show a range of noise standards for various land use categories in terms of Dba CNEL. Land uses within the vicinity of the project area that are sensitive to noise impacts from traffic noise sources primarily consist of single-family and multi-family residences.

Noise level exposure for single-family residential land uses within the City of Jurupa Valley is considered acceptable for noise levels up to 60 dBA CNEL and up to 70 dBA CNEL for churches and commercial land uses. Noise level exposure for single-family residential land uses and churches within the City of Riverside is considered acceptable for noise levels up to 60 dBA CNEL.

The City of Riverside restricts operation of any tools or equipment used in construction between the hours of 7:00AM and 7:00PM on week days and between 8:00AM and 5:00PM on Saturdays or at any time on Sunday or federal holidays; however, construction is exempt if work is performed in the public right-of-way and approval from the Public Works Director or his designee is granted because such work could create traffic congestion and/or hazardous or unsafe conditions. The City of Jurupa Valley exempts capital improvement projects of a government agency from the City of Jurupa Valley Municipal Code's Noise Regulations.

Affected Environment

The noise environment near the proposed project is dominated by traffic sources. Background noise levels are primarily influenced by the Market Street Bridge. Traffic remains the dominant noise source at the project site. As a way to characterize noise levels, within vicinity of the project area is most similar to that of “Noisy urban residential”. Normal noisy urban residential areas have a typical noise level of 60-65 dBA.

Noise sensitive receptors include the surrounding residences northwest and southeast of the Market Street Bridge, the closest within approximately 200 feet away.

Table 10 summarizes noise levels produced by commonly used construction equipment. Individual types of construction equipment are expected to generate noise levels ranging from 74 to 96 dBA at a distance of 50 feet. The construction noise level at a given location depends on the type of construction activity, the noise level generated by that activity, and the distance and shielding between the activity and noise receivers.

Table 10. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Sonic Pile Driver	96
Grader	85
Bulldozers	85
Truck	88
Loader	85
Roller	74
Air Compressor	81
Backhoe	80
Pneumatic Tool	85
Paver	89
Concrete Pump	82

Source: Federal Transit Administration, 1995

Generally, noise levels at construction sites can vary from 55 dBA to a maximum of nearly 96 dBA when heavy equipment is used. Construction noise of this project would be intermittent, and noise levels would vary depending on the type of construction activity. For this project, lowest construction equipment-related noise levels would be 55 dBA at a distance of 50 ft for sound from a pick-up truck. Highest noise levels would be up to 96 dBA (at a distance of 50 ft) for sonic pile driver.

Field Surveys

The existing noise environment of the project area was characterized by conducting one (1) long-term and three (3) short-term noise measurements at representative noise-sensitive receiver locations.

Short-Term Noise Level Measurement Results

Short-term monitoring was conducted at three (3) locations in October 2017 using a Larson David Model 824 Type 1 sound level meter (serial number 824A3562). The calibration of the meter was checked before and after the measurement using a Larson Davis CAL200 (serial number 8534). Measurements were taken over a 15-minute period at each site. The short-term measurement results are shown in Table 11 and the noise measurement locations are identified in Figure 16.

During the short-term measurements, field staff attended each meter. Minute-to-minute Leq values collected during the measurement period (typically 15 minutes in duration) were logged by the sound level meter. Dominant noise sources that were not traffic-based were observed and noted during the measurements.

Temperature, wind speed, and humidity were noted during the short-term monitoring. During the short-term measurements, winds were gentle and speeds typically ranged from 10 to 15 miles per hour (mph). Temperatures ranged from 81°F to 89°F, with relative humidity typically 23% to 42%.

Table 11. Short-Term Measurement Results

Receiver ID	Location Description	Noise Sources	Vehicle Speed	Start Time/Date	Duration (Minutes)	Measured Leq, dBA	Predicted Sound Level, dBA	Measured minus Predicted, dBA
NM-1	Single-family residence southeast of the Market Street Bridge. Elevation at this location is approximately the same as the adjacent roadways.	Dominant noise source is traffic on Market Street.	55	2:22 PM 10/18/2017	15	65.2	65.4	0.2
NM-2	Single-family residence southeast of the Market Street Bridge. Elevation at this location is lower than the adjacent roadways.	Dominant noise source is traffic on Market Street.	55	2:50 PM 10/18/2017	15	61.5	61.8	0.3
NM-3	Church west of the Market Street/Via Cerro/24th Street intersection. Elevation at this location is approximately the same as the adjacent roadways	Dominant noise source is traffic on Market Street.	55	3:15 PM 10/18/2017	15	67.2	65.7	-1.5

Source: Dokken Engineering, October 2017

These measurements were conducted to calibrate the TNM 2.5 model. Traffic speeds were recorded by driving on the roadways immediately after a noise measurement. Traffic counts obtained from video recordings were used as inputs in the TNM 2.5 model. The traffic counts were tabulated according to three vehicles types, including automobiles, medium trucks (2-axle with 6-wheels but not including pick-up trucks) and heavy trucks (3 or more axles). As a general rule, the noise model is considered to be calibrated if the field measured noise levels versus the modeled noise levels (using field collected traffic data) agree within 3 dB of each other. If differences are more than 3 dB, refinement of the noise model is performed until there is agreement between the two values. If after thorough reevaluation calibration still cannot be achieved due to complex topography or other unusual circumstances, then a calibration constant is added such that the measured versus modeled values agree before any predictions can be made with the model.

TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. Table 11 compares measured and modeled noise levels at each measurement location. The predicted sound levels are within 3 dB of the measured sound levels and considered to be in reasonable agreement with the measured sound levels. Therefore, no calibration of the model was made.

The primary existing noise sources in the project area are transportation facilities. Traffic traveling on the Market Street Bridge is the main source of traffic noise in the project vicinity. The FHWA TNM 2.5 was used to evaluate traffic-related noise conditions in the vicinity of the project site. Since the City of Riverside and Jurupa Valley's noise/land use compatibility guidelines are expressed in Ldn/CNEL, TNM 2.5 was used to estimate noise levels expressed in dBA Lden, the level of noise expressed as a 24-hour average (also known as CNEL). Two-way Average Daily Traffic (ADT) Volumes from the project Traffic Operations Analysis Report (Fehr & Peers, January, 2018) were used as inputs in TNM 2.5 to estimate noise levels in the existing and future condition in dBA CNEL. The existing and future model results are provided in Appendix G.

The noise measurement locations are identified in Figure 16 below.

\\kings\dis\1971-Market Street\SM\NDF\16-Noise Monitoring Locations.mxd

Source: ESRI; Dokken Engineering 1/4/2019; Created By: zachl

0 250 500 750 1,000 Feet

Figure 16
Noise Measurement and Receiver Locations

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Long-Term Noise Level Measurement Results

The purpose of long-term monitoring is to gather sound level data over a 24-hour period to find the noisiest hour for traffic and describe sound levels throughout the day rather than absolute levels at a specific receiver location. One (1) long term measurement was conducted by Dokken Engineering using a Larson-Davis Model 824 Type 1 sound level meter. The long-term noise level measurement was performed at 5296 24th Street, Mt Vernon Baptist Church, over a 24 hour period from Wednesday, October 18, 2017 to Thursday, October 19, 2018.

Table 12 and Figure 17 shows that traffic noise peaks during the 3:00 PM – 4:00 PM hour for the long-term monitoring location.

Table 12. Long-Term Measurement Results

Hour Beginning	dBA $L_{eq[h]}$	Difference from Loudest Hour (dB)
4:00 PM	**68**	**0**
5:00 PM	65	3
6:00 PM	64	4
7:00 PM	66	1
8:00 PM	61	7
9:00 PM	60	8
10:00 PM	59	9
11:00 PM	60	7
12:00 AM	60	8
1:00 AM	59	9
2:00 AM	59	9
3:00 AM	60	8
4:00 AM	63	5
5:00 AM	60	8
6:00 AM	61	7
7:00 AM	62	6
8:00 AM	64	4
9:00 AM	65	3
10:00 AM	65	3
11:00 AM	64	4
12:00 PM	66	2
1:00 PM	65	3
2:00 PM	65	3
3:00 PM	65	3

Source: Dokken Engineering, October 2017.
Worst noise hour noise level is bolded.
dBA – decibels or A-weighted sound level
L_{eq} - Equivalent Sound Level

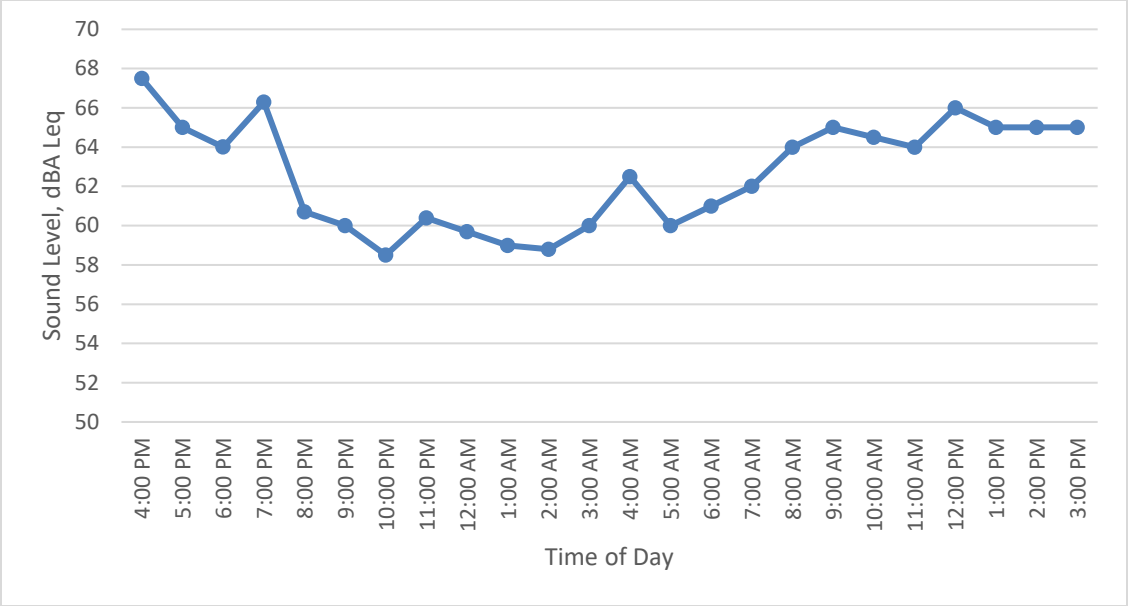


Figure 17. Summary of Long-Term Measurement Result

Table 13 shows the existing noise levels in the project area and also lists the location and type of development for each modeled receiver location. The ambient noise levels measured were used to establish the existing noise level at many locations within the project area. As shown in Table 13, existing noise levels within the project area range from 60.1 dBA CNEL to 72.2 dBA CNEL. Furthermore, existing noise levels at each noise receptor exceeds normally acceptable noise levels for their respective land use.

Table 13. Existing Exterior Noise Levels

Receiver No.	Location	Jurisdiction/Noise Threshold	Type of Land Use	Number of Dwelling Units	Modeled Exterior Noise Level (dBA CNEL)	General Plan Land Use Compatibility (dBA CNEL)
ST-1	1948-1932 Kenton	City of Jurupa Valley	Single-family Residence	1	70.2	60
ST-2	1865 George Court	City of Jurupa Valley	Single-family Residence	1	63.9	60
ST-3	5296 24th Street	City of Jurupa Valley	Church	0	69.6	70
SR-1	5240 24th Street	City of Jurupa Valley	Single-family Residence	1	59.2	60
SR-2	5242 Bell Avenue	City of Jurupa Valley	Single-family Residence	1	67.5	60
SR-3	5286 Bell Avenue	City of Jurupa Valley	Single-family Residence	1	64.8	60
SR-4	5292 24th Street	City of Jurupa Valley	Single-family Residence	1	66.6	60
SR-5	1879 George Court	City of Riverside	Single-family Residence	1	67.8	60
SR-6	1886 George Court	City of Riverside	Single-family Residence	1	69.8	60
SR-7	1901 Flint Court	City of Riverside	Single-family Residence	1	70.3	60

Table 13. Existing Exterior Noise Levels

Receiver No.	Location	Jurisdiction/Noise Threshold	Type of Land Use	Number of Dwelling Units	Modeled Exterior Noise Level (dBA CNEL)	General Plan Land Use Compatibility (dBA CNEL)
SR-8	1906 Flint Court	City of Riverside	Single-family Residence	1	70.4	60
SR-9	1925 Lobo	City of Riverside	Single-family Residence	1	71.0	60
SR-10	1930 Lobo	City of Riverside	Single-family Residence	1	71.3	60
SR-11	1943 Kenton	City of Riverside	Single-family Residence	1	71.2	60
SR-12	1948 Kenton	City of Riverside	Single-family Residence	1	70.7	60
SR-13	Southeast of Market Street and Via Cerro	City of Jurupa Valley	Commercial	0	70.5	70
SR-14	Southeast of Market Street and Via Cerro	City of Jurupa Valley	Commercial	0	71.2	70

Source: Dokken Engineering, May 2018

Environmental Consequences

a) Less Than Significant.

Operational Impacts

Future Exterior Noise Levels

The opening-year traffic noise modeling results summarized in Table 14, indicate that exterior noise levels in the Opening Year (2025) would range between 60.0 dBA CNEL and 72.2 dBA CNEL without the proposed project. Noise levels would increase by up to 1.1 dBA CNEL from existing noise levels due to the increase in ADT. Opening Year noise levels at each noise receptor without the project would exceed normally acceptable noise levels for their respective land use.

Exterior noise levels under the Build Alternative would range between 59.9 dBA and 72.3 dBA CNEL in 2025. While noise levels would continue to remain above normally acceptable noise levels for their respective land use, the greatest increase in exterior noise levels that would occur under the proposed project is 1.0 dBA CNEL at noise receiver ST-3. According to the Caltrans Technical Noise Supplement (TeNS) to the Caltrans Traffic Noise Analysis Protocol (Caltrans 2013), an increase of 3.0 decibels is considered a barely perceptible noise increase to the average human ear. Since the greatest increase in noise level that would occur is less than what is perceptible to the average human, this would not be considered a substantial increase. Therefore, a substantial permanent increases in exterior noise would not occur as a result of the proposed project in the Opening Year.

Table 14. Comparison of Estimated Exterior Noise Levels in Opening-Year (2025)

Receptor # and Location	Predicted Noise Level for No-Build (2025) (dBA CNEL)	Predicted Noise Level for Build (2025) (dBA CNEL)	Noise Difference (dBA CNEL)	General Plan Land Use Compatibility (dBA CNEL)
ST-1	71.0	71.3	0.3	60
ST-2	64.6	65.6	1.0	60
ST-3	70.4	69.9	-0.5	70
SR-1	60.0	59.9	-0.1	60
SR-2	68.4	67.7	-0.7	60
SR-3	65.6	64.9	-0.7	60
SR-4	67.7	66.6	-1.1	60
SR-5	68.7	68.5	-0.2	60
SR-6	70.6	70.7	0.1	60
SR-7	71.2	71.2	0.0	60
SR-8	71.4	71.5	0.1	60
SR-9	71.9	72.0	0.1	60
SR-10	72.2	72.3	0.1	60
SR-11	72.0	72.1	0.1	60
SR-12	71.5	71.8	0.3	60
SR-13	71.4	71.5	0.1	70
SR-14	72.0	72.1	0.1	70
Source: FHWA Traffic Noise Model 2.5				

The design-year traffic noise modeling results summarized in Table 15 indicate that exterior noise levels in the Design Year (2015) would range between 61.6 dBA CNEL and 73.8 dBA CNEL without the proposed project. Noise levels would increase by up to 2.7 dBA CNEL due to the increase in ADT. Design Year noise levels at each noise receptor without the project would exceed normally acceptable noise levels for their respective land use.

Exterior noise levels under the Build Alternative would range between 71.5 dBA and 73.9 dBA CNEL in 2045. While noise levels would continue to remain above normally acceptable noise levels for their respective land use, the greatest increase in exterior noise levels that would occur under the proposed project is 1.0 dBA CNEL at noise receiver ST-3. Therefore, a substantial permanent increases in exterior noise would not occur as a result of the proposed project in the Design Year.

Table 15. Comparison of Estimated Exterior Noise Levels in Design-Year (2045)

Receptor # and Location	Predicted Noise Level for No-Build (2045) (dBA CNEL)	Predicted Noise Level for Build (2045) (dBA CNEL)	Noise Difference (dBA CNEL)	General Plan Land Use Compatibility (dBA CNEL)
ST-1	72.6	72.9	0.3	60
ST-2	66.2	67.2	1.0	60
ST-3	72.0	71.5	-0.5	70
SR-1	61.6	61.5	-0.1	60
SR-2	70.0	69.3	-0.7	60
SR-3	67.2	66.5	-0.7	60
SR-4	69.3	68.2	-1.1	60
SR-5	70.3	70.1	-0.2	60
SR-6	72.2	72.3	0.1	60
SR-7	72.8	72.8	0.0	60
SR-8	73.0	73.1	0.1	60
SR-9	73.5	73.6	0.1	60
SR-10	73.8	73.9	0.1	60
SR-11	73.6	73.7	0.1	60
SR-12	73.1	73.4	0.3	60
SR-13	73.0	73.1	0.1	70
SR-14	73.6	73.7	0.1	70
Source: FHWA Traffic Noise Model 2.5				

Two sound barriers were studied to be included as parts of the project's features to further reduce volumes for residents adjacent to the proposed project. The sound barriers proposed to be included as part of the project's features are described below:

EVALUATED SOUNDWALL LOCATIONS

Soundwall SW-W1: SW-W1 is a proposed soundwall that was evaluated to shield the backyard of receiver SR-2 at 5242 Belle Avenue within the City of Jurupa Valley. SW-W1 was found to be feasible at a minimum height of 6 feet where SW-W1 was raised in 2 foot increments from 8 feet to 14 feet in height. However, an 8-foot soundwall would need to be constructed to meet the Caltrans acoustical design goal of a 7 dB reduction. An 8-foot soundwall is also sufficient to break the line of sight of an 11.5 foot truck stack at this location.

Figure 18 shows the evaluated sound wall and receiver location for SW-W1.

Soundwall SW-W2: Two versions of soundwalls were evaluated to shield receivers SR-5 through SR-12. These receivers represent residences located southeast of the Market Street Bridge along Market Street.

SW-W2 v1 – Reconstruct Existing Soundwall: SW-W2 v1 would involve reconstruction of the existing 6-foot soundwall along Market Street to the east to shield receivers SR-5 through SR-12. These receivers represent residences located southeast of the Market

Street Bridge along Market Street. SW-W2 v1 was found to be feasible when reconstructed- at a minimum height of 8 feet where SW-W2 was raised in 2 foot increments from 8 feet to 14 feet in height. An 8-foot soundwall would meet the Caltrans acoustical design goal of a 7 dB reduction. However, a 10-foot wall would need to be constructed to break the line of sight of an 11.5 foot truck stack.

SW-W2 v2 – Offset Soundwall: SW-W2 v2 would be constructed 3 feet offset from the existing 6 foot wall behind receivers SR-5 through SR-12. SW-W2 v2 was found to be feasible at a minimum height of 8 feet where SW-W2 v3 was raised in 2 foot increments from 6 feet to 14 feet in height. A 10-foot soundwall would meet the Caltrans acoustical design goal of a 7 dB reduction. Furthermore, a 10-foot wall would need to be constructed to break the line of sight of an 11.5 foot truck stack.

Figure 19 shows the evaluated sound wall and receiver locations for SW-W2.

Project Area
APN Boundary
Proposed Linework
Noise Measurement Locations
Modelled Sensitive Noise Receivers
Soundwall

SR-13
SR-14
Market St
24Th St
LT-1
ST-3
SR-1
SR-2
Proposed Soundwall SW-W1 (Length 115', Height 8')
SR-4
Paloma Rd
Bell Ave
SR-3

\\kings\gis\1971-Market_Street\MNDF18_Evaluated Soundwalls SW-W1.mxd

Source: ESRI; Dokken Engineering 1/4/2019; Created By: zachl

0 100 200 300 400 500 Feet

Figure 18
Evaluated Soundwall SW-W1

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

\\kingsfs\s1971-Market Street\ISMND\F19 Analyzed Soundwalls SW-W2 Alternatives.mxd

Source: ESRI; Dokken Engineering 1/4/2019; Created By: zachl

0 50 100 150 200 Feet

Figure 19
Evaluated Soundwall SW-W2

Market Street Bridge Replacement Project
City of Jurupa Valley and City of Riverside, Riverside County, California

Based on the analysis discussed above, the proposed project would also not result in any substantial permanent increase in ambient noise levels. Furthermore, replacement of an existing soundwall shielding noise receivers SR-5 through SR-12 to a higher wall and a new proposed soundwall shielding SR-2 in adherence to the Caltrans Noise Abatement Protocol would be incorporated as a design feature of the project to further ensure noise levels are reduced to a less than significant level. Final wall heights are subject to final design. Therefore, impacts would be less than significant.

Construction Impacts

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

Per Section 11.05.020 (9) of the Jurupa Valley Municipal Code, construction activities occurring between the hours of 6:00 AM and 6:00 PM during the months of June through September and between 7:00 AM and 6:00 PM during the months of October through May are exempt from noise standards. Generally, noise from construction activities is exempt from local noise regulations. Section 7.35.020 of the City Riverside's Municipal Code limits construction activities to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturdays. Construction–related noise is prohibited on Sundays and federal holidays.

Regardless of the project's consistency with the *Municipal Codes* as described above, construction activities, especially those involving heavy equipment, would result in noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Although temporary construction noise for capital improvement projects is exempt from local noise ordinances, the project proposes to include construction methods, structure designs, and operational methods that would reduce the potential noise levels during construction including equipping internal combustion engines with the manufacturer-recommended muffler and not operating an internal combustion engine on the job site without the appropriate muffler. Further, work activities would not occur outside the hours of 7:00AM and 7:00PM on week days and between 8:00AM and 5:00PM and 8:00AM on Saturdays or at any time on Sunday or federal holidays.

No significant adverse noise impacts from construction are anticipated because construction noise would be short-term and intermittent. Furthermore, implementation of minimization measures NOI-1 and NOI-2 would ensure noise impacts are less than significant. Construction is anticipated to take 24 months.

b) **Less Than Significant with Mitigation Incorporated.**

Construction of the proposed project could potentially increase groundborne vibration or noise in the project area. Table 16 provides an estimate of vibration levels associated with construction activities for each piece of equipment. These are based on a wide range of soil conditions.

Table 16. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft (in/sec)
Pile Driver (impact)	1.518
Pile Drive (sonic)	0.734
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Federal Transit Administration, 2006.
See also:
http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm

During construction, the equipment with the greatest potential for vibration impacts would be generated by sonic pile drivers. Based on the information shown in Table 16, sonic pile drivers could cause vibration levels up to 0.734 PPV within 25 feet of the Market Street Bridge during construction.

There are currently no Federal Highway Administration (FHWA) or State standards for vibration impacts. To assess the damage potential to nearby structures from ground vibration induced by construction equipment, the following criteria Table 17 was used to evaluate the potential for damage:

Table 17. Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans Transportation- and Construction-Induced Vibration Guidance Manual, June 2004

The nearest sensitive receptor is 200 feet away from construction activity. None of the buildings in the vicinity of the construction area are considered extremely fragile, fragile, or historic buildings. The majority of buildings in the project vicinity that would be impacted are residential structures and modern industrial/commercial buildings. Therefore, no buildings would be exposed to potentially damaging construction vibration levels from sonic pile drivers exceeding the thresholds shown in Table 17.

There are currently no Federal Highway Administration (FHWA) or State standards for vibration impacts. The following criteria in Table 18 was used to evaluate the potential for human annoyance:

Table 18. Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Severe	2.0	0.4

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans Transportation- and Construction-Induced Vibration Guidance Manual, June 2004

As shown in Table 18, vibration levels as a result of construction activity, specifically use of a sonic pile driver, would potentially exceed the "Severe" level. However, use of the sonic pile drivers are intermittent and individual receptors would not be subject to perceptible vibration for extended periods.

Operational Impacts

Operation of the proposed project would not perceptibly increase groundborne vibration or groundborne noise because operation of the proposed project would not involve vibration creating activities. It is anticipated that operation of the widened roadway would not increase vibration as vibration from transportation sources travelling on the Market Street Bridge are supported on flexible suspension systems and pneumatic tires and are not an efficient source of ground vibration. Additionally, since the proposed project would construct new pavement, it is anticipated that future ground vibration generated by roadway traffic on the Market Street Bridge would be less than the existing conditions.

Construction Vibration Impacts

Construction activities associated with the proposed project may cause groundborne vibration. Per Section 11.05.020 (9) of the Jurupa Valley Municipal Code, construction activities occurring between the hours of 6:00 AM and 6:00 PM during the months of June through September and between 7:00 AM and 6:00 PM during the months of October through May are exempt from noise standards. Generally, noise from construction activities is exempt from local noise regulations. Section 7.35.020 of the City Riverside's Municipal Code limits construction activities to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturdays. Construction-related noise is prohibited on Sundays and federal holidays.

Regardless of the project's consistency with the *Municipal Codes* as described above, construction activities, especially those involving heavy equipment, would result in groundborne vibration ranging up to 0.734 PPV within 25 feet of the Market Street Bridge during construction due to sonic pile drivers.

No significant adverse vibration impacts from construction are anticipated because construction noise and vibration would be short-term and intermittent. Furthermore, implementation of minimization measures NOI-1 and NOI-2 would ensure vibration impacts are less than significant. Construction is anticipated to take 24 months.

c) **No Impact**. The project is approximately 2 miles northwest of the Flabob Airport and is outside of the airport influence boundary as stated in the Airport Land Use Compatibility

Plan Policy Document. As the closest airport is approximately 2 miles away and outside of the influence boundary, the project would not expose people residing or working in the project area to excessive noise levels as the project does involve construction of any buildings.

Avoidance, Minimization, and/or Mitigation Measures

NOI-1: The Contractor shall abide by the following for construction activities:

- Work activities shall occur between the hours of 7:00AM and 7:00PM on week days and between 8:00AM and 5:00PM on Saturdays, excluding Sundays and federal holidays. An exemption from this ordinance may be granted by the City of Riverside, at the digression of the Public Works Director or his designee if it is determined construction will create traffic congestion and/or hazardous or unsafe conditions.
- Equip an internal combustion engine with the manufacturer-recommended muffler.
- Do not operate an internal combustion engine on the job site without the appropriate muffler.

NOI-2: Prior to the issuance of a grading permit, the developer is required to submit a construction-related noise mitigation plan to the City of Jurupa Valley Planning Department for review and approval. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project. In addition, the plan shall require that the following notes are included on grading plans and building plans. Project contractors shall be required to ensure compliance with the notes and permit periodic inspection of the construction site by City of Jurupa Valley staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

"a) Haul truck deliveries shall be limited to between the hours of 6:00am to 6:00pm during the months of June through September and 7:00am to 6:00pm during the months of October through May.

b) Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards.

c) All stationary construction equipment shall be placed in such a manner so that emitted noise is directed away from any sensitive receptors adjacent to the Project site.

d) Construction equipment staging areas shall be located the greatest distance between the staging area and the nearest sensitive receptors."

XV. POPULATION AND HOUSING: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a) **No Impact**. The project would have no direct impact on population growth since it does not propose new homes. Furthermore, the project is a bridge replacement project that would serve existing and planned population growth and reduce traffic.

b) **No Impact.** In order to accommodate the bridge replacement, the project would result in permanent right-of-way acquisition. It is anticipated all acquisitions will be minor and only sliver acquisitions along largely vacant and undeveloped land will be necessary to construct the proposed project. Temporary right-of-way impacts will include temporary construction easements along the roadway to accommodate access and construction equipment. Utility poles/guywires may require relocation, which could also necessitate easements or right-of-way acquisitions. The staging area would occur on a vacant private lot to the north. However, the proposed project would not displace any existing housing or people. No impacts related to displacement of housing and people are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

None.

XVI. PUBLIC SERVICES:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☒	☐	☐
ii) Police protection?	☐	☒	☐	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a (i, ii) **Less Than Significant with Mitigation Incorporated**. The project would not result in the need for new public services beyond what was anticipated in the Cities' General Plans. The project does not propose a new housing or commercial development requiring additional police or fire services. The proposed bridge replacement would not result in a population increase and the project accommodates existing and planned growth, per the respective General Plans.

Further, the project would have less than significant impact on emergency access. During construction, the contractor would maintain one lane of traffic in each direction on Market Street to minimize any potential response times delays. In the long-term, it is anticipated that the wider bridge replacement with additional through lanes would better serve emergency vehicles by reducing traffic congestion along Market Street. Measure TRA-1 in Section XVIII would be implemented to further reduce temporary impacts to emergency access as a result of construction activities to a less than significant level.

a (iii) **No Impact**. The project does not include a residential component; therefore, no direct increase in population would occur requiring additional school facilities.

a (iv) **Less than Significant**. The proposed project will widen a portion of the bridge structure directly overhead the Santa Ana River Trail pedestrian undercrossing by approximately 50 feet to accommodate the widened roadway. The proposed project would also require a temporary closure of a section of the Santa Ana River Trail; however, the trail exit/entrance ramps at Market Street will remain open to the public for the duration of construction, providing trail users with restricted access. The temporary closing for the falsework/formwork could be for up to a month at a time. A detour for the Trail user will be established. A minimum 300-foot distance of non-use on either side of the bridge would be established to ensure public safety. The detour would direct trail users to exit the Santa

Ana River Trail via the Market Street pedestrian exit/entrance ramps (approximately 300 feet from Market Street Bridge), travel parallel with Market Street towards Rivera Street, then utilize the crosswalk at Rivera Street and travel back along Market Street to the pedestrian exit/entrance ramp. Impacts related to temporary closure of the Santa Ana River Trail would be less than significant.

a (v) **Less than Significant.** As part of the Market Street Bridge Replacement Project, a permanent sliver of the Riverside County Flood Control and Water Conservation District right-of-way to the southeast of the Market Street Bridge is necessary. Furthermore, an access road to the levee southwest of the Market Street Bridge would be relocated. However, no significant impacts would occur to the operations of the Riverside County Flood Control and Water Conservation District.

Avoidance, Minimization, and/or Mitigation Measures

See Measure TRA-1 in Section XVIII for Transportation.

XVII. RECREATION:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a-b) **Less than Significant.** The proposed road widening would not 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. The proposed project will widen a portion of the bridge structure directly overhead the Santa Ana River Trail pedestrian undercrossing by approximately 50 feet to accommodate the widened roadway. The proposed project would also require a temporary closure of a section of the Santa Ana River Trail; however, the trail exit/entrance ramps at Market Street will remain open to the public for the duration of construction, providing trail users with restricted access. The temporary closing for the falsework/formwork could be for up to a month at a time. A detour for the Trail user will be established. A minimum 300-foot distance of non-use on either side of the bridge would be established to ensure public safety. The detour would direct trail users to exit the Santa Ana River Trail via the Market Street pedestrian exit/entrance ramps (approximately 300 feet from Market Street Bridge), travel parallel with Market Street towards Rivera Street, then utilize the crosswalk at Rivera Street and travel back along Market Street to the pedestrian exit/entrance ramp. Impacts related to temporary closure of the Santa Ana River Trail would be less than significant.

Avoidance, Minimization, and/or Mitigation Measures

None.

XVIII. TRANSPORTATION : Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☒	☐	☐

Source(s): Traffic Operations Report, Market Street Bridge Replacement Project (2018).

Findings of Fact:

Affected Environment

The project is located at the border between the City of Riverside and City of Jurupa Valley, California. The Market Street Bridge has one lane in each direction and serves as a connector for Riverside and communities to the north, including Fontana, Bloomington, and Rialto. The proposed project will widen the Market Street Bridge and add an additional travel lane in each direction, shoulders, and a Class I bicycle path on the north side of Market Street. The proposed project will also add a dedicated northbound right turn lane at the intersection of Market Street and 24th Street/Via Cerro and restripe the southbound approach to include a shared through-right, through and dedicated left-turn lane.

Analysis of transportation facility operations is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the Highway Capacity Manual, 2010 (HCM). Table 19 below shows the LOS delays associated with each description.

Table 19. Intersection Level-of-Service Definitions

Description		Signalized Intersection Delay (seconds per vehicle)	Unsignalized Intersection Delay (seconds per vehicle)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10	≤ 10
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	>10 and ≤ 20	>10 and ≤ 15
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20 and ≤ 35	>15 and ≤ 25
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues.	>35 and ≤ 55	>25 and ≤ 35
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	>55 and ≤ 80	>35 and ≤ 50
F	Forced flow. Represents jammed conditions. Backups form locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	>80.0 or V/C > 1	>50

A Traffic Operations Report (TOR) was prepared for the Market Street Bridge Replacement project in January 2018. Opening and Future Year daily and peak hour volumes were forecasted for all roadway segments and intersections in the proposed project area.

Operational improvements on the Market Street Bridge will improve traffic conditions and reduce delay to acceptable levels. Roadway segments and intersections directly to the north and south of the proposed project area were also analyzed within this section to evaluate traffic impacts as a result of the proposed project. The 2018 TOR provides level-of-service AM and PM analysis for the following study intersections:

1. Market Street & Via Cerro/24th Street
2. Market Street & Rivera Street

The following time frames were analyzed in this traffic analysis:

1. Existing Year 2017 Conditions
2. Forecast Opening Year 2025 No Build Conditions
3. Forecast Opening Year 2025 Build Conditions
4. Forecast Year 2045 No Build Conditions
5. Forecast Year 2045 Build Conditions

The results of the level-of-service intersection analysis are provided below in Table 20.

Table 20. Intersection Level-of-Service Calculation Summary

AM Peak Hour					
Intersection	**Existing Conditions (Year 2017)**	**Opening Year 2025 "No Project"**	**Opening Year 2025 "With Project"**	**Forecast Year 2045 "No Project"**	**Forecast Year 2045 "With Project"**
	LOS – Delay	**LOS – Delay**	**LOS – Delay**	**LOS – Delay**	**LOS – Delay**
Market Street & Via Cerro/24th Street	C – 35 sec.	B – 17 sec.	B – 13 sec.	D – 40 sec.	C – 22 sec.
Market Street & Rivera Street	B - 16 sec.	B – 18 sec.	B – 17 sec.	C – 26 sec.	C – 24 sec.
PM Peak Hour					
Intersection	**Existing Conditions (Year 2016)**	**Opening Year 2025 "No Project"**	**Opening Year 2025 "With Project"**	**Forecast Year 2045 "No Project"**	**Forecast Year 2045 "With Project"**
	LOS – Delay	**LOS – Delay**	**LOS – Delay**	**LOS – Delay**	**LOS – Delay**
Market Street & Via Cerro/24th Street	F – 96 sec.	D – 37 sec.	C – 27 sec.	F – >120 sec.	C – 53 sec.
Market Street & Rivera Street	B – 17 sec.	B – 19 sec.	C – 24 sec.	C – 26 sec.	C – 26 sec.

Source: Dokken Engineering, Market Street Bridge Replacement Traffic Operations Report, January 2018

With the proposed Market Street Bridge Replacement, all examined intersections and are expected to improve LOS under Opening Year Build conditions.

In addition to intersection LOS, the existing average daily traffic (ADT) was used to determine the LOS, which is considered the segment along Market Street between the study intersections. The segment currently has two lanes and is classified as an arterial. Its two-way ADT is 18,333; therefore, the roadway segment currently operates at LOS E, which is unacceptable per the General Plan guidelines for the City of Riverside and the draft guidelines for the City of Jurupa Valley General Plan.

Construction Year (2025) average daily traffic (ADT) was used to determine the LOS along the study segment. In the With Project scenario, the segment has four lanes and is classified as an arterial road. Its two-way ADT was forecast to be 22,270; therefore, the roadway segment operates at LOS D, which is acceptable per the General Plan guidelines for the City of Riverside and the draft guidelines for the City of Jurupa Valley General Plan. In the No Project scenario, the segment has only two lanes and is classified as an arterial. Its two-way ADT was forecast to be 22,270; therefore, the roadway segment operates at LOS E, which is unacceptable per the General Plan guidelines for the City of Riverside and the draft guidelines for the City of Jurupa Valley General Plan.

Design Year (2045) average daily traffic (ADT) was used to determine the LOS along the study segment. In the With Project scenario, the segment has four lanes and is classified as an arterial road. Its two-way ADT was forecast to be 32,110; therefore, the roadway segment operates at LOS D, which is acceptable per the General Plan guidelines for the City of Riverside and the draft guidelines for the City of Jurupa Valley General Plan. In the No

Project scenario, the segment has two lanes and is classified as an arterial. Its two-way ADT was forecast to be 32,110; therefore, the roadway segment operates at LOS E, which is unacceptable per the General Plan guidelines for the City of Riverside and the draft guidelines for the City of Jurupa Valley General Plan.

Environmental Consequences

a) **No Impact.** Under Build conditions, it is expected that the volumes will remain the same within the project area. The study intersections are expected to operate at acceptable levels of service (LOS C or better) under Opening Year Build conditions, which is acceptable per the General Plan guidelines for the City of Riverside and the City of Jurupa Valley General Plan. It is concluded that given the proposed bridge replacement from two to four lanes and the associated operational improvements, Market Street Bridge is generally expected to have improved traffic operating conditions in the project opening year as well as future horizon year of 2015.

The project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. This takes 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, pedestrians and bicycle paths, and mass transit. The Market Street Bridge would be replaced and widened to provide two travel lanes in each direction to accommodate future growth and traffic needs which would be consistent with local and regional plans.

Further, there would be no conflicts with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, and performance or safety of such facilities. The bridge would be wide enough to accommodate bicycle lanes and pedestrian facilities.

b) **No Impact.** CEQA Guidelines section 15064.3, subdivision (b) requires projects to analyze changes in vehicle miles traveled (VMT) as a result of projects. The proposed project has the same ADT under both No Project and With Project conditions for the Construction Year and Design Year; therefore, it is assumed the VMT will be the same with and without the proposed project. It is concluded that while the proposed bridge replacement will widen the existing bridge from two to four lanes and with the associated operational improvements, the project would not be in conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

c) **No Impact.** The project would be designed in compliance with roadway and bridge standards as set forth by Caltrans and the Federal Highway Administration. Additionally, the project would not increase hazards due to design features as there are no proposed sharp curves or new potentially dangerous intersections. Further, no farm equipment or any other potentially incompatible uses which could potentially create a hazard are anticipated to utilize the facility.

d) **Less Than Significant with Mitigation Incorporated.** The Market Street Bridge would remain open throughout construction for through traffic. Response times are not anticipated to be affected during construction. In the long-term, it is anticipated that the widened road would better serve emergency vehicles by reducing traffic congestion along the Market Street Bridge. TRA-1 would be implemented to minimize any potential impacts to emergency service access.

Avoidance, Minimization, and/or Mitigation Measures

TRA-1: Temporary impacts to traffic flow as a result of construction activities would be minimized through construction phasing and signage and a traffic management plan (TMP).

XVIX. UTILITIES AND SERVICE SYSTEMS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☒	☐	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment or solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

a) **Less Than Significant with Mitigation Incorporated.** While wastewater and storm water in the form of run-off from the construction site may result, BMPs and drainage improvements would be implemented in compliance with the NPDES General Construction permit to minimize impacts. Permanent BMPs would also be incorporated into the project as feasible, consistent with the Santa Ana Region MS4 permit. It is anticipated that utilities including electric power, natural gas, and telecommunications facilities would need to be relocated from the old bridge to the new bridge during construction; however, is it not anticipated that relocation of these utilities would cause significant environmental effects. Further, implementation of Measures WQ-1 and WQ-2 would ensure wastewater treatment or storm water drainage would not be exceeded, and impacts would be less than significant with mitigation incorporated.

b) **No Impact.** The project would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

c) **Less Than Significant with Mitigation Incorporated**. The project will add a net impervious surface of approximately 3.9 acres to the area; however, the project will construct storm water drainage improvements to channel runoff more efficiently, reduce erosion, and convey runoff to a controlled location at appropriate locations. These improvements would ensure the project provides adequate capacity to treat wastewater and would not result in a determination by the wastewater treatment provider that it could not meet the projected demand as a result of the project. Further, implementation of Measure WQ-1 and WQ-2 would ensure permanent BMPs are incorporated into the project and impacts would be less than significant with mitigation incorporated.

d) **Less Than Significant.** As a transportation project, the project would not generate substantial solid waste during operation. During construction, solid waste may be generated from modification of currently paved portions, however, the amount is not expected to exceed landfill capacities.

e) **No Impact.** The proposed project would comply with federal, state, and local statutes and regulations related to solid waste.

Avoidance, Minimization, and/or Mitigation Measures

See Measures WQ-1 and WQ-2 listed in Section XI for Hydrology and Water Quality.

XX. WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Source(s): City of Jurupa Valley General Plan (2017) & City of Riverside General Plan (2007).

Findings of Fact:

While the project is not located within a state responsibility area and is not within a designated "very high fire hazard severity" area, and will have no impacts to wildfire, discussion for each .

a) **No Impact.** The Market Street Bridge would remain open throughout construction for through traffic. Neither Emergency response plans or emergency evacuation plans are anticipated to be affected during construction. In the long-term, it is anticipated that the widened road would better serve emergency response plans and emergency evacuation plans by reducing traffic congestion along the Market Street Bridge; however, as the project is not located within a state responsibility area and is not within a designated "very high fire hazard severity" area, it is anticipated there will be no impact.

b) **No Impact.** The project would not exacerbate wildfire risks as the project would not change any of the existing slopes associated with the Santa Ana River levee system. The project is a bridge replacement project and does not increase the number of occupants within or adjacent to the project area.

c) **No Impact**. The project would require installation and maintenance of the replacement bridge and widening of existing roadways; however, neither installation or maintenance

are anticipated to exacerbate fire risk or result in temporary or ongoing impacts to the environment.

d) **No Impact.** The project would not expose people or structures to downslope or downstream flooding or landslides as the project would not change any of the existing slopes or grades adjacent to the project or associated with the Santa Ana River levee system. The proposed project is anticipated to include storm water drainage improvements to channel runoff more efficiently, reduce erosion, and convey runoff to a controlled location at appropriate locations; however, as the project is not located within a state responsibility area and is not within a designated "very high fire hazard severity" area, it is anticipated there will be no impact.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Findings of Fact:

a) **Less Than Significant with Mitigation Incorporated:** As discussed in Section IV Biological Resources, less than significant impacts are anticipated with inclusion of appropriate mitigation measures, BIO-1 to BIO-33. Inclusion of these measures would ensure that the project would not 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, substantially reduce the number or restrict the range of a rare or endangered plant or animals.

Based on results of the site records and survey reports the project would not eliminate important examples of the major periods of California history or prehistory.

b) **Less Than Significant:** The proposed project would not have impacts that are individually limited, but cumulatively considerable. A discussion of key affected resource areas follow:

Aesthetics: Cumulatively considerable impacts would not result. The project would implement aesthetics such as textured concrete barriers stained to be more compatible with the natural background and to harmonize with the surroundings.

Agriculture and Forest Resources: Cumulatively considerable impacts are not anticipated. There are no farmlands located within the project vicinity.

Air Quality: Cumulatively considerable impacts are not anticipated as the project satisfies the analysis for regional and project-level transportation conformity as shown in the RTP.

Biological Resources: The Project is a covered Project in the Western Riverside County MSHCP and will be adhering to all Western Riverside County MSHCP required measures. The project will comply with the Western Riverside County MSHCP as well as other state and local environmental regulations. As discussed in the Biological Resources Report for the project, the project includes avoidance, minimization, and mitigation measures to reduce impacts to the biological environment. It is not expected that the project would substantially contribute to cumulative effects to any protected species or their habitats. No additional cumulative impacts are anticipated.

Energy: The project is anticipated to be compliant with local plans for energy efficiency and is not anticipated to result in wasteful, inefficient, or unnecessary consumption of energy resources. As the project is implementing measures to reduce energy consumption, the project is not anticipated to cumulatively contribute to impacts to energy.

Hazards and Hazardous Materials: As a transportation project, the project does not consist of increased hazardous materials-related land uses. As discussed in the Hazardous Waste section, proper handling for removal of yellow-striping is recommended during construction. No long-term impacts are anticipated.

Hydrology and Water Quality: Cumulatively considerable impacts to water quality would not result as part of the proposed project. The project will follow MS4 guidelines for long-term, post construction storm water runoff ensuring any additional stormwater would be subject to water quality treatments. No changes to water quality in the vicinity of the proposed project is anticipated as a result of the proposed project.

Land Use and Planning and Population and Housing: While the project widens an existing bridge and potentially could influence growth, this would not be an unplanned affect. As discussed in the Land Use section of this document, the project does not conflict with the County General Plan land use element. The project would accommodate future planned land uses and cumulatively considerable effects on growth or land use would not result. No land use changes in vicinity of the proposed project are anticipated as a result of the proposed project.

Noise: Cumulatively considerable impacts are not anticipated. Noise impacts as a result of construction would be temporary and intermittent.

Transportation: As discussed in the Traffic section of this document, the project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. The Market Street Bridge would be widened to provide two travel lanes in each direction to accommodate future growth and traffic needs which would be consistent with local and regional plans.

Adjacent projects within include the Mission Boulevard Bridge Replacement and a 13,558 square foot commercial development consisting of a gas station, drive-thru car wash, convenience store and two restaurants north of the Market Street bridge. Considering this project aims to alleviate future traffic congestion along this roadway, it is not expected that the project would substantially contribute to cumulative effects to transportation or traffic. No additional cumulative impacts are anticipated.

Wildfire: Cumulatively considerable impacts are not anticipated. The project is not located within a state responsibility area and is not within a designated "very high fire hazard severity" area. The project is anticipated to improve emergency response times which could potentially decrease the impacts of nearby wildfires when considered regionally. No changes to the potential for wildfire to impact the region is anticipated as a result of the project.

c) **Less Than Significant.** No substantial adverse effects on human beings, either directly or indirectly, are anticipated. Construction noise would be minimized through timing restrictions and a traffic control plan would be implemented to manage traffic movements and allow for emergency detour routes.

Avoidance, Minimization, and/or Mitigation Measures

Please see individual sections for related measures.

List of Preparers

The following is a list of persons who participated in the Initial Study or prepared technical studies for this project.

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Dokken Engineering

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Courtney Owens, Environmental Planner/Biologist. M.S. in Environmental Policy; 8 years biological experience. Contribution: Natural Environment Study, Water Quality Assessment Report.

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Brian Marks, Associate Environmental Planner, B.S. in Environmental Science, 20 years of experience. Contribution: Cultural Resources Report; GIS Mapping.

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Appendix A Mitigation Monitoring and Reporting Plan

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE MARKET STREET BRIDGE REPLACEMENT PROJECT

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
AESTHETICS **VIS-1.** Lighting will be appropriately shielded. The project's lighting design must be consistent with the City of Jurupa Valley, the City of Riverside, and Riverside County lighting guidelines and standards.	Final Design	County of Riverside		
VIS-2. Concrete surfaces will be heavily textured to discourage graffiti and minimize recurring maintenance activities associated with graffiti removal. Additionally, concrete surfaces will be aesthetically treated or stained natural colors be more compatible with the surrounding environment.	Final Design	County of Riverside		
VIS-3. As feasible the barrier/bridge rail fence shall be powder or vinyl color coated to meet aesthetic needs and to minimize glare.	Final Design	County of Riverside		
VIS-4. Implement dust suppression measures as applicable from South Coast Air Quality Management District (SCAQMD) Rules and Regulations, Rule 403 Fugitive Dust and Caltrans Standard Specifications for Construction, Sections 10 and 18 (Dust Control).	During Construction	Contractor		
AIR QUALITY **AQ-1**: The Wind Erosion Control BMP (WE-1) from Caltrans' Construction Site Best Management Practices Manual will be implemented as follows: • Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution. • All distribution equipment shall be equipped with a positive means of shutoff. • Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the project.	During Construction	Contractor		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
• If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked "NON-POTABLE WATER – DO NOT DRINK." Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits.				
BIOLOGICAL RESOURCES **BIO-1:** Construction personnel would attend biological awareness training prior to working within the Project Area. The biological awareness training would include a description of special status species and habitats and identify mitigation measures that must be complied with.	Prior to and During Construction	Biological Monitor, County of Riverside and Contractor		
BIO-2: Prior to the start of construction activities, the Project limits in proximity to riparian/riverine habitats will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters or any other biologically sensitive resources detected required during pre-construction surveys. The Project biologist throughout construction will periodically inspect the ESA to ensure sensitive locations remain undisturbed.	Prior to Construction	Biological Monitor, County of Riverside and Contractor		
BIO-3: The County will re-contour the SAR R4 river bottom and adjacent lands that encounter temporary impacts to pre-construction conditions.	Final Design	County of Riverside		
BIO-4: Compensatory mitigation for riparian/riverine areas will occur such that the project will be equivalent or superior to existing conditions. The identification of proposed compensatory mitigation areas shall be coordinated with representatives of the Riverside County Flood Control and Water Conservation	During Construction	County of Riverside and Contractor		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
District. On-site and off-site mitigation shall be provided based on the following: • 1.48 acres. To help off-set the temporal loss of riparian vegetation due to 0.74 acres of shade impacts, payment at a 2:1 ratio to the Santa Ana River Watershed in-lieu fee program will be made. This fee will be paid following completion of the NEPA/CEQA environmental documents, rather than prior to construction. If pre-project mitigation is ultimately infeasible, coordination of alternative mitigation strategies shall be conducted with the wildlife agencies. • 16.43 acres. To help off-set the temporal loss of riparian vegetation through temporary impacts to 12.48 acres of riverine/riparian at a 1.25:1 ratio and temporary impacts to 0.83 acres currently occupied by the existing bridge at a 1:1 ratio, implementation of a 5-year Invasive Species Removal Program for 16.43 acres within the Santa Ana River will occur. The locations for the invasive species removal will include the project site and additional sites shall be coordinated with the Riverside County Flood Control District. It is anticipated that each year, there will be a focus on a different 16.43 acres within the Santa Ana River depending upon the identified needs at that time. Additionally, it is anticipated that control efforts each year will involve multiple removal/control efforts. Prior to construction, an Invasive Species Removal Plan will be prepared and will be submitted to the WRMSHCP agencies, including the Western Riverside County Regional Conservation Authority, U.S. Fish & Wildlife Service, and the California Department of Fish and Wildlife, for review and approval.				
BIO-5: Focused surveys shall be conducted to identify locations of Santa Ana River woollystar in the months of June and July preceding vegetation clearing or other grading activities.	Prior to Construction	Biological Monitor / County of Riverside		
BIO-6: If it is not feasible to avoid effects to the Santa Ana River woollystar within the Public/ Quasi-Public Lands, seed shall be collected during the summer and fall prior to vegetation clearing or other grading activities. Seed shall be collected once the plants have matured and seeds senesce. Additionally, soil shall be collected in a one-foot radius to a depth of one-inch around each plant. In the event effects to the Santa Ana River woollystar within Public/Quasi-Public lands are avoided Mitigation Measure BIO-7 shall not be required.	Prior to Construction	Biological Monitor / County of Riverside		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
BIO-7: If it is determined that seed collection is required (refer to Mitigation Measure BIO-15), half of the collected seed and soil will be dispersed outside of the project footprint subsequent to seed collection and the other half of the collected seed and soil will be retained by a seed collection company (such as S&S Seed) for site restoration following project completion. Prior to seed dispersal, the location of the seed dispersal and revegetation activities shall be coordinated with representatives of the Riverside County Flood Control and Water Conservation District.	Prior to and After Construction	Biological Monitor / County of Riverside		
BIO-8: Removal of riparian vegetation will occur prior to construction and between September 1st and February 14th to avoid least Bell's vireo breeding season, as well as the general breeding season for other nesting birds. If vegetation remove must occur during the breeding season, a qualified biologist(s) will conduct a pre-construction survey for least Bell's Vireo and other migratory bird species within three days of the start of construction from February 15th through August 31st. Any active nests identified within the Project Area or within 300-feet of the Proposed Project Area may be marked with a 300-foot buffer, and the buffer area may need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. Any buffer smaller then 300-feet must be approved by qualified regulatory biologists prior to working within the buffer.	Prior to and During Construction	Biological Monitor, County of Riverside, and Contractor		
BIO-9: A qualified project biologist shall conduct pre-construction, take-avoidance surveys for burrowing owls no earlier than 14 days prior to ground-disturbing activities within the construction area, or if time lapses between project activities for 14 days or more, subsequent pre-construction avoidance surveys, including, but not limited to an additional survey within 24 hours of ground-disturbing activities shall be conducted. Focused burrowing owl surveys shall be conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 Staff Report; CDFG 2012), with the exception of the survey buffers, which follows the California Burrowing Owl Consortium (1993). Surveys shall be conducted by walking 20-meter transects. Pre-construction surveys shall be conducted within a reasonable buffer around the area, generally 150 meters (492 feet). If burrowing owl, including any active burrowing owl burrows, are not found during the pre-construction survey, no further action is required.	Prior to and During Construction	Biological Monitor / County of Riverside		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
If pre-construction focused burrowing owl surveys determine that burrowing owls occupy the project area, a tiered approach referred to as an Avoidance and Relocation Strategy shall be implemented to avoid burrowing owls, relocate burrowing owls, and prevent recolonization of areas (where needed, such as construction and/or substation areas) by burrowing owls. These methods generally adhere to the recommendations contained in the *Staff Report on Burrowing Owl Mitigation* currently used by CDFW to guide burrowing owl mitigation measures. If burrowing owls occupy the project area, including within the 150-meter buffer, the qualified project biologist will evaluate each occupied burrow to determine whether the proposed project is likely to directly impact or substantially indirectly impact the burrow such that injury or death of a burrowing owl could occur. Avoidance buffers can be implemented to avoid direct and substantial indirect impacts to owl burrows and individuals. A substantial indirect impact would be a situation where even though the burrow is not directly impacted during construction, the construction activities could potentially cause injury or mortality of owls, including from collisions with nearby construction equipment, vehicles, fences, or walls. The project biologist will have discretion in determining whether an indirect impact is substantial. Avoidance buffers shall be strictly required for occupied nest burrows so that nesting activities are not disturbed and nesting pairs have the opportunity to rear and successfully fledge young. Per the guidelines outlined by the *Staff Report on Burrowing Owl Mitigation*, a standard minimum avoidance buffer ranging between 200 meters (656 feet) and 500 meters (1,640 feet) will be initially applied to occupied nest sites between April 1 and October 15. Burrows will be monitored by the project biologist to determine if a smaller buffer would be adequate to protect the active nest site. A smaller buffer may be implemented, but only after consultation with and approval from CDFW. If avoidance of occupied burrowing owl burrows is not possible, and removal of occupied burrows is unavoidable, passive relocation methods are to be used by the biological monitors to move the owls out of the impact zone. One-way doors are to be installed in the entrances of occupied burrows. This will allow any				

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. A period of at least one week is required after the installation of one-way doors relocation effort to allow the birds to leave the impacted area before construction can begin. Each burrow must be scoped to ensure no burrowing owls remain within the burrows before excavation can begin. The burrows should then be excavated by hand and filled in to prevent reuse. Any potentially suitable unoccupied burrows in the path of construction must also be scoped and collapsed prior to the installation of the one-way doors to prevent the burrowing owls from relocating within the project area. The removal of active burrows on- site requires construction of new burrows or the enhancement of existing unsuitable burrows (i.e., enlargement or clearing of debris) at least one week prior to passive relocation efforts. Burrow mitigation will occur at a ratio of 2:1 at least 50 m (164 ft) from the impacted area but within 80 m (262 ft) of the current burrows. Burrows must be constructed as part of the above-described relocation efforts and be completed before relocation efforts begin. Compensatory burrow construction should occur at least 7 days prior to passive owl relocation and should be located at least 50 m (164 ft) from the project area and literature suggests that burrowing owls are more likely to voluntarily relocate to artificial burrows installed within 75 m (246 ft) of their old burrows (Trulio 1995). Burrowing owls are semi-colonial and have a preference for sites with multiple burrow options and other resident burrowing owls in the vicinity. Artificial burrows should be installed in pairs 165 to 250 ft away from the currently occupied burrows with approximately 30 ft between paired burrows. The habitat around the artificial burrow sites is very similar to the area around the natal burrows and is expected to provide the same quality of foraging habitat. The exact location of each burrow will be determined in the field to ensure the burrows are placed in the best possible micro-topography to prevent flooding and allow resident owls optimal foraging opportunities and safety from predators. Artificial burrows should be constructed of plastic parts to increase longevity and reduce construction time. Burrow design should be consistent with the recommendations of the *Global Owl Project: Users Guide to Installation of*				

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
Artificial Burrows for Burrowing Owls (Johnson 2010). The main nest chamber of each burrow should consist of half a 55 gallon plastic drum or similar with one or two access tunnels. The floor of the nest chamber should be approximately 3 ft below ground level. The access tunnels should be constructed of either 4 or 6 inch diameter flexible drain pipe. If 6 inch diameter pipe is selected, a 2 inch strip along the bottom of the pipe should be removed to provide a level walking surface for resident owls. Access tunnels should be approximately 6 to 10 ft long and be installed with a vertical shallow s-bend to prevent water from flooding the nest chamber. Each access tunnel should also be installed with at horizontal bend to provide the necessary darkness within the nest chamber and should gently slope down along the entire length of the tunnel. Nest entrances should be designed to provide protection from predation. The entrances to artificial burrows should be constructed of 6 inch diameter pipe tapering to a 4 inch diameter pipe approximately 12 inches from the entrance or should include a 4 inch diameter predator exclusion collar at this location instead. This will allow multiple owls to enter the tunnels quickly while still excluding common mammalian predators like skunks. Entrances should also be "armored" by surrounding them with rocks or concrete pieces and sleeved in hard PVC pipe to discourage excavation by coyotes or domestic dogs. Short perches (< 2 ft) should also be installed in front of each artificial burrow. This will provide an area for resident owls to watch for predators and forage. Tall perches are unsuitable as they encourage other avian species to utilize them. Perches can be a short post or be made from locally sourced dead branches. Perches should always be located in front of a burrow entrance to allow resident owls to check for predators before leaving the burrow. The status of burrowing owls surrounding the project area will be monitored periodically during construction. The focus of the periodic monitoring will be to ensure that no burrowing owls have relocated to the project area and that burrowing owls in adjacent natural and artificial burrows are not being affected by project activities. If it is determined that resident owls are being impacted, shelter in place strategies such as building a hay-bale screen between the burrows and construction may be employed.				

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
The project area and the artificial burrows will be monitored during the breeding season the year after passive relocation efforts take place. The focus of the monitoring effort will be to determine if burrow relocation was successful at the site. Artificial burrows and any potentially occupied burrows should be continuously observed for one hour from a distance of approximately 30 m (100 ft) so as not to intimidate burrowing owls from emerging or returning to the burrow. Alternately, the entrance of each observed burrow should be swept clean and checked after 24 hours for evidence of burrowing owl activity.				
If pile driving activities occur during nesting season, the following measures would be implemented: **BIO-10**: The Project would sponsor placement of two cowbird traps for each nesting season that pile driving activities occur. This measure would improve the productivity of least Bell's vireo during nesting season, due to the potential loss in temporary reproductive output for any pile driving related noise effects during nesting season.	During Construction	Biological Monitor and County of Riverside		
BIO-11: If an active least Bell's vireo nest is identified within 1,000 linear feet of the Project impact area and pile driving activities are occurring during the least Bell's vireo nesting season (March 15 through July 15), a biological monitor will conduct daily site visits to document how pile driving activities affect nesting least Bell's vireo. This data collection will be utilized by USFWS to provide guidance for future Projects and will not impose additional restrictions on this Project. If the Mission Boulevard Bridge Replacement at the Santa Ana River Project and the Market Street Rehabilitation Project are constructed at the same time, RCA and the wildlife agencies recommended the County hire the same biological monitor to conduct least Bell's vireo monitoring. By utilizing the same biological monitor for both Projects, it will ensure that methods are consistent, and the results are holistically analyzed. Additionally, if the Project at Mission Boulevard should be constructed first, the Project at Market Street should coordinate with RCA and the appropriate wildlife agencies to develop the monitoring strategy based on information gathered while monitoring during pile driving activities at the Project at Mission Boulevard. The Proposed Project reserves the right to	During Construction	Biological Monitor and County of Riverside		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
revise least Bell's vireo monitoring plans based on the findings from Mission Boulevard Bridge Replacement at the Santa Ana River Project.				
BIO-12: During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. To minimize the construction-generated noise, abatement measures in standard Specification 14-8.02, "Noise Control" and SSP 14-8.02 must be followed: • Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m. • Equip an internal combustion engine with the manufacturer recommended muffler. • Do not operate an internal combustion engine on the job site without the appropriate muffler.	During Construction	County of Riverside and Contractor		
BIO-13: Prior to beginning any pile driving activities, the contractor will implement "pre-noise" and "pre-vibration" precautions and allow equipment with operations of ≥ 6,000 RPM to idle for 5-10 minutes to permit Santa Ana suckers in the vicinity the opportunity to vacate the Project Area.	During Construction	Contractor		
BIO-14: Equipment used that causes vibration from movement or operation (e.g. operations ≥ 6,000 RPM) should be avoided for periods of use longer than 10 minutes. The engine controls will be used so that only during high demand would the operator need to "rev" the engine to conduct the work. When in water, this engine control method will be used when possible. Work conducted beyond 30 -ft. of the river edge, no engine RPM control would be necessary, based upon studies by Laikre 2010; Hawkins and Popper 2014.	During Construction	Contractor		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
BIO-15: In-water work areas will be isolated from the rest of the water body and surrounding riparian areas and flows will be diverted using appropriate features such as filtration fencing, water dams, cofferdams, boulders and cobble. The intent of this MM is to avoid or minimize turbidity impacts on fish and habitat downstream of the construction area and to exclude fish from being entrained, trapped or isolated from the river.	During Construction	Contractor		
BIO-16: The Project will not inhibit passage of any listed fish species, regardless of life stage, during or following completion of construction of the Project. When feasible, a bypass system or diversion will be installed during construction to permit both upstream and downstream passage of listed fish. The intent of this MM is to avoid interfering with the migration, rearing activities and natural dispersal of suckers and chub.	During Construction	Contractor		
BIO-17: If water diversion activities are necessary, an approved, qualified biologist will conduct a preliminary underwater survey of the affected area noting habitat and any fish present prior to any water diversion. Water diversions will be conducted outside of the spawning season for the species (approximately February 15 to July 31) to the greatest extent feasible. If the Santa Ana sucker is found to be present, a relocation program will be implemented. The preconstruction survey and relocation program will require approval from the USFWS.	Prior to and During Construction	Biological Monitor and Contractor		
BIO-18: If Santa Ana sucker are found to be present, exclusion nets will be placed around the work area. Once diversion of flow is complete, exclusion nets will be removed. Seining will then be conducted inside the exclusion area to remove and relocate Santa Ana Sucker prior to the commencement of diversion activities. As the diversion of flow is taking place, the biologist(s) will patrol the dewatering area in order to capture stranded fish. A combination of seining, dip netting, and hand capture will be utilized. All captured Santa Ana sucker will be placed into coolers filled with river water. Fish will remain in coolers for the shortest time necessary. Air pumps will be used to maintain oxygenated water supply. The coolers will be kept shaded at all times. The water temperature in the coolers and condition of captured Santa Ana sucker will be closely monitored. Ice (or frozen water bottles) will be used, as	Prior to and During Construction	Biological Monitor and Contractor		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
necessary, to maintain cool water (similar to ambient or <85 degrees Fahrenheit). Any Santa Ana suckers removed from the site will be relocated upstream or downstream of the Project Area, as determined appropriate by the qualified biologist, in consultation with the USFWS. A summary report will be provided to the USFWS for all diversions resulting in relocation of Santa Ana sucker. If capture and relocation of Santa Ana sucker is necessary, it will be achieved through one or more of the following methods: the use of fine mesh [2–4 mm (0.08–0.16 in)], knotless seine nets; fine mesh [4–6 mm (0.16– 0.24 in] knotless hoop nets, modified hoop nets, or similar traps; or dip nets of 0.5 mm (0.20 in) or finer mesh for survey of larval Santa Ana sucker. The survey methods will be selected to minimize the potential injury or mortality to Santa Ana suckers and potential disturbance or damage to breeding areas. If seines are used, particular care shall be taken to avoid incidental injury or mortality to Santa Ana sucker that may be caught and suffocated in algal mats or sand. Care should also be taken to keep Santa Ana sucker in water as much as possible. Larval fishes should be kept submerged in a dip net until species is identified and released at the point of capture. Use of non-conventional sampling gear will first be approved by the USFWS. Prior to activities that may involve handling Santa Ana sucker, the qualified biologist will ensure that all participants' hands are free of sunscreen, lotion, or insect repellent. The qualified biologist will submit a brief report to the USFWS identifying the number of any native fish species that were relocated and any other measures that were taken to minimize impacts to Santa Ana sucker.	Prior to and During Construction	Biological Monitor and Contractor		
BIO-19: If water diversion is not required, highly visible barriers (such as ESA fencing) will be installed around the low-flow channel, and other areas of running water, and designated as an ESA to be avoided. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas of flowing water.	Prior to and During Construction	Biological Monitor and Contractor		

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE MARKET STREET BRIDGE REPLACEMENT PROJECT

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
BIO-20: If determined to be necessary, a humane eviction and exclusion of bats shall be performed under the guidance of a qualified bat biologist and the CDFW prior to bridge construction and especially bridge demolition activities.	Prior to and During Construction	Biological Monitor and Contractor		
BIO-21: Bridge demolition will occur outside of maternity season (April 15th - August 31st) to the greatest extent possible.	During Construction	Contractor		
BIO-22: During nighttime work for Project construction, night lighting shall be used only in the area actively being worked on and focused on the direct area of work. Additional, any night lighting shall be directed away from the culvert entrance to avoid affecting any roosting bats.	During Construction	Contractor		
BIO-23: Airspace access to and from the roost features of the bridge structure shall not be obstructed except in direct work areas.	During Construction	Contractor		
BIO-24: The removal of mature trees and snags should be minimized to the greatest extent practicable.	Prior to Construction	County of Riverside		
BIO-25: Trimming or removal of any mature trees (including untrimmed palm trees) and snags during the maternity season (April 1–August 31) shall be avoided to prevent "take" of nonvolant (flightless) young; this period approximately coincides with bird nesting season (typically February 1st–August 31st). If removal of mature trees (including trimming of palm fronds or removal of palm trees) during the bat maternity/bird nesting season is necessary for Project construction, all mature trees to be removed that have also been identified as containing suitable bat roosting habitat should be surveyed at night prior to removal. Any trees confirmed during those surveys as housing bat maternity colonies and/or special status bats will be avoided until the end of the maternity season.	Prior to and During Construction	Biological Monitor and Contractor		
BIO-26: Mature trees to be removed as part of the Project shall be more closely evaluated by a qualified bat biologist for their potential to support roosting bats. Trees that are identified as suitable bat roost sites shall be removed using a two-step process that occurs over a two-day period. On Day one, branches and limbs that do not contain crevices or cavities shall be removed using hand tools or chainsaws. The goal is to create a disturbance sufficient to cause any bats	Prior to and During Construction Prior to and	Biological Monitor and Contractor Biological		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
roosting in the tree to leave that night and not return, but not at a level of intensity that will cause bats to fly out of the tree during the disturbance itself (e.g. during the daytime, when leaving the roost will likely result in predation). On Day two, the remainder of the tree may be removed.	During Construction	Monitor and Contractor		
BIO-27: Idling or operation of engines within 100 -ft. of the culvert entrance, which is located approximately 200 feet due north of the existing bridge, shall be avoided.	During Construction	Contractor		
BIO-28: Eradication procedures (e.g., spraying and/or hand weeding) will be decided should an infestation occur; the use of herbicides will be prohibited within waters and near native vegetation, except as specifically authorized and monitored by the County- designated Project Biologist.	During Construction	Contractor		
BIO-29: All woody invasive species (e.g., tamarisk) and identified Arundo patches (0.11 acre) will be removed from the Project limits.	Prior to and During Construction	Contractor and County of Riverside		
BIO-30: If any wildlife is encountered during the course of construction, said wildlife must be allowed to leave the construction area unharmed.	During Construction	Contractor		
BIO-31: Plastic mono-filament netting (erosion control matting) or similar material that could trap wildlife must not be used. Acceptable substitutes include jute, coconut coir matting or tackified hydroseeding compounds.	Prior to and During Construction	Contractor		
BIO-32: To allow subterranean wildlife enough time to escape initial clearing and grubbing activities, equipment used during initial clearing and grubbing must be operated at speeds no greater than 3 miles per hour.	During Construction	Contractor		
BIO-33: The contractor must dispose of all food-related trash in closed containers, and must remove it from the Project Area each day during construction. Construction personnel must not feed or attract wildlife to the Project Area.	During Construction	Contractor		

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE MARKET STREET BRIDGE REPLACEMENT PROJECT

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
CULTURAL RESOURCES **CR-1:** If a significant archaeological resource(s) or tribal cultural resource is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). An archaeologist, who meets the Secretary of Interior Standards for an archaeologist, shall assess the discovery, and if the discovery involves Native American resources a representative of the concerned tribe(s) shall be contracted to assess significance. The archaeologist, a representative of the appropriate Native American Tribe(s), and the Riverside County Transportation Department shall confer regarding mitigation of the discovered resource(s). Work shall not resume in the area until mitigation has been completed or it has been determined that the archaeological resource(s) is not significant.	During Construction	Contractor and County of Riverside		
CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of such identification. Further provisions of PRC 5097.98 are to be followed as applicable.	During Construction	Contractor and County of Riverside		
GREENHOUSE GAS EMISSIONS **CC-1:** The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost $60 to $70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO_2 emissions.	During Construction	Contractor		

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE MARKET STREET BRIDGE REPLACEMENT PROJECT

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
HAZARDS AND HAZARDOUS WASTE **HAZ-1**: As is the case for any project that proposes excavation, the potential exists for unknown hazardous contamination to be revealed during project construction. If soil contaminated by hazardous waste is discovered during construction, proper hazardous waste handling and emergency procedures under 40 CFR § 262 and Division 4.5 of Title 22 CA Code of Regs shall be followed.	During Construction	County of Riverside and Contractor		
HAZ-2: Upon removal of yellow thermoplastic pavement striping during construction, it is recommended that removal requirements for yellow striping and pavement marking materials be performed in accordance with Caltrans Standard Special Provisions for REMOVE TRAFFIC STRIPE AND PAVEMENT MARKINGS.	During Construction	County of Riverside and Contractor		
HAZ-3: Any leaking transformers observed during the course of the project should be considered a potential polychlorinated biphenyl (PCB) hazard. A detailed inspection of individual electrical transformers was not conducted for this Phase I Environmental Site Assessment. However, should leaks from electrical transformers (that will either remain within the construction limits or will require removal and/or relocation) be encountered during construction, the transformer fluid should be sampled and analyzed by qualified personnel for detectable levels of PCB's. Should PCBs be detected, the transformer should be removed and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency. Any stained soil encountered below electrical transformers with detectable levels of PCB's should also be handled and disposed of in accordance with Title 22, Division 4.5 of the California Code of Regulations and any other appropriate regulatory agency.	During Construction	County of Riverside and Contractor		
HYDROLOGY AND WATER QUALITY **WQ-1**: The proposed project would require a National Pollution Discharge Elimination System (NPDES) General Construction Permit for Discharges of storm water associated with construction activities (Construction General Permit 2012-0006-DWQ). The construction contractor shall adhere to the SWRCB Order No. 2012-	Prior to and During Construction	County of Riverside and Contractor		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes storm water and authorized non-storm water discharges from construction activities. As part of this Permit requirement, a SWPPP shall be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP will incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.				
WQ-2: Post-construction storm water control requirements will be addressed in accordance with the Santa Ana River Watershed MS4 permit. Site Design BMPs will potentially include: • Bioswales: A bioswale will be included at the toe of slope on the east side of bridge abutments within the City of Riverside. • Permeable pavement will be incorporated into sidewalks within the project area. • Source control BMPs would include sweeping, drainage facility inspection and maintenance, MS4 stenciling and signage, and protection of slopes and channels.	During Construction	County of Riverside and Contractor		
WQ-3: All concrete will be poured in dry areas only, or within confined areas that have been dewatered to prevent surface water contact, and will be allowed to cure a minimum of 7 days before contact with any surface water. The intent of this MM is to prevent concrete from increasing the pH of natural water bodies by allowing concrete to fully cure prior to contact with river water.	During Construction	County of Riverside and Contractor		
WQ-4: Water pumped out of any construction area in an effort to keep ground water or surface water from re-filling a dewatered site will be discharged to a temporary storage and treatment site or to an upland area where it can be filtered through native vegetation prior to reentering the stream channel, or be allowed to percolate into the ground. Sediments that may be with the water will be allowed to settle in a temporary basin and then removed and disposed of at a landfill site or used in access road stabilization. Discharge of water back to the river will occur in such a manner as not to cause erosion. The intent of this measure is to protect the river from turbidity impacts associated with sediment-laden runoff.	During Construction	County of Riverside and Contractor		
WQ-5: Equipment will be checked daily for leaks and will be well maintained to prevent lubricants and any other deleterious materials from entering waters of the state.	During Construction	County of Riverside and		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
Prior to operating equipment on the banks of the active channel, all such equipment will be free of any external petroleum products, hydraulic fluid, and coolants. Wash water will not be discharged to any water body without pre-treatment and all wash activities will take place outside of the river floodplain. All equipment will have straw wattle rings around them during the night to prevent any leaking of petroleum into the water. Use of plastic tarping under the equipment will further reduce percolation of oil into the soil. The intent of this MM is to prevent pollutants from entering natural water bodies and affecting fish or their habitat through staging of equipment outside of the river floodplain during non-work hours. Equipment that is easily de-mobilized will be moved from the riverbed overnight. Larger equipment such as pumps and cranes will remain overnight unless flooding is imminent.		Contractor		
WQ-6: All materials, such as rock riprap, gravel, or large boulders placed within the water or along the river bank, will be free of fines, silt, soil, or other extraneous material and the use of natural materials will be initiated as much as practicable. An exception to the presence of fines is permitted if they are required as part of channel bed reconstruction or temporary sand berms using sand existing on-site.	During Construction	County of Riverside and Contractor		
NOISE **NOI-1:** The Contractor shall abide by the following for construction activities: • Work activities shall occur between the hours of 7:00AM and 7:00PM on week days and between 8:00AM and 5:00PM on Saturdays, excluding Sundays and federal holidays. An exemption from this ordinance may be granted by the City of Riverside, at the digression of the Public Works Director or his designee if it is determined construction will create traffic congestion and/or hazardous or unsafe conditions. • Equip an internal combustion engine with the manufacturer-recommended muffler. • Do not operate an internal combustion engine on the job site without the	During Construction	County of Riverside and Contractor		

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
appropriate muffler.				
NOI-2: Prior to the issuance of a grading permit, the developer is required to submit a construction-related noise mitigation plan to the City of Jurupa Valley Planning Department for review and approval. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project. In addition, the plan shall require that the following notes are included on grading plans and building plans. Project contractors shall be required to ensure compliance with the notes and permit periodic inspection of the construction site by City of Jurupa Valley staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors. "a) Haul truck deliveries shall be limited to between the hours of 6:00am to 6:00pm during the months of June through September and 7:00am to 6:00pm during the months of October through May. b) Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. c) All stationary construction equipment shall be placed in such a manner so that emitted noise is directed away from any sensitive receptors adjacent to the Project site. d) Construction equipment staging areas shall be located the greatest distance between the staging area and the nearest sensitive receptors."	During Construction	City of Jurupa Valley and Contractor		
TRANSPORTATION/TRAFFIC **TRA-1**: Temporary impacts to traffic flow as a result of construction activities would be minimized through construction phasing and signage and a traffic management plan (TMP).	Prior to and During Construction	County of Riverside and Contractor		

Appendix B Air Quality Road Construction Emissions Model and CT-EMFAC

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Market Street Bridge Replacement Project

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.06	10.25	10.46	10.47	0.47	10.00	2.49	0.41	2.08	0.02	2,229.04	0.59	0.02	2,250.92
Grading/Excavation	8.49	71.77	87.61	13.87	3.87	10.00	5.58	3.50	2.08	0.16	15,418.52	4.65	0.14	15,577.94
Drainage/Utilities/Sub-Grade	5.75	52.32	55.99	12.53	2.53	10.00	4.40	2.32	2.08	0.11	10,420.58	2.68	0.10	10,516.12
Paving	0.98	13.10	9.04	0.48	0.48	0.00	0.42	0.42	0.00	0.02	2,203.74	0.57	0.02	2,224.90
Maximum (pounds/day)	8.49	71.77	87.61	13.87	3.87	10.00	5.58	3.50	2.08	0.16	15,418.52	4.65	0.14	15,577.94
Total (tons/construction project)	1.25	11.00	12.55	2.43	0.56	1.87	0.90	0.51	0.39	0.02	2,280.98	0.65	0.02	2,303.54

Notes:

Project Start Year ->	2022
Project Length (months) ->	20
Total Project Area (acres) ->	10
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	280	40
Grading/Excavation	0	0	0	0	1,160	40
Drainage/Utilities/Sub-Grade	0	0	0	0	760	40
Paving	0	0	0	0	360	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Market Street Bridge Replacement Project

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.23	0.23	0.23	0.01	0.22	0.05	0.01	0.05	0.00	49.04	0.01	0.00	44.92
Grading/Excavation	0.75	6.32	7.71	1.22	0.34	0.88	0.49	0.31	0.18	0.01	1,356.83	0.41	0.01	1,243.63
Drainage/Utilities/Sub-Grade	0.44	4.03	4.31	0.96	0.19	0.77	0.34	0.18	0.16	0.01	802.38	0.21	0.01	734.59
Paving	0.03	0.43	0.30	0.02	0.02	0.00	0.01	0.01	0.00	0.00	72.72	0.02	0.00	66.61
Maximum (tons/phase)	0.75	6.32	7.71	1.22	0.34	0.88	0.49	0.31	0.18	0.01	1356.83	0.41	0.01	1,243.63
Total (tons/construction project)	1.25	11.00	12.55	2.43	0.56	1.87	0.90	0.51	0.39	0.02	2280.98	0.65	0.02	2,089.76

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

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       File Name:       Riverside (MD-SCAQMD) - 2017 - Annual.EC
CT-EMFAC Version:       6.0.0.29548
        Run Date:       12/1/2017 4:15:57 PM
            Area:       Riverside (MD/SCAQMD)
   Analysis Year:       2017
          Season:       Annual

======================================================================

Vehicle Category        VMT Fraction        Diesel VMT Fraction
                        Across Category   Within Category
         Truck 1              0.013              0.535
         Truck 2              0.117              0.991
       Non-Truck              0.870              0.010

======================================================================

     Road Length:            1 miles
          Volume:          590 vehicles per hour
 Number of Hours:            1 hours
Avg. Idling Time:          1.6 minutes per vehicle
Tot. Idling Time:        15.73 hours

VMT Distribution by Speed (mph):
               5            0.00%
              10            0.00%
              15            0.00%
              20            0.00%
              25            0.00%
              30            0.00%
              35            0.00%
              40           10.00%
              45           90.00%
              50            0.00%
              55            0.00%
              60            0.00%
              65            0.00%
              70            0.00%
              75            0.00%

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Summary of Project Emissions

Pollutant Name	Running Exhaust (grams)	Idling Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Total (grams)	Total (US tons)
HC	34.8	18.6	31.5	-	-	84.9	<0.001
ROG	29.9	14.7	33.7	-	-	78.3	<0.001
TOG	39.7	20.8	33.7	-	-	94.3	<0.001
CO	763.5	133.2	-	-	-	896.7	<0.001
NOx	373.1	75.3	-	-	-	448.4	<0.001
CO2	266,462.8	52,564.7	-	-	-	319,027.6	0.352
CH4	8.1	5.3	-	-	-	13.3	<0.001
PM10	2.7	0.6	-	6.6	24.7	34.6	<0.001
PM2.5	2.5	0.5	-	1.7	10.6	15.3	<0.001
Benzene	1.0	0.2	0.3	-	-	1.6	<0.001
Acrolein	<0.1	<0.1	-	-	-	<0.1	<0.001
Acetaldehyde	0.9	0.3	-	-	-	1.2	<0.001
Formaldehyde	2.0	0.7	-	-	-	2.7	<0.001
Butadiene	0.2	<0.1	0.0	-	-	0.2	<0.001
Naphthalene	<0.1	<0.1	<0.1	-	-	<0.1	<0.001
POM	<0.1	<0.1	-	-	-	<0.1	<0.001
Diesel PM	1.9	0.2	-	-	-	2.1	<0.001
DEOG	9.8	3.8	-	-	-	13.5	<0.001

==========END==========

```
       File Name:       Riverside (MD-SCAQMD) - 2025 - Annual.EC
CT-EMFAC Version:       6.0.0.29548
        Run Date:       12/1/2017 4:14:01 PM
            Area:       Riverside (MD/SCAQMD)
   Analysis Year:       2025
          Season:       Annual

======================================================================

Vehicle Category        VMT Fraction        Diesel VMT Fraction
                        Across Category   Within Category
         Truck 1               0.009               0.614
         Truck 2               0.121               0.992
       Non-Truck               0.870               0.012

======================================================================

     Road Length:             1 miles
          Volume:           720 vehicles per hour
 Number of Hours:             1 hours
Avg. Idling Time:          0.62 minutes per vehicle
Tot. Idling Time:          7.44 hours

VMT Distribution by Speed (mph):
                5             0.00%
               10             0.00%
               15             0.00%
               20             0.00%
               25             0.00%
               30             0.00%
               35             0.00%
               40            10.00%
               45            90.00%
               50             0.00%
               55             0.00%
               60             0.00%
               65             0.00%
               70             0.00%
               75             0.00%
```

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Summary of Project Emissions

Pollutant Name	Running Exhaust (grams)	Idling Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Total (grams)	Total (US tons)
HC	20.8	4.6	25.5	-	-	50.8	<0.001
ROG	18.0	3.7	27.2	-	-	48.9	<0.001
TOG	23.9	5.1	27.2	-	-	56.2	<0.001
CO	474.9	31.5	-	-	-	506.3	<0.001
NOx	128.1	19.2	-	-	-	147.3	<0.001
CO2	266,264.5	19,396.4	-	-	-	285,660.9	0.315
CH4	4.8	1.3	-	-	-	6.0	<0.001
PM10	1.4	0.2	-	8.2	29.8	39.6	<0.001
PM2.5	1.3	0.2	-	2.0	12.8	16.3	<0.001
Benzene	0.6	<0.1	0.3	-	-	0.9	<0.001
Acrolein	<0.1	<0.1	-	-	-	<0.1	<0.001
Acetaldehyde	0.5	<0.1	-	-	-	0.6	<0.001
Formaldehyde	1.2	0.2	-	-	-	1.4	<0.001
Butadiene	0.1	<0.1	0.0	-	-	0.1	<0.001
Naphthalene	<0.1	<0.1	<0.1	-	-	<0.1	<0.001
POM	<0.1	<0.1	-	-	-	<0.1	<0.001
Diesel PM	0.6	<0.1	-	-	-	0.7	<0.001
DEOG	6.3	1.0	-	-	-	7.3	<0.001

==========END==========

File Name:	Riverside (MD-SCAQMD) - 2025 - Annual.EC
CT-EMFAC Version:	6.0.0.29548
Run Date:	12/1/2017 4:14:54 PM
Area:	Riverside (MD/SCAQMD)
Analysis Year:	2025
Season:	Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category
Truck 1	0.009	0.614
Truck 2	0.121	0.992
Non-Truck	0.870	0.012

Road Length:	1 miles
Volume:	720 vehicles per hour
Number of Hours:	1 hours
Avg. Idling Time:	0.45 minutes per vehicle
Tot. Idling Time:	5.40 hours

VMT Distribution by Speed (mph):

5	0.00%
10	0.00%
15	0.00%
20	0.00%
25	0.00%
30	0.00%
35	0.00%
40	10.00%
45	90.00%
50	0.00%
55	0.00%
60	0.00%
65	0.00%
70	0.00%
75	0.00%

Summary of Project Emissions

Pollutant Name	Running Exhaust (grams)	Idling Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Total (grams)	Total (US tons)
HC	20.8	3.3	25.5	-	-	49.6	<0.001
ROG	18.0	2.7	27.2	-	-	47.9	<0.001
TOG	23.9	3.7	27.2	-	-	54.8	<0.001
CO	474.9	22.8	-	-	-	497.7	<0.001
NOx	128.1	14.0	-	-	-	142.0	<0.001
CO2	266,264.5	14,078.0	-	-	-	280,342.6	0.309
CH4	4.8	0.9	-	-	-	5.7	<0.001
PM10	1.4	0.2	-	8.2	29.8	39.5	<0.001
PM2.5	1.3	0.2	-	2.0	12.8	16.3	<0.001
Benzene	0.6	<0.1	0.3	-	-	0.9	<0.001
Acrolein	<0.1	<0.1	-	-	-	<0.1	<0.001
Acetaldehyde	0.5	<0.1	-	-	-	0.6	<0.001
Formaldehyde	1.2	0.1	-	-	-	1.4	<0.001
Butadiene	0.1	<0.1	0.0	-	-	0.1	<0.001
Naphthalene	<0.1	<0.1	<0.1	-	-	<0.1	<0.001
POM	<0.1	<0.1	-	-	-	<0.1	<0.001
Diesel PM	0.6	<0.1	-	-	-	0.6	<0.001
DEOG	6.3	0.7	-	-	-	7.0	<0.001

==========END==========

```
       File Name:       Riverside (MD-SCAQMD) - 2045 - Annual.EC
CT-EMFAC Version:       6.0.0.29548
        Run Date:       12/1/2017 4:17:15 PM
            Area:       Riverside (MD/SCAQMD)
   Analysis Year:       2045
          Season:       Annual

======================================================================

Vehicle Category        VMT Fraction        Diesel VMT Fraction
                        Across Category   Within Category
         Truck 1               0.007               0.680
         Truck 2               0.123               0.992
       Non-Truck               0.870               0.012

======================================================================

     Road Length:             1 miles
          Volume:         1,030 vehicles per hour
 Number of Hours:             1 hours
Avg. Idling Time:             2 minutes per vehicle
Tot. Idling Time:         34.33 hours

VMT Distribution by Speed (mph):
                5             0.00%
               10             0.00%
               15             0.00%
               20             0.00%
               25             0.00%
               30             0.00%
               35             0.00%
               40            10.00%
               45            90.00%
               50             0.00%
               55             0.00%
               60             0.00%
               65             0.00%
               70             0.00%
               75             0.00%
```

==========

Summary of Project Emissions

Pollutant Name	Running Exhaust (grams)	Idling Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Total (grams)	Total (US tons)
HC	18.7	12.5	16.8	-	-	48.0	<0.001
ROG	17.5	10.7	17.9	-	-	46.2	<0.001
TOG	22.1	14.3	17.9	-	-	54.3	<0.001
CO	378.0	85.4	-	-	-	463.4	<0.001
NOx	97.6	74.5	-	-	-	172.1	<0.001
CO2	326,242.5	71,585.4	-	-	-	397,827.9	0.439
CH4	3.5	2.9	-	-	-	6.4	<0.001
PM10	1.1	0.4	-	11.8	42.3	55.6	<0.001
PM2.5	1.0	0.4	-	2.9	18.1	22.5	<0.001
Benzene	0.5	0.2	0.2	-	-	0.9	<0.001
Acrolein	<0.1	<0.1	-	-	-	<0.1	<0.001
Acetaldehyde	0.6	0.3	-	-	-	0.9	<0.001
Formaldehyde	1.4	0.6	-	-	-	2.0	<0.001
Butadiene	0.1	<0.1	0.0	-	-	0.1	<0.001
Naphthalene	<0.1	<0.1	<0.1	-	-	<0.1	<0.001
POM	<0.1	<0.1	-	-	-	<0.1	<0.001
Diesel PM	0.7	<0.1	-	-	-	0.7	<0.001
DEOG	7.7	3.5	-	-	-	11.2	<0.001

==========END==========

File Name: Riverside (MD-SCAQMD) - 2045 - Annual.EC
CT-EMFAC Version: 6.0.0.29548
Run Date: 12/1/2017 4:17:42 PM
Area: Riverside (MD/SCAQMD)
Analysis Year: 2045
Season: Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category
Truck 1	0.007	0.680
Truck 2	0.123	0.992
Non-Truck	0.870	0.012

Road Length: 1 miles
Volume: 1,030 vehicles per hour
Number of Hours: 1 hours
Avg. Idling Time: 0.88 minutes per vehicle
Tot. Idling Time: 15.11 hours

VMT Distribution by Speed (mph):

5	0.00%
10	0.00%
15	0.00%
20	0.00%
25	0.00%
30	0.00%
35	0.00%
40	10.00%
45	90.00%
50	0.00%
55	0.00%
60	0.00%
65	0.00%
70	0.00%
75	0.00%

Summary of Project Emissions

Pollutant Name	Running Exhaust (grams)	Idling Exhaust (grams)	Running Loss (grams)	Tire Wear (grams)	Brake Wear (grams)	Total (grams)	Total (US tons)
HC	18.7	5.5	16.8	-	-	41.0	<0.001

ROG	17.5	4.7	17.9	-	-	40.1	<0.001
TOG	22.1	6.3	17.9	-	-	46.3	<0.001
CO	378.0	37.6	-	-	-	415.6	<0.001
NOx	97.6	32.8	-	-	-	130.4	<0.001
CO2	326,242.5	31,497.6	-	-	-	357,740.0	0.394
CH4	3.5	1.3	-	-	-	4.8	<0.001
PM10	1.1	0.2	-	11.8	42.3	55.3	<0.001
PM2.5	1.0	0.2	-	2.9	18.1	22.3	<0.001
Benzene	0.5	<0.1	0.2	-	-	0.8	<0.001
Acrolein	<0.1	<0.1	-	-	-	<0.1	<0.001
Acetaldehyde	0.6	0.1	-	-	-	0.8	<0.001
Formaldehyde	1.4	0.3	-	-	-	1.7	<0.001
Butadiene	0.1	<0.1	0.0	-	-	0.1	<0.001
Naphthalene	<0.1	<0.1	<0.1	-	-	<0.1	<0.001
POM	<0.1	<0.1	-	-	-	<0.1	<0.001
Diesel PM	0.7	<0.1	-	-	-	0.7	<0.001
DEOG	7.7	1.6	-	-	-	9.2	<0.001

==========END==========

Appendix C CNDDB, USFWS, CNPS, and CDFW Special Status Species Table

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Bernardino South (3411713) OR Fontana (3411714) OR Riverside East (3311783) OR Riverside West (3311784) OR Corona North (3311785) OR Redlands (3411712))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine OR Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes OR Fungi)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia villosa var. aurita chaparral sand-verbena	PDNYC010P1	None	None	G5T2T3	S2	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Ambrosia pumila San Diego ambrosia	PDAST0C0M0	Endangered	None	G1	S1	1B.1
Anniella stebbinsi southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Artemisiospiza belli belli Bell's sage sparrow	ABPBX97021	None	None	G5T2T4	S3	WL
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	G4G5T1T2	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Berberis nevinii Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Carolella busckana Busck's gallmoth	IILEM2X090	None	None	G1G3	SH	
Catostomus santaanae Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Ceratochrysis longimala Desert cuckoo wasp	IIHYM71040	None	None	G1	S1	
Chaetodipus fallax fallax northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
Cicindela tranquebarica viridissima greenest tiger beetle	IICOL02201	None	None	G5T1	S1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Coleonyx variegatus abbotti San Diego banded gecko	ARACD01031	None	None	G5T3T4	S1S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4T5	SH	2B.2
Dipodomys merriami parvus San Bernardino kangaroo rat	AMAFD03143	Endangered	None	G5T1	S1	SSC
Dipodomys stephensi Stephens' kangaroo rat	AMAFD03100	Endangered	Threatened	G2	S2	
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Galium californicum ssp. primum Alvin Meadow bedstraw	PDRUB0N0E6	None	None	G5T2	S2	1B.2
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TH	SH	1A
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Imperata brevifolia California satintail	PMPOA3D020	None	None	G4	S3	2B.1
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Lycium parishii Parish's desert-thorn	PDSOL0G0D0	None	None	G3?	S1	2B.3
Malacothamnus parishii Parish's bush-mallow	PDMAL0Q0C0	None	None	GXQ	SX	1A
Monardella pringlei Pringle's monardella	PDLAM180J0	None	None	GX	SX	1A
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Perognathus longimembris brevinasus Los Angeles pocket mouse	AMAFD01041	None	None	G5T1T2	S1S2	SSC
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
Rhaphiomidas terminatus abdominalis Delhi Sands flower-loving fly	IIDIP05021	Endangered	None	G1T1	S1	
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Ribes divaricatum var. parishii Parish's gooseberry	PDGRO020F3	None	None	G4TX	SX	1A
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Southern California Arroyo Chub/Santa Ana Sucker Stream Southern California Arroyo Chub/Santa Ana Sucker Stream	CARE2330CA	None	None	GNR	SNR	
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Riparian Scrub Southern Riparian Scrub	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Southern Willow Scrub Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Sphenopholis obtusata prairie wedge grass	PMPOA5T030	None	None	G5	S2	2B.2
Spinus lawrencei Lawrence's goldfinch	ABPBY06100	None	None	G3G4	S3S4	
Streptocephalus woottoni Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S1S2	
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 87

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
http://www.fws.gov/carlsbad/

In Reply Refer To: July 31, 2018
Consultation Code: 08ECAR00-2018-SLI-0111
Event Code: 08ECAR00-2018-E-03285
Project Name: Market Street Bridge Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2018-SLI-0111

Event Code: 08ECAR00-2018-E-03285

Project Name: Market Street Bridge Project

Project Type: TRANSPORTATION

Project Description: The County of Riverside proposes to replace the existing two-lane Market Street Bridge (No. 56C-0024) over Santa Ana River in Riverside County with a new four-lane bridge and reconstruct the connecting approach roadways. The existing bridge is eligible for bridge replacement funding through the Highway Bridge Program (HBP) with a current sufficiency rating (SR) of 45.1 and a condition status of "Structurally Deficient". The structure is also considered functionally obsolete due to the deficient width of bridge relative to the approach roadway width, including no width for shoulders. The current Annual Average Daily Traffic (AADT) of 17,821 is very high for the two-lane roadway.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/34.01064639238871N117.38289948050749W

Counties: Riverside, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat *Dipodomys merriami parvus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2060	Endangered
Stephens' Kangaroo Rat *Dipodomys stephensi (incl. D. cascus)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3495	Endangered

Birds

NAME	STATUS
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Fishes

NAME	STATUS
Santa Ana Sucker *Catostomus santaanae* Population: 3 CA river basins There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3785	Threatened

Insects

NAME	STATUS
Delhi Sands Flower-loving Fly *Rhaphiomidas terminatus abdominalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1540	Endangered

Flowering Plants

NAME	STATUS
San Diego Ambrosia *Ambrosia pumila* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
Santa Ana River Woolly-star *Eriastrum densifolium ssp. sanctorum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6575	Endangered
Slender-horned Spineflower *Dodecahema leptoceras* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4007	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Santa Ana Sucker *Catostomus santaanae* https://ecos.fws.gov/ecp/species/3785#crithab	Final

Plant List

7 matches found. *Click on scientific name for details*

Search Criteria

FESA is one of **[Endangered, Threatened]**, CESA is one of **[Endangered, Threatened]**, Found in Quads **3411714, 3411713, 3411712, 3311784, 3311783, 3311782, 3411724 3411723** and **3411722**;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
Brodiaea filifolia	thread-leaved brodiaea	Themidaceae	perennial bulbiferous herb	Mar-Jun	1B.1	S2	G2
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	1B.2	S1	G4?T1
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Polemoniaceae	perennial herb	Apr-Sep	1B.1	S1	G4T1
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1

Suggested Citation

California Native Plant Society, Rare Plant Program. 2017. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 07 December 2017].

Appendix D WRMSHCP Consistency Analysis

MSHCP Project Consistency Review

Market Street Bridge Replacement Project

County of Riverside

March 2019

TABLE OF CONTENTS

LIST OF EXHIBITS

SECTION 1: SUMMARY

This report contains the results of a Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Review for the Market Street Bridge Replacement Project. The Proposed Project is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and is considered a MSHCP Covered Activity. The Project is not within a designated Criteria Cell (Appendix 2. MSCHP Boundary). However, the Project Area is within the following area types that are provided special consideration under the MSHCP; Public Quasi/Public Conserved Lands (Appendix 2: Jurupa Area Plan with Cell, Cell Groups and Subunits Keyed to MSHCP Criteria, MSHCP Figure 3-12 and Figure 3-13), and a MSHCP Core Area (Appendix 2. Cores and Linkage Map, MSHCP Figure 3-2). The Project will comply with the Western Riverside MSHCP as well as other state and local environmental regulations.

The existing bridge, except for the easterly most end, is located in the City of Jurupa Valley, in Western Riverside County and consists mainly of the Market Street Bridge and disturbed vegetation within existing Riverside County, the City of Riverside and the Riverside County Flood Control & Water Conservation right-of-way (ROW). Areas surrounding and adjacent to the Project Area predominately include residential and industrial development.

There is one surface water source within the biological study area (BSA), Santa Ana River, Reach 4 (SAR R4) open water channel, which is a natural riverine, that is a 303(d) listed water resources (SWRCB 2017). A Biologically Equivalent or Superior Determination was prepared and SAR R4 was evaluated for consistency with the *Protection of Species Associated with Riparian/riverine Areas and Vernal Pool guidelines* required by Section 6.1.2 (Vol. I.) of the MSHCP.

Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) were detected within the BSA during two rare plant, NEPSSA, Criteria Species Survey Area surveys and habitat assessments. General biological surveys coupled with focused habitat assessment and focused species surveys confirmed that the least Bell's vireo (*Vireo bellii pusillus*) is present within the BSA (Appendix I of NES document). Additionally, literature research, analysis of specific habitat requirements and known occurrences determined that the BSA was potentially suitable for the following species to occur: burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Santa Ana sucker (*Catostomus)santaanae*), coast horned lizard (*Phrynosoma blainvillii)*, western yellow bat (*Lasiurus xanthinus*) and Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*). A habitat assessment for burrowing owl identified potentially suitable burrowing owl habitat within the SAR R4 wash (LSA 2012). Prior to the beginning of construction, a USFWS protocol level borrowing owl surveys will be conducted within the BSA to observe indications of the species presence. Due to the presence of potentially suitable burrowing owl habitat within the BSA and MSHCP guidelines, a USFWS protocol level borrowing owl surveys will be conducted prior to initial ground disturbing activity

The Project Area was assessed for potential impacts to nesting birds. Cottonwood trees, willow trees, palm trees and ornamental trees found within 500 feet (ft) of the Project Area provide potential nesting

sites for raptors, roosting bats and other passerine birds. A preconstruction nesting bird survey is recommended if construction activities are to occur during the avian nesting season (generally February 1st to August 31st).

SECTION 2: INTRODUCTION

The County of Riverside (County), in coordination with the California Department of Transportation (Caltrans), proposes to replace the existing two-lane Market Street Bridge (No. 56C-0024) over SAR R4 in Riverside County with a new four-lane bridge and reconstruct the connecting approach roadways as part of the Market Street Bridge Replacement Project (Project). The new bridge will be constructed to accommodate four traffic lanes with standard shoulders, thus providing increased capacity and congestion relief, particularly during peak hour traffic. The purpose of the Project is to relieve traffic congestion and delays caused by local population growth and to improve the bridge structure to meet current structural standards that can accommodate existing Annual Average Daily Traffic (AADT) rates. This report analyzes consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) for the Project footprint, plus a 50 ft buffer study area.

The County is a Permittee of the MSHCP, which was adopted by the County of Riverside in June of 2003. As a Permittee, the County has the responsibility to implement and adhere to the provisions of the MSHCP as well as the MSHCP Implementing Agreement. The MSHCP is a comprehensive, multijurisdictional habitat conservation plan and Natural Communities Conservation Plan for the conservation of species and their associated habitats in Western Riverside County. The MSHCP provides take of listed plant and animal species to Permittees for otherwise lawful activities consistent with MSHCP requirements, terms and conditions. Take of threatened, endangered, and rare species is authorized by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW), collectively referred to as the Wildlife Agencies. The Wildlife Agencies provided incidental take authorization through the MSHCP for otherwise lawful actions (i.e., public and private Projects) in exchange for compliance with provisions of the MSHCP, including the assembly and management of a coordinated Conservation Area/Reserve.

As a Permittee to the MSHCP, the County's Projects in the MSHCP area must comply with the following:

1. Section 6.1.2: Protection of Species Associated with Riparian/riverine Areas and Vernal Pools
2. Section 6.1.3: Protection of Narrow Endemic Plant Species;
3. Section 6.1.4: Guidelines Pertaining to the Urban/Wildlands Interface;
4. Section 6.3.2: Additional Survey Needs and Procedures;
5. Section 7.5.1: Guidelines for the Siting and Design of Planned Roads;
6. Section 7.5.2: Guidelines for Construction of Wildlife Crossings Within Criteria Area and Public/Quasi-Public Lands;
7. Section 7.5.3: Construction Guidelines; and
8. Standard Best Management Practices in Appendix C of the MSHCP.

2.1 - PROJECT LOCATION

The Project Area is located in the Jurupa Valley region of western Riverside County, and occurs

north of California SR-60 and south of I-10 in the Cities of Riverside and Jurupa Valley, Riverside County, California (see Project Vicinity and Project Location exhibit in the NES listed as Figure 1 and 2).

The existing Market Street Bridge (BRLS-5956(200)) Market Street Road was designed as an Arterial Highway and currently accommodates one travel lane in each direction. The bridge has been designated as Structurally Deficient and Functionally Obsolete with a Sufficiency Rating of 45.1. Additionally, the current Annual Average Daily Traffic (AADT) is 18,333 vehicles.

2.2 - PROJECT PURPOSE

The purpose of the Project is to relieve traffic congestion and delays caused by local population growth and to improve the bridge structure to meet current structural standards that can accommodate existing AADT rates.

2.3 - PROJECT DESCRIPTION

The Project proposes to replace the existing bridge with a similar in length, 1,200-foot-long bridge. The existing two-lane structure is approximately 34-feet-wide; the replacement structure will be approximately 88-feet-wide in order to accommodate American Association of State Highway and Transportation Officials (AASHTO) requirements. The new bridge will have one (1) 12-foot-wide and one (1) 14-foot-wide traffic lane in each direction; two (2) 8-foot-wide shoulders striped as Class II bicycle lanes; and one (1) 12-foot-wide multi-purpose path protected by a traffic barrier.

The Project proposes to replace the existing bridge with a similar in length, 1,200-foot-long bridge. The existing two-lane structure is approximately 34-feet (ft.)-wide; the replacement structure will be approximately 88-ft-wide in order to accommodate American Association of State Highway and Transportation Officials (AASHTO) requirements. The new bridge will have one (1) twelve-foot-wide and one (1) fourteen-foot-wide traffic lane in each direction; two (2) eight-foot-wide shoulders striped as Class II bicycle lanes; and one (1) twelve-foot-wide multi-purpose path protected by a traffic barrier on the east side of the bridge (Appendix A. Current and proposed Geometric Footprint). The Proposed Project also includes necessary approach roadway work, restriping, and utility relocation.

The Project will be constructed in two phases; the existing bridge will remain open during construction; a parallel structure will be constructed. Once complete, the parallel structure will be accessible to traffic and the existing bridge will be demolished; the new bridge will be built adjacent to the structure. The existing Market Street Bridge will continue to be used while the eastbound structure is constructed. Once the eastbound structure is operational, the existing bridge will be demolished. The second phase of construction will be the establishment of the westbound structure. Once both structures are completed, a closure pour would join the two structures together and create the proposed Market Street Bridge. The final structure will be nine-span, cast-in-place prestressed concrete box girder bridge.

Deep foundations will be used to support the bridge. These may include large-diameter cast-in-drilled-hole concrete piles, cast-in-steel-shell piles, or driven piles embedded 85 -ft. to 100 -ft. below the existing riverbed. The number of supports may vary depending on the bridge and foundation type selected, but could include 15 to 30 eight-foot diameter piles at the bents and approximately 40 three-foot diameter piles at the abutments. Foundation construction may require dewatering and/or drilling slurry. Ground improvements near the abutments may be required to address seismically induced liquefaction and lateral spreading. These improvements may include soil mixing, compaction grouting, and stone columns.

Along Market Street, roadway improvements, including widening and striping to four lanes, will occur between Rivera Street to the south, and 24th Street/Via Cerro to the north.

Borings will be conducted during the PS&E phase of the Project. Boring locations will be at each bent and abutment of the bridge. The borings may be up to 8 inches in diameter and should take approximately one week to complete. The maximum depth of excavation will be approximately 10-ft deep for construction of the new bridge abutments. The cast-in-drilled-hole (CIDH) piles will extend to a depth of approximately 40 -ft..

The existing bridge is supported on short seat type abutments at each end outside of the channel and on eleven reinforced concrete pier walls within the SAR R4 open water channel. Five of the pier walls are supported on 9 -ft. by 35-ft reinforced concrete footings and each supported on 18 concrete piles. The other six piers are supported on 13 -ft. by 34-ft reinforced concrete footings, each supported on 40 untreated timber piles. The top of footings at each pier are on average about 5 -ft. below ground and likely within the anticipated scour depth. The existing bridge piers will be removed to below the depth of anticipated scour for foundations that are within the river channel and to a depth of 1 foot minimum below finished grade for foundations that are outside of the river channel (i.e. both bridge abutments). As such, it can be assumed that the entire footing at each pier will need to be removed while the existing piles can remain in place. Based on this assumption, the total volume of concrete removed within the river channel below existing ground is estimated to be as high as 760 cubic yards. The total area of the existing pier walls (bridge columns) within the SAR R4 open water channel that will be removed is 1455 square -ft. (0.12 acre).

Overhead utilities running parallel to Market Street and adjacent to the existing bridge, as well as, underground sewer, water, gas, and internet would likely need to be relocated. Extra conduits may be placed in the new bridge structure to accommodate any future utility installation.

Construction will occur within right-of-way (ROW) owned by Riverside County, the City of Riverside and the Riverside County Flood Controls and Water Conservation Agency. ROW will be acquired along the Project alignment as needed. Partial acquisitions are anticipated. Temporary construction easements (TCEs) will be needed throughout the Project.

Typical equipment for roadway construction would include heavy construction earthmoving equipment, dump truck and pavers. Typical bridge construction equipment would include cranes, pile drivers, drill rigs, excavators, and concrete pumps.

Construction is anticipated to begin in 2022 and will take approximately 24 months to complete.

SECTION 3: METHODS

3.1 - WESTERN RIVERSIDE COUNTY MSHCP CONSISTENCY REVIEW

The Project Area was reviewed using geographic information systems (GIS) software and the Riverside County Integrated Project Conservation Summary Report Generator to determine consistency with and survey requirements per the MSHCP in relation to the following:

1. Criteria Cells or Cell Groups;
2. Criteria Species Survey Area (CASSA)
3. Narrow Endemic Plant Species Survey; Area (NEPSSA);
4. Burrowing Owl Survey Area;
5. Riparian/riverine Area;
6. Conserved Lands, Public/Quasi-Public Lands (P/QP);
7. MSHCP Core, Linkages and Reserve Assembly;

The Project is located outside any MSHCP Criteria Cells. The closest MSHCP Criteria Cells (MSSHCP Criteria Cells 187) is approximately 0.3 miles to the southwest of the Project. Section 7.2 of the MSHCP states the following regarding covered Projects within existing Public/Quasi-Public (PQ/P) Lands:

> "There are many existing roadways within existing Public/Quasi-Public Lands, including interstates, freeways, State highways, city and county maintained roadways, as well as local roads, which are not city, or county maintained that provide property access. This latter category of other maintained roadways are generally maintained by the adjacent property owners, either individually or collectively."

In addition, the site was surveyed for the presence of CASSA, NEPSSA, Burrowing Owl Survey Area, and Riparian/riverine Areas. The potentially significant effects of the Proposed Project to these resources were assessed. The assessment included mapping of "Riparian/riverine" areas present with the BSA, and an analysis of the habitat functions and values with respect to the habitat needs of the MSHCP covered species discussed in Section 6.1.2 (Vol. I.) of the MSHCP.

The Project Area is located within MSHCP Core A Area and the existing Market Street Bridge crosses over MSHCP Conserved Public/Quasi Public Lands within the SAR R4 wash and an Urban/Wildlands Interface Analysis is required. The Project Area is located in proximity to a designated Western Riverside County MSHCP Conservation Area; therefore, an Urban/Wildlands Interface Analysis is required.

According to the Section 7.2 (above) and Table 7-4 in the MSHCP, *Planned Facilities,* the Market Street Bridge Replacement Project, is a covered activity because it is a public road and structure improvement Project located outside of the Criteria Cell and where PQ/P Lands are permitted under the MSHCP.

3.2 - LITERATURE REVIEW

The environmental setting of the Project Area was reviewed through the use of aerial photographs, U.S. Geological Survey (USGS) topographic quadrangle, and the Soil Survey for the Western Riverside Area

(NRCS 2017). The MSHCP was also reviewed for habitat requirements and specific habitat suitability elements for MSHCP covered species with potential to occur within and/or adjacent to the Project Area. The California Department of Fish and Wildlife's California Natural Diversity Data Base (CNDDB), and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants of California were used to determine the potential occurrence of sensitive species from the region surrounding the site. The CNDDB query was based on a 10-mile radius around the Project Area. An official letter was received from USFWS on October 25, 2017, to confirm the federally listed species that may be present within the BSA and warrant consideration. The results of these data queries were refined through site visits and focal surveys that included habitat assessments for these species.

Based on the results of general biological and habitat reconnaissance surveys, as well as, vegetation mapping of the Project Area and surrounding area conducted by Dokken Engineering, it was determined that a rare plant survey, a focused sensitive avian species and a focused small mammal survey was necessary per MSHCP requirements.

3.3 - VEGETATION COMMUNITIES

Vegetation communities within the Project Area and surrounding area were mapped in the field using aerial photograph of the site. Communities were classified according to the 1988 A Guide to Wildlife Habitats of California (CDFG 1988) based on the dominant and characteristic plant species, plant physiognomy, and soils in accordance with the Natural Resources Conservation Service (NRCS 2016).

3.4 - HABITAT ASSESSMENT

General biological surveys occurred during the Summer of 2012, March of 2013, October of 2017 and January of 2018. Biological surveys were conducted by walking meandering transects through the BSA, mapping vegetation communities, and assessing potential habitat for sensitive species while recording all plant and wildlife observed. Special attention was directed towards to following; the environmental setting of the Project Area, the presence of riparian/riverine resources, potentially suitable habitat for rare plant species, potentially suitable habitat and presence of narrow endemic plants and sensitive species. Habitat assessments for sensitive species with potential to occur within the Project Area (based on a query of existing regional databases) were conducted by noting the presence or absence of habitat features required by, or associated with, these species. Surveys included all accessible areas within the BSA.

Habitat suitability for rare plant species was assessed based on the presence of required or preferred soils, composition and structure of native and nonnative vegetation communities, and topography.

Protocol level surveys for burrowing owl will occur. Surveys will follow guidelines presented in the 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012). Habitat requirements parameters for burrowing owl will include the presence of suitable physical characteristics in topography; vegetation and soils; and the presence

of wildlife signs such as burrows, owl pellets, bones and discarded prey items, scat, and whitewash.

3.5 - PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field. A comprehensive list of observed plants can be found in the Market Street NES (County of Riverside 2017). A habitat suitability assessment for MSHCP narrow endemic plants was conducted by analyzing the BSA in terms of the presence of appropriate soils, composition of native and nonnative vegetation communities, and topography.

3.6 – WILDLIFE

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys (County of Riverside 2017). Field guides were used to assist with identification of species during surveys including *Sibley Field Guide to Birds of Western North America* (Sibley 2003) and *A Field Guide to Mammals of North American North of Mexico* (Reid 2006), and *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003).

SECTION 4: EXISTING CONDITIONS

4.1 – ENVIRONMENTAL SETTING

The Project Area has relatively flat topography and has been developed or disturbed for many decades (see topographic exhibit in the NES listed as Figure 5).

The National Resources Conservation Service (NRCS) identifies soils within the Project vicinity as Delhi fine sand (DaD2), 2 to 15 percent slopes, Dello loamy fine sands (DmA), poorly drained, 0 to 2 percent slopes, wind eroded, Metz loamy fine sand (MfA), 0 to 2 percent slopes, Riverwash (RsC), San Emigido fine sandy loam (SfA), deep, 0 to 2 percent slopes, Tujunga loamy sand (TuB), 0 to 5 percent slopes. Identified soil types DaD2, DmA, and TuB are alluvium derived from granite, MfA is derived alluvium from sedimentary rock, SfA is residuum weathered from sedimentary rock and RsC is sandy/gravelley alluvium derived from mixed sources (NRCS 2013) (NRCS 2016).

4.2 - VEGETATION COMMUNITIES

The non-native vegetation communities mapped within the survey area includes ruderal, landscaped and non-native grasslands habitats. The native vegetation communities within the BSA includes riparian woodland and disturbed riparian scrub (see Vegetation Communities within the BSA exhibit in the NES listed as Figure 6).

Ruderal vegetation is present along Market Street roadways and near residential areas. The vegetation community is comprised with non-native vegetative species which includes; bull thistle (*Cirsium vulgare),* maltese star thistle (*Centaurea melitensis*) and oleander (*Nerium oleander*). Disturbed non-native grasslands within the BSA are found within the south-western area of SAR R4 wash. The vegetation community is dominated by non-native species, including shortpod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), common ripgut grass (*Bromus diandrus*), and foxtail chess (*Bromus madritensis*).

The Project Area contains approximately 12.48 acres of habitat that is deemed as CDFW jurisdictional waters and riparian/riverine habitat areas under the MSHCP. Riparian/riverine habitat consists of the open water of SAR R4, as well as, any additional habitat within the wash (disturbed riparian woodland, riparian woodland, disturbed riparian scrub, and non-native grassland). Riparian woodland habitat within the BSA is composed primarily of willows (*Salix* spp.), Fremont cottonwood (*Populus fremontii*), mule fat (*Baccharis salicifolia*), and tamarisk (*Tamarix ramosissima)*. Areas of disturbed riparian scrub habitat within the BSA are dominated by willows, mule fat, and caster bean (*Ricinus communis*).

The remainder of the survey area consists of barren/urban areas, disturbed riparian woodland, and industrial/residential development. Ornamental vegetation also occurs in association with developed and landscaped areas along Market Street. These areas do not support native plant species.

4.3 - WILDLIFE

A variety of wildlife species common to urbanized habitat were recorded within the Project Area or on adjacent land. Species observed within the BSA and adjacent lands are listed in the NES in Table 2. Analysis of specific habitat requirements, current and historical occurrences and focused survey results determined the BSA was potentially suitable for the following species to occur: burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), loggerhead shrike (*Lanius ludovicianus*), Santa Ana sucker (*Catostomus santaanae*), coast horned lizard (*Phrynosoma blainvillii*), western yellow bat (*Lasiurus xanthinus*) and Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*).

4.4 WATERS AND WETLANDS

Based on survey results, National Wetland Inventory (NWI 2017) and the Fontana USGS 7.5-minute topographic quadrangle, one open water resource within the BSA, SAR R4. The SAR R4 open water channel is located beneath the most northern portion of the Market Street Bridge and runs in a southwesterly direction through the BSA.

The SAR the largest river entirely within Southern California in the United States; it is 96 miles long and drains a 2,650-square mile watershed. The Project Area spans over the SAR R4; the SAR R4 open water channel is the only water feature within the Project Area. The aquatic habitat within the Project Area is categorized as a riverine habitat. R4 receives baseflow from SAR Reach 5, upstream, as well as two wastewater treatment facilities downstream of the Project, the City of San Bernardino Rapid Infiltration and Extraction Facility (with an annual discharge of 37,326 acre-feet in 2012), the City of Rialto Wastewater Treatment Plant (with an annual discharge of 6,805 acre-feet in 2012) and City of Colton's Wastewater Treatment Facility (with an annual discharge of 47,000 in 2010) (SWRCB, 2017). SAR R4 open water channel is listed in the 2010 Integrated Report (Clean Water Act Section 303 (d) list / 305 (b) report) of impaired water bodies by the California State Water Resources Control Board as being impaired by pathogens from a non-point source and salinity/TDS/chlorides from an unknown source. SAR R4 open water channel was listed because of impairment by pathogens. Reach 6 of the SAR was added to the list because of copper, lead, and cadmium concentrations (Beamer *et al*. 2010) Based on the 2010 303(d) list, the board will be developing a total maximum daily load (TMDL) to address pathogens and salinity in 2019. The feature flows in a southwesterly direction for approximately conveying roadway drainage and residential/business drainage and terminates into the Pacific Ocean approximately 50 miles outside the BSA.

The banks of SAR R4 is vegetated, with both native and non-native vegetation including Freemont cottonwood, mulefat, willow spp. and caster bean (see Table 1 of NES document, Appendix D Representative Photographs of NES document). However, vegetation associated with the channel has been cleared along the northern side of SAR R4, creating an extremely fragmented habitat and isolation from the southern portion of the SAR R4 riparian/riverine habitats. The Proposed Project will temporarily impact less than 0.49 acres of SAR R4 open water channel. No permanent impacts to SAR

R4 open water channel are anticipated (see Figure 7 Project Impacts to Waters Project exhibit within the NES document).

No wetlands or vernal pools are present within the BSA.

SECTION 5: WESTERN RIVERSIDE COUNTY MSHCP PROJECT CONSISTENCY REVIEW

5.1 - OVERVIEW

The MSHCP has specific survey requirements for certain sensitive plant, invertebrate, bird, mammal, and/or amphibian species. The Project Area is located within the MSHCP boundary but outside of an MSHCP designated Criteria Cells. The BSA falls within designated Narrow Endemic Plant Species Survey Area (NEPSSA), Burrowing Owl Survey Area, and Riverine Area (Attachment 2). The BSA is located within Public/Quasi-Public Conserved Lands, and designated Core A Area. This consistency review addresses the potential for sensitive biological resources to occur within the Project Area, as required by the MSHCP.

5.2 - SURVEY RESULTS

5.2.1 – Riparian/Riverine/Vernal Pools

No wetlands or vernal pool resources are present within the BSA.

Per the MSHCP, riparian/riverine Areas are “lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, whic occur close to or which depend upon soil moisture from a nearby freshwater source; or areas with fresh water flow during all or a portion of the year.”

The Project Area spans over the SAR R4; the SAR R4 open water channel is the only water feature within the Project Area. The aquatic habitat within the Project Area is categorized as a riverine habitat. SAR R4 open water channel is listed in the 2010 Integrated Report (Clean Water Act Section 303 (d) list / 305 (b) report) of impaired water bodies by the California State Water Resources Control Board as being impaired by pathogens from a non-point source and salinity/TDS/chlorides from an unknown source. SAR R4 open water channel was listed because of impairment by pathogens. Based on the 2010 303(d) list, the board will be developing a total maximum daily load (TMDL) to address pathogens and salinity in 2019. The feature flows in a southwesterly direction for approximately conveying roadway drainage and residential/business drainage and terminates into the Pacific Ocean approximately 50 miles outside the BSA. The feature is vegetated, with both native and non-native vegetation including Freemont cottonwood, mulefat, willow spp. and caster bean (Table 1 of NES document, Appendix D Representative Photographs of NES document). However, vegetation associated with the channel has been cleared along the northern side of SAR R4, creating an extremely fragmented habitat and isolation from the southern portion of the SAR R4 Riparian/riverine habitats. No wetlands, vernal pools or suitable habitat for federal or state listed species are present within the BSA.

The Proposed Project will temporarily affect less than 0.49 acres of SAR R4 open water channel. No permanent impacts to SAR R4 open water channel are anticipated (see Figure 10 and Figure 11 for Project Impacts to Jurisdictional Waters within the NES document).

A Determination of Biologically Equivalent or Superior Preservation (DBESP) was prepared and provided to the USFWS and CDFW for a 60-day review and comment period (Attachment 3. DBESP).

Section 6.1.2 of the MSHCP requires an assessment of the potentially significant effects of a Project on covered species occupying riverine areas using available information augmented by Project-specific mapping. The three MSHCP covered species associated with riverine areas include least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western yellow-billed cuckoo (*Coccyzus americanus*). If mapping identifies suitable habitat for any of the three species that would be impacted by a Proposed Project, focused surveys are required.

The BSA does contain suitable habitat capable of supporting least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo or other species associated with riparian/riverine areas. Focused surveys were conducted for the 3 sensitive avian species mentioned above. Focused surveys resulted in detection of least Bell's vireo within the BSA (LSA 2012, Griffin 2017). Mitigation measures will be implemented to avoid impacts to the species to the greatest extent feasible. Focused surveys did not detect the southwestern willow flycatcher or yellow-billed cuckoo within the Project Area; therefore, these species are not expected to occur within the Project Area.

This assessment for riparian/riverine areas pursuant to Section 6.1.2 of the MSHCP is independent from considerations given to the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) jurisdictional waters under the CWA and Fish and Game Code. Characteristics identifying jurisdiction for USACE, RWQCB and CDFW waters are defined by direct connectivity to other jurisdictional waters and vegetation requiring water in-channel and along its banks. However, per the January 2018 Caltrans Project Coordination and Consistency meeting held with representatives of USFWS, CDFW, Regional Conservation Authority (RCA), Riverside County Transportation Department (RCTD) and Dokken Engineering present, for the purposes of the Market Street Bridge Replacement Project, riparian/riverine habitat will be categorized as all habitat within in the Project Area, bound by the toe of the SAR R4 levee. Meaning the MSHCP riparian/riverine habitat is the same area as the jurisdictional waters of the state.

5.2.2 Species Survey

Narrow Endemic Plant Species

80% of the BSA falls within NEPSSA (see MSHCP Boundary exhibit in Attachment 2). Focused surveys were conducted for the following sensitive plant species based an initial literature review (USFS, CDFW, CNPS and MSHCP); as well as, a habitat suitability assessment of the Project Area and surrounding area: Thread-leaved brodiaea (*Brodiaea filifolia*), Marsh sandwort (*Arenaria paludicola*), Nevin's barberry (*Berberis nevinii*), Gambel's water cress (*Nasturtium gambelii*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).

Santa Ana River woollystar was the only special status plant species detected during surveys of the Project Area. The sensitive plant species was detected during two different rare plant surveys

conducted by LSA Associates (2012) and by Dokken Engineering (2013).

Burrowing Owl

The breeding range of the North American subspecies of burrowing owl extends south from southern Canada into the western half of the United States and down into Baja California and central Mexico (Zeiner 1990). Burrowing owls inhabit open areas such as grasslands, pastures, coastal dunes, desert scrub, and the edges of agriculture fields. The species uses rodent burrows throughout the year for shelter from weather and predators, as well as, for nesting (April 15 through July 15). In southern California the most commonly used rodent burrow is that of the California ground squirrel (CDFW 2016a). Minimal suitable burrowing owl habitat was determined to be present within and adjacent to the Project site.

A protocol burrowing owl surveys will be conducted in accordance to 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and the 2012 Staff Report on Burrowing Owl Mitigation prior to the start of any initial ground disturbance activities. The survey will include walking transects throughout the BSA, observing any potential burrowing habitat (burrows and stock piling) for any sign of burrowing owl.

5.3 MSHCP RESERVE ASSEMBLY

MSHCP Core, Linkages, Public/Quasi-Public Lands (P/QP)

The BSA contains the SAR R4 open water channel and the associated river wash. This area has been categorized by the Western Riverside County MSHCP as Exiting Core A. This southwest-to-northeast trending swath of land is composed largely of Public/Quasi-Public Lands owned by Riverside County, the City of Riverside and the Riverside County Flood Control & Water Conservation Districts. The Core also functions as a Linkage, connecting Orange County to the west with San Bernardino County to the north.

5.4 URBAN/WILDLANDS INTERFACE ANALYSIS

The Project Area is located in proximity to a designated Western Riverside County MSHCP Conservation Area; therefore, an Urban/Wildlands Interface Analysis is required. Guidelines pertaining to Urban/Wildlands Interface for the management of edge factors presented in Section 6.1 of the Western Riverside County MSHCP will be incorporated to the Project's design.

SECTION 6: CONSISTENCY CONCLUSIONS

6.1 -HABITAT ASSESSMENTS

6.1.1 - Narrow Endemic Plant Species

Results of focused rare plant surveys conducted within the Project Area and surrounding area, determined the Santa Ana River woollystar is present within the BSA. However, with the implementation of **BIO-5** through **BIO-7** mentioned in the NES document, no impacts are expected to occur to any narrow endemic plant species from construction of the Proposed Project.

6.1.2 - Burrowing Owl

Per the MSHCP, due to the presence of suitable burrowing owl habitat within the BSA, protocol level surveys will be conducted prior to adoption of the CEQA environmental document and within 30 days prior to initial ground-disturbing activity. If the site contains, or is part of an area supporting less than 35 acres of suitable habitat or the survey reveals that the site and the surrounding area supports fewer than 3 pairs of burrowing owls, then the on-site burrowing owls would be passively or actively relocated following accepted protocols. Take of active nests will be avoided. Passive relocation (use of one way doors and collapse of burrows) will occur when owls are present outside the nesting season. Current accepted protocols discussed in the CDFW's 1995 *Staff Report on Burrowing Owl Mitigation*, determined that any detected burrowing owls occupying the immediate impact zone and within an approximate 160-foot buffer zone should be passively relocated.

6.1.3 – Riparian/riverine Areas

Per the Western Riverside County MSHCP, Proposed Project activities shall be reviewed for consistency with the protection of species associated with riparian/riverine areas guidelines, the protection of Narrow Endemic Plant Species guidelines, and the additional survey needs and procedures included in Section 6.1.2, 6.1.3 and 6.3.2, in the Western Riverside County MSHCP. Impacts to riverine areas will be avoided to the greatest extent possible through Project design and minimized by the adoption of best management practices, as outlined in Volume 1, Appendix C, of the MSHCP and described in the NES.

6.2 - URBAN/WILDLANDS INTERFACE GUIDELINES

The Project Area is in proximity to the MSHCP Conservation Area; therefore, an Urban/Wildlands Interface Analysis is required. The Proposed Project will adhere to guidelines present in Section 6.1.4 of the MSHCP all regulations provided in general plans zoning ordinances and policies that include mechanisms to regulate the development of land including; drainage, toxics, lighting, noise, invasive species, barriers, and grading/land development.

6.2.1 Drainage and Runoff. Avoidance and minimization measures from the Market Street Bridge Replacement Water Quality Report (2018). With the inclusion of the measures mentioned below, the Proposed Project will not adversely impact water quality in MSHCP Conservation Areas.

WQ-1: The proposed project would require a National Pollution Discharge Elimination System (NPDES) General Construction Permit for Discharges of storm water associated with construction activities (Construction General Permit 2012-0006-DWQ). The construction contractor shall adhere to the SWRCB Order No. 2012-0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes storm water and authorized non-storm water discharges from construction activities. As part of this Permit requirement, a SWPPP shall be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP will incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.

WQ-2: Post-construction storm water control requirements will be addressed in accordance with the Santa Ana River Watershed MS4 permit. Site Design BMPs will potentially include:

- Bioswales: A bioswale will be included at the toe of slope on the east side of bridge abutments within the City of Riverside.
- Permeable pavement will be incorporated into sidewalks within the project area.
- Source control BMPs would include sweeping, drainage facility inspection and maintenance, MS4 stenciling and signage, and protection of slopes and channels.

WQ-3: All concrete will be poured in dry areas only, or within confined areas that have been dewatered to prevent surface water contact, and will be allowed to cure a minimum of 7 days before contact with any surface water. The intent of this MM is to prevent concrete from increasing the pH of natural water bodies by allowing concrete to fully cure prior to contact with river water.

WQ-4: Water pumped out of any construction area in an effort to keep ground water or surface water from re-filling a dewatered site will be discharged to a temporary storage and treatment site or to an upland area where it can be filtered through native vegetation prior to reentering the stream channel, or be allowed to percolate into the ground. Sediments that may be with the water will be allowed to settle in a temporary basin and then removed and disposed of at a landfill site or used in access road stabilization. Discharge of water back to the river will occur in such a manner as not to cause erosion. The intent of this measure is to protect the river from turbidity impacts associated with sediment-laden runoff.

WQ-5: Equipment will be checked daily for leaks and will be well maintained to prevent lubricants and any other deleterious materials from entering waters of the state. Prior to operating equipment on the banks of the active channel, all such equipment will be free of any external petroleum products, hydraulic fluid, and coolants. Wash water will not be discharged to any water body without pre-treatment and all wash activities will take place outside of the river floodplain. All equipment will have straw wattle rings around them during the night to prevent any leaking of petroleum into the water. Use of plastic tarping under the equipment will further reduce percolation of oil into the soil. The intent of this MM is to prevent pollutants from entering natural water bodies and affecting fish or their habitat through staging of equipment outside of the river floodplain during non-work hours. Equipment that is easily de-mobilized will be moved from the riverbed overnight. Larger equipment such as pumps and cranes will remain overnight unless flooding is imminent.

WQ-6: All materials, such as rock riprap, gravel, or large boulders placed within the water or along the river bank, will be free of fines, silt, soil, or other extraneous material and the use of natural materials will be initiated as much as practicable. An exception to the presence of fines is permitted if they are required as part of channel bed reconstruction or temporary sand berms using sand existing on-site.

6.2.2 Toxics. The Proposed Project will not alter land use in the MSHCP Conservation Area or in adjacent lands. Therefore, no chemical discharges into the MSHCP Conservation Area is anticipated and no avoidance measures are proposed.

6.2.3 Lighting. The Proposed Project will not result in any additional light directed into MSCHP Conservation Areas. Additionally, the following avoidance and minimization measures from the Market Street Bridge Replacement Natural Environmental Study (pending submittal) will be incorporated during construction; therefore, the Proposed Project will not adversely impact lighting in MSHCP Conservation Areas.

BIO-35: During nighttime work for Project construction, night lighting shall be used only in the area actively being worked on and focused on the direct area of work. Additional, any night lighting shall be directed away from the culvert entrance to avoid affecting any roosting bats.

6.2.4 Noise. The Proposed Project anticipates temporary impacts resulting from construction noise. During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. Pile driving for falsework construction will produce the highest level of noise and may result in additional temporary effects to the least Bell's vireo if pile driving occurs during nesting season for this species (March 15 through July 15). Additionally, traffic noise levels are anticipated to increase up to 71 db, approximately 3 dB over existing noise levels as a result of the Proposed Project. However, avoidance and minimization measures from the Market Street Bridge Replacement Natural Environmental Study (pending submittal) will be implanted to reduce noise impacts to the greatest extent feasible.

BIO-11: If an active least Bell's vireo nest is identified within 1,000 linear feet of the Project impact area and pile driving activities are occurring during the least Bell's vireo nesting season (March 15 through July 15), a biological monitor will conduct daily site visits to document how pile driving activities affect nesting least Bell's vireo. This data collection will be utilized by USFWS to provide guidance for future Projects and will not impose additional restrictions on this Project.

If the Mission Boulevard Bridge Replacement at the Santa Ana River Project and the Market Street Rehabilitation Project are constructed at the same time, RCA and the wildlife agencies recommended the County hire the same biological monitor to conduct least Bell's vireo monitoring. By utilizing the same biological monitor for both Projects, it will ensure that methods are consistent, and the results are holistically analyzed. Additionally, if the Project at Mission Boulevard should be constructed first, the Project at Market Street should coordinate with RCA and the appropriate wildlife agencies to develop the monitoring strategy based on information gathered while monitoring during pile driving activities at the Project at Mission Boulevard. The Proposed Project reserves the right to revise least Bell's vireo monitoring plans based on the findings from Mission Boulevard Bridge Replacement at the Santa Ana River Project.

BIO-12: During construction of the Project, noise from construction activities may intermittently

dominate the noise environment in the immediate area of construction. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. To minimize the construction-generated noise, abatement measures in standard Specification 14-8.02, "Noise Control" and SSP 14-8.02 must be followed:

- Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- Equip an internal combustion engine with the manufacturer recommended muffler.
- Do not operate an internal combustion engine on the job site without the appropriate muffler.

BIO-13: Prior to beginning any pile driving activities, the contractor will implement "pre-noise" and "pre-vibration" precautions and allow equipment with operations of ≥ 6,000 RPM to idle for 5-10 minutes to permit Santa Ana suckers in the vicinity the opportunity to vacate the Project Area.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Standard Specification 14-8.02, SSP 14-8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Additionally, because traffic volumes are not anticipated to increase with the Proposed Project, noise levels will not significantly increase. The Proposed Project is anticipated to increase up to 3 dB to receptors northeast of the bridge as a result of the additional lanes shifting traffic 24-ft further east of the existing bridge. However, this increase is not anticipated to adversely affect the MSHCP Conservation Areas because the Project Area is currently a loud environment, and changes in noise of 3 dB are generally perceived as barely detectable (FHWA 2017)

6.2.5 Invasive species. In compliance with EO 13112, weed abatement measures will be implemented to minimize the importation of non-native plant material during and after construction. Eradication strategies would be employed should an invasion occur. At a minimum, the following Avoidance and minimization measures from the Market Street Bridge Replacement Natural Environmental Study (pending submittal) will be implemented; therefore, the Proposed Project is not anticipated to increase invasive species in MSHCP Conservation Areas.

BIO-28: Eradication procedures (e.g., spraying and/or hand weeding) will be decided should an infestation occur; the use of herbicides will be prohibited within waters and near native vegetation, except as specifically authorized and monitored by the County- designated Project Biologist.

BIO-29: All woody invasive species (e.g., tamarisk) and identified Arundo patches (0.11 acre) will be removed from the Project limits.

Additionally, if any off-site planting in MSHCP Conservation Areas for mitigation purposes occurs, the Proposed Project will consider and apply all applicable guidelines presented in the MSCHP regarding; approved species, planting plans, protecting resources. As well as, species sensitivity to; invasive species, barriers, and seed dispersal.

6.2.6 Barriers: A portion of the Project Area falls within the SAR R4 wash, a designated MSHCP

Conservation Area. Even with the SAR R4 levees acting as a barrier, unauthorized public access, illegal trespassing and dumping is a prevalent issue within MSHCP Conservation Area within the Project Area. The SAR R4 wash contains evidence of heavy human disturbance through indications of Off-Highway Vehicle (OHV) use throughout the area, trash dumping, and disturbance associated with transit encampments. No additional barriers establishment is purposed at this time.

6.2.7 Grading: To accommodate the purposed deck expansion, extending grading may occur at the north abutment of the Market Street Bridge. Expansion into the MSCHP Conservation Area will be avoided or minimized to the greatest extent feasible.

6.2.8 Edge Effects: The Proposed Project is not anticipated to create edge effect or impact linkages to Core Area linkages. No impacts to urban and wildlands are anticipated.

SECTION 7: CONCLUSIONS

A MSHCP Project Consistency Review was conducted for the Market Street Bridge Rehabilitation Project, located in Western Riverside County. The Project Area contains the SAR R4 open water channel and associated wash. The wash area under Market Street Bridge is categorized as a MSHCP Conservation Area and Core A Linkage Area. Approximately 80% of the Project Area falls within Western Riverside County MSHCP designated NEPSSA and habitat assessment survey area for burrowing owl. In addition, riverine resources are present onsite. No portion of the site occurs within a designated Western Riverside County MSHCP Criteria Cell.

The Santa Ana wollystar, a NEPSSA species, was detected within the BSA during 2 focused plant surveys. The Proposed Project will result in temporary effects to Santa Ana River woollystar habitat. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Permanent impacts to the species are not anticipated. With the inclusion of measure **BIO-7** through **BIO-9** (mentioned in the NES document), no direct impacts to the species are anticipated. The Proposed Project will minimize impacts to Santa Ana wollystar to the greatest extent practicable through the use of avoidance and minimization measures, BMPs, and compliance with all permit conditions specified by regulatory agencies during the permitting phase of the Proposed Project.

The least Bell's vireo, a Western Riverside County MSHCP protected species, was detected within the BSA during two focused avian species surveys. The Proposed Project will result in temporary effects to least Bell's vireo. Approximately 1.33 acres of disturbed riparian scrub and 4.34 acres of riparian woodland habitat that could be utilized as foraging/nesting habitat by the least Bell's vireo will be temporarily disturbed during construction. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Additionally, with the creation of the new deck, 0.39 acres of riparian woodland habitat will have new shade within the habitat (Figure 7. Project Impacts in the NES document). With the inclusion of measure **BIO-8**, and **BIO-10** through **BIO-12**, impacts to the species will be reduced to the greatest extent feasible. However, direct impacts from the Project may adversely affect the species. Final mitigation will be determined

during Section 7 consultation with USFWS.

The Proposed Project is located in the MSHCP Additional Survey Area for Burrowing Owl. A 2012 habitat assessment for the species determined that suitable habitat is present within the BSA. Per the MSHCP burrowing owl survey requirements, a protocol level survey for this species is required prior to approval of the CEQA environmental document and will be required prior to ground disturbance to avoid take of burrowing owl. To avoid take of nesting birds, preconstruction surveys will also be conducted during the bird nesting season of February 1 to August 31, and construction is recommended to occur outside the nesting season.

Vegetation communities will be temporarily impacted. All temporary impacts to vegetation community will be re-contoured and re-vegetated to preconstruction conditions. New shade impacts to vegetation communities are anticipated to be approximately 0.74 acre. No permanent impacts to native vegetation community (riparian scrub, riparian forest, disturbed riparian habitat) and non-native vegetation communities (non-native grasslands) are anticipated.

The Proposed Project will result in temporary effects to jurisdictional waters of the U.S. and State. Temporary effects include construction areas that will be re-contoured and re-vegetated to preconstruction conditions. Construction of the Proposed Project will temporarily impact 2.88 acres of Water of the U.S. (see Figure 10. Waters of the U.S.) and 12.48 acres waters of the State (see Figure 11. Waters of the State). Construction within the OHWM will be completed during the winter, when water levels are much lower. SAR R4 open water channel has surface water present year-round; water diversion measures (e.g., sheet piles or coffer dams) will be utilized to prevent water from entering the work area during construction. Per Regulatory Guidance Letter (RGL) 90-08 issued by the USACE in 1990, no permanent impacts from the construction of the new bridge structure pier walls will occur. According to the RGL, because the new pilings will not constitute the equivalent "of replacing an aquatic area with dry land or changing the bottom elevation of a water body," the new pier walls will not result in any permanent impacts to the SAR R4 habitat within the BSA. With the inclusions of **BIO-1** through **BIO-4** (mentioned in the NES document), no permanent impacts are anticipated.

With the inclusion of avoidance and minimization measure **BIO-8** through **BIO-12**, discussed in the NES document, no impacts to migratory birds protected under the MBTA are anticipated.

With the inclusion of avoidance and minimization measure **BIO-20** through **BIO-27**, discussed in the NES document, no impacts to bat species within the BSA are anticipated.

The Project is anticipated to impact riparian/riverine areas; therefore, a DBESP has been prepared to address impacts to these MSHCP resources (which correspond with CDFW jurisdictional areas). Mitigation in the DBESP will be equivalent or superior to that which would occur if impacts to the Riverine resources were avoided.

The Market Street Bridge Rehabilitation Project as planned is consistent with the applicable MSHCP requirements of Sections 6.1.2, Riparian/riverine Areas and Vernal Pools; 6.3.2, Additional Survey Needs and Procedures; 6.1.4, Urban/Wildlands Interface Guidelines; 7.5.3, Construction Guidelines; and Appendix C, Standard BMPs.

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Attachment 1:

MSHCP ConsistencyReview Table

MSHCP Project Consistency Review

MSHCP Requirement	Studies	Results	Avoidance, Minimization, and/or Mitigation Measures
Riparian/ Riverine Areas Policies	Riverine areas were mapped and OHWM were determined. Habitat suitability assessments were conducted for associated sensitive species. Refer to Section 4.1. of the NES.	One surface water source was detected within the BSA, SAR R4 open water channel. SAR R4 open water channel is a natural riverine that is a 303(d) listed water resource. Refer to section 4.1 of the NES	Impacts to SAR R4 open water channel and sensitive associated riparian habitats will be avoided to the extent possible with through Project design and the adoption of BMPs. Applicable mitigation to Western Riverside County MSHCP standards are required for impacts to sensitives associated riparian species, such as, the least Bell's vireo and Santa Ana woollystar. Based on agency agreed upon ratios, compensatory mitigation for temporary effects will be at a 1.25:1 mitigation ratio, new shade effects will be at a 2:1 ratio, and existing bridge will be at a 1:1 ratio for a total of 17.91 acres of required on- site and off-site mitigation. Refer to Natural Environmental Study, Compensatory Mitigation Sections 4.1.1.4
Criteria Cell Policies	An initial review of figures and maps provided in the Western Riverside County MSHCP, as well as, a review of the Riverside County Information Technology Open Data set (https://gis.countyofriverside.us/arcgis_public/rest/services/OpenData/Species_Habitats/MapServer/9) was conducted.	No portion of the BSA is located within a designated Western Riverside County Criteria Cell. Refer to Attachment 2 in the MSHCP Consistency Review.	Not applicable.
Narrow Endemic Plant Species Policies	An initial habitat assessment was conducted. Two focused rare plant surveys were conducted.	Santa Ana woollystar was the only special status plant species detected within the BSA during focused rare plant surveys.	Impacts to Santa Ana woollystar will be avoided to the extent possible through Project design and the adoption of BMPs.

MSHCP Requirement	Studies	Results	Avoidance, Minimization, and/or Mitigation Measures
	Refer to the NES Section 2.3.	Refer to the NES Section 4.2.1.	Applicable mitigation to federal and state regulatory standards would be required for impacts to Santa Ana woollystar. Compensatory mitigation for impacts to Santa Ana woollystar may include onsite restoration of temporary impacts and may include seed collection and distribution in areas approved by the resource agencies. Specific mitigation measures and ratios would be determined through coordination with the resource agencies during the environmental permitting phase of the Project. Refer to Natural Environmental Study, Compensatory Mitigation Sections 4.2.1.4
Burrowing Owl Survey Area Policies	Surveys conducted in 2012 included a habitat Assessment. Protocol level species surveys will be conducted prior to any construction activities. Refer to the NES, Section 2.4.	Suitable habitat for burrowing owls is present onsite, although this species was not detected during surveys. Refer to NES, Section 4.3.	No presence or sign of burrowing owl was detected during the habitat assessment and survey; however, due to the presence of suitable habitat protocol surveys and preconstruction surveys are required. Impacts to suitable burrowing owl habitat and potential burrows within the BSA will be avoided or minimized through Project design and the adaptation of BMPs. If active burrows are found, the Project will follow MSHCP guidelines on burrow relocations. Refer to NES, Section 4.3.1.3
Wildlife Corridors/ Linkages	Initial review of figures and maps provided in the Western Riverside County MSHCP, as well as, a review of the Riverside County Information Technology Open Data set (https://gis.countyofriversid e.us/arcgis_public/rest/serv	Approximately 12.48 acres of the Project Area occurs within the SAR R4 open water channel and the associated river wash. The SAR R4 wash area is categorized an	Impacts to wildlife corridors will be avoided to the extent possible through Project design; and the adoption of BMPs and the guidelines established in the Western Riverside County MSHCP Section 6.1 and 7.5.2.

MSHCP Requirement	Studies	Results	Avoidance, Minimization, and/or Mitigation Measures
	ices/OpenData/Species_Habitats/MapServer/9) was conducted.	MSHCP Wildlife Corridor/ Linkage Area. See Attachment 3.	The Proposed Project's bridge replacement activities are not anticipated to permanently impact any local wildlife or migration corridors. Refer to NES, Section 3.1.3.5
Urban/ wildlands interface policies	Initial review of figures and maps provided in the Western Riverside County MSHCP, as well as, a review of the Riverside County Information Technology Open Data set (https://gis.countyofriverside.us/arcgis_public/rest/services/OpenData/Species_Habitats/MapServer/9) was conducted.	The Project Area is within Public/Quasi-Public Conservation Areas, adverse impacts to biological resources within the Conservation Area are anticipated to sensitive habitats will be less than 0.001 acre.	The following Urban/Wildlands Interface Guidelines, where applicable, will be incorporated for the operations phase of the Project: **Drainage.** Proposed developments in proximity to the MSHCP Conservation Area shall incorporate measures, including measures required through the NPDES requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Storm water improvements shall be designed to prevent or reduce the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. **Toxics.** Land uses in proximity to the MSHCP Conservation Area that are potentially toxic or may adversely affect wildlife species, habitat, and water quality include the use of chemicals and fertilizers for agricultural and commercial and residential uses, and petroleum product runoff from paved surfaces. These

MSHCP Requirement	Studies	Results	Avoidance, Minimization, and/or Mitigation Measures
			potential toxicants are not anticipated to be substantially increased by the Proposed Project. All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located in such a manner as to prevent any spill runoff from entering waters of the U.S. **Lighting.** Night lighting shall be directed away from the MSHCP Conservation Area to protect species within the Conservation Area from direct night lighting. Shielding shall be incorporated in Project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased. **Noise.** Proposed noise-generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms, or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards. **Invasive Species.** Any proposed landscaping adjacent to the MSHCP Conservation Area shall not be composed of invasive, non-native plants listed in Table 6-2 of the MSHCP. Weed abatement measures will be implemented by the County to minimize the importation of

MSHCP Requirement	Studies	Results	Avoidance, Minimization, and/or Mitigation Measures
			nonnative plant material during and after construction. Eradication strategies would be employed should an invasion occur. **Barriers**. The Project will incorporate barriers along the edges of the Project site to minimize undirected public access, illegal trespass, off-road vehicle traffic, domestic animal predation, and dumping in the MSHCP Conservation Area. Boundary barriers may include rocks/boulders, with Wildlife Area signage. ESA fence will be placed during construction. **Grading/Land Development.** Manufactured slopes shall not extend across the parcel line of the MSHCP Conservation Area. All land disturbances associated with construction and operation of the Project will be wholly contained within the Proposed Project boundary.
Guidelines for siting and design of planned roads within Criteria Area and Public/Quasi-Public Lands.	Initial review of figures and maps provided in the Western Riverside County MSHCP, as well as, a review of the Riverside County Information Technology Open Data set (https://gis.countyofriverside.us/arcgis_public/rest/services/OpenData/Species_Habitats/MapServer/9) was conducted.	Approximately 12.48 acres of the Project Area is within designated Public/Quasi-Public Conserved Lands.	The Proposed Project is a covered activity under the Western Riverside County MSHCP Section 7.2.2 Planned Roads within Existing Public/Quasi-Public Lands. Impacts to habitats within Public/Quasi-Public Lands will be avoided to the extent possible with through Project design and the adoption of BMPs. Applicable mitigation to federal and state regulatory standards may be required for impacts to habitats within Public/Quasi-Public Lands. Compensatory mitigation for impacts to Public/Quasi-Public Lands may include onsite restoration of temporary impacts and may include purchase

MSHCP Requirement	Studies	Results	Avoidance, Minimization, and/or Mitigation Measures
			of mitigation credits applied to a mitigation bank approved by the resource agencies or off-site restoration for impacts.
Guidelines for construction of wildlife crossings	Initial review of figures and maps provided in the Western Riverside County MSHCP, as well as, a review of the Riverside County Information Technology Open Data set (https://gis.countyofriverside.us/arcgis_public/rest/services/OpenData/Species_Habitats/MapServer/9) was conducted.	The BSA contains "live-in" habitat and does provide contiguous cover or a safe crossing for wildlife. Currently the SAR R4 wash is considered a wildlife crossing. Widening of the Market Street Bridge is not anticipated to permanently impact the SAR R4 or the open water channel, the wildlife crossing feature within the BSA. There will be temporary impacts during construction.	Impacts to wildlife crossing will be avoided to the extent possible with through Project design and the adoption of BMPs and the guidelines established in the Western Riverside County MSHCP Section 7.5.2. The Proposed Project's bridge replacement activities are not anticipated to permanently impact any local wildlife crossing corridors. Refer to Natural Environmental Study, Section 3.1.3.5
Construction guidelines	No specific study required.	Sensitive biological resources are present within the Project study area. Project measures have incorporated standard best management practices and mitigation measures outlines in the MSHCP Volume 1, Appendix C.	Refer to the Avoidance and Minimization Efforts described throughout the NES document.

Appendix 2: MSHCP Figures

- MHSCP Boundary
- Current and proposed Geometric Footprint
- Core Area and Linkages (MSHCP Figure 3-2)
- Jurupa Area Plan with Cell, Cell Groups and Subunits Keyed to MSHCP Criteria (MSHCP Figure 3-12)
- Jurupa Area Plan with Vegetation, Cells and Cell Groups Keyed to MSHCP Criteria (MSHCP Figure 3-13)

Project Area

WESTERN RIVERSIDE MSHCP Boundary

Criteria Cells

AREA PLAN

Jurupa

AREA PLAN SUBUNIT

Santa Ana River North

CRITERIA AREA SURVEYS

Narrow Endemic Plants Survey

Burrowing Owl Survey

Criteria Cell 187

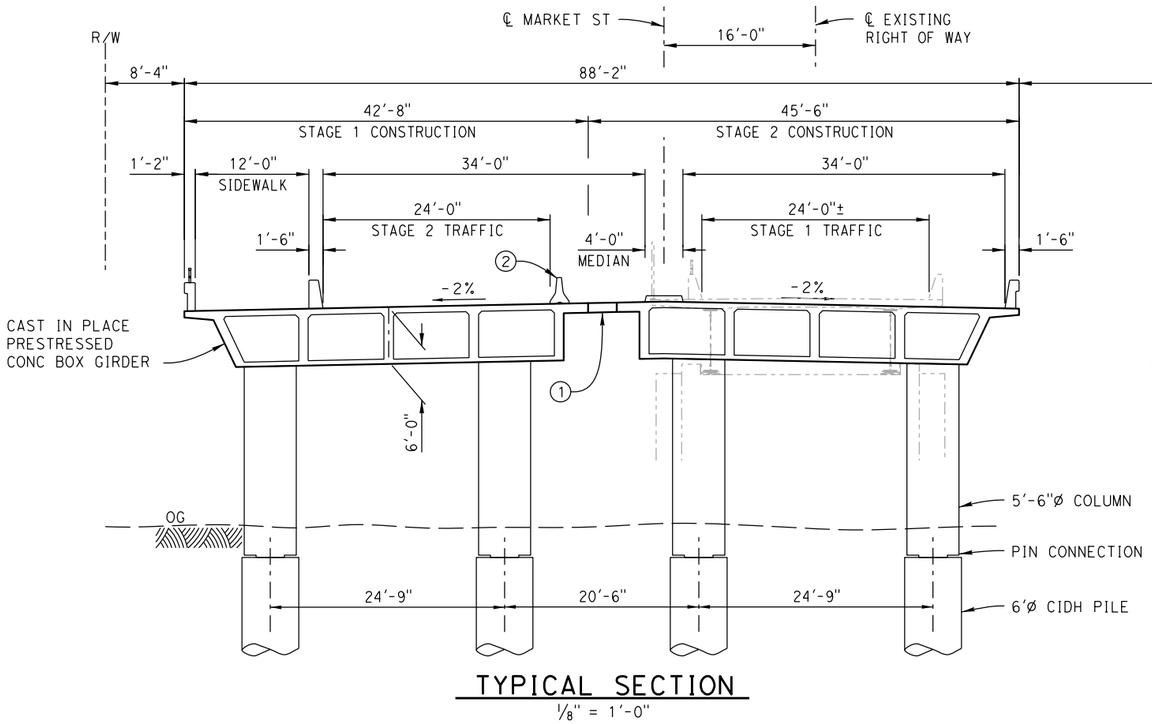
0 500 1,000 1,500 2,000 Feet

0 4 8 12 16 20 Miles

V:\1971-Market Street\BIO\F1 MSHCP Consistency MSHCP Boundary.mxd

Source: ESRI Aerial Online; Dokken Engineering 4/2/2018; Created By: cowens

FIGURE 1
MSHCP Boundary
Bridge No. 56C-0024
Market Street Bridge Replacement Project
County of Riverside, California

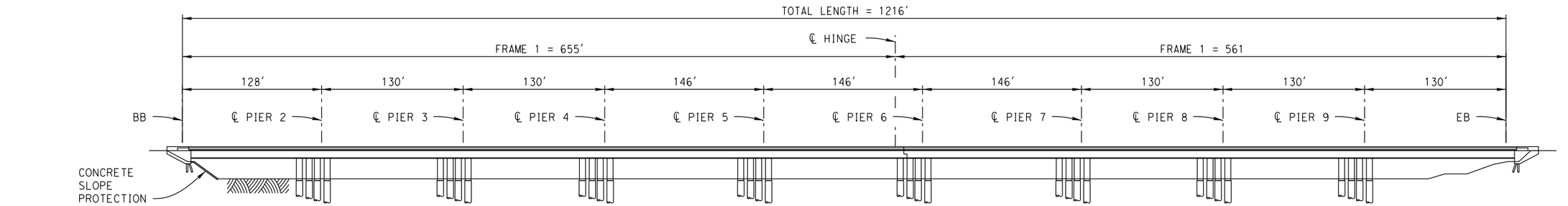


TYPICAL SECTION

1/8" = 1'-0"

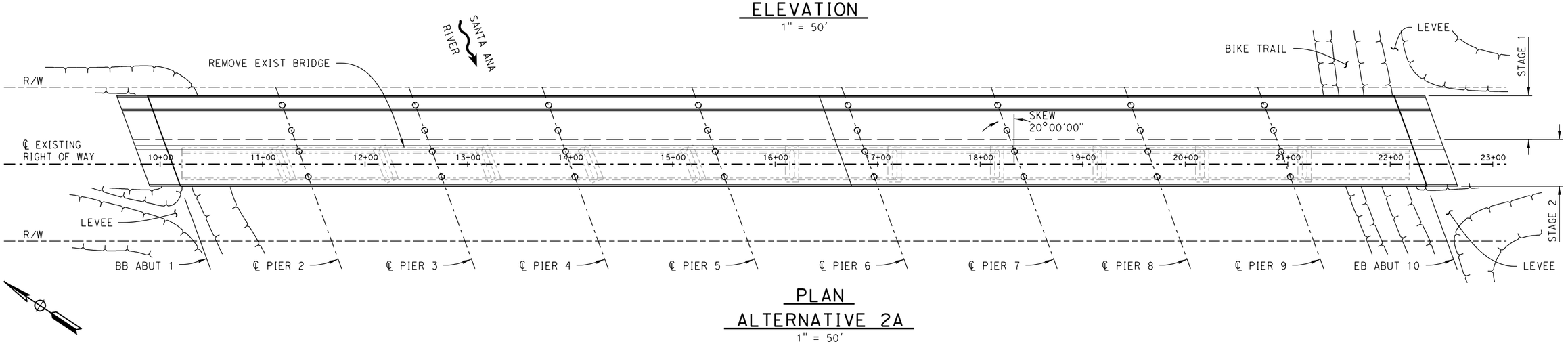
① Deck Closure Pour.
② Temporary Railing (Type K).

DATE OF ESTIMATE		Sept 2017
STRUCTURE DEPTH	=	6'-0"
LENGTH	=	1216'
WIDTH	=	88'-2"
AREA	=	107,710 SQ FT
COST/SQ FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	$ 218.83
TOTAL COST	=	$ 23,570,000



ELEVATION

1" = 50'



PLAN
ALTERNATIVE 2A

1" = 50'

PREFERRED ALTERNATIVE

RIVERSIDE COUNTY

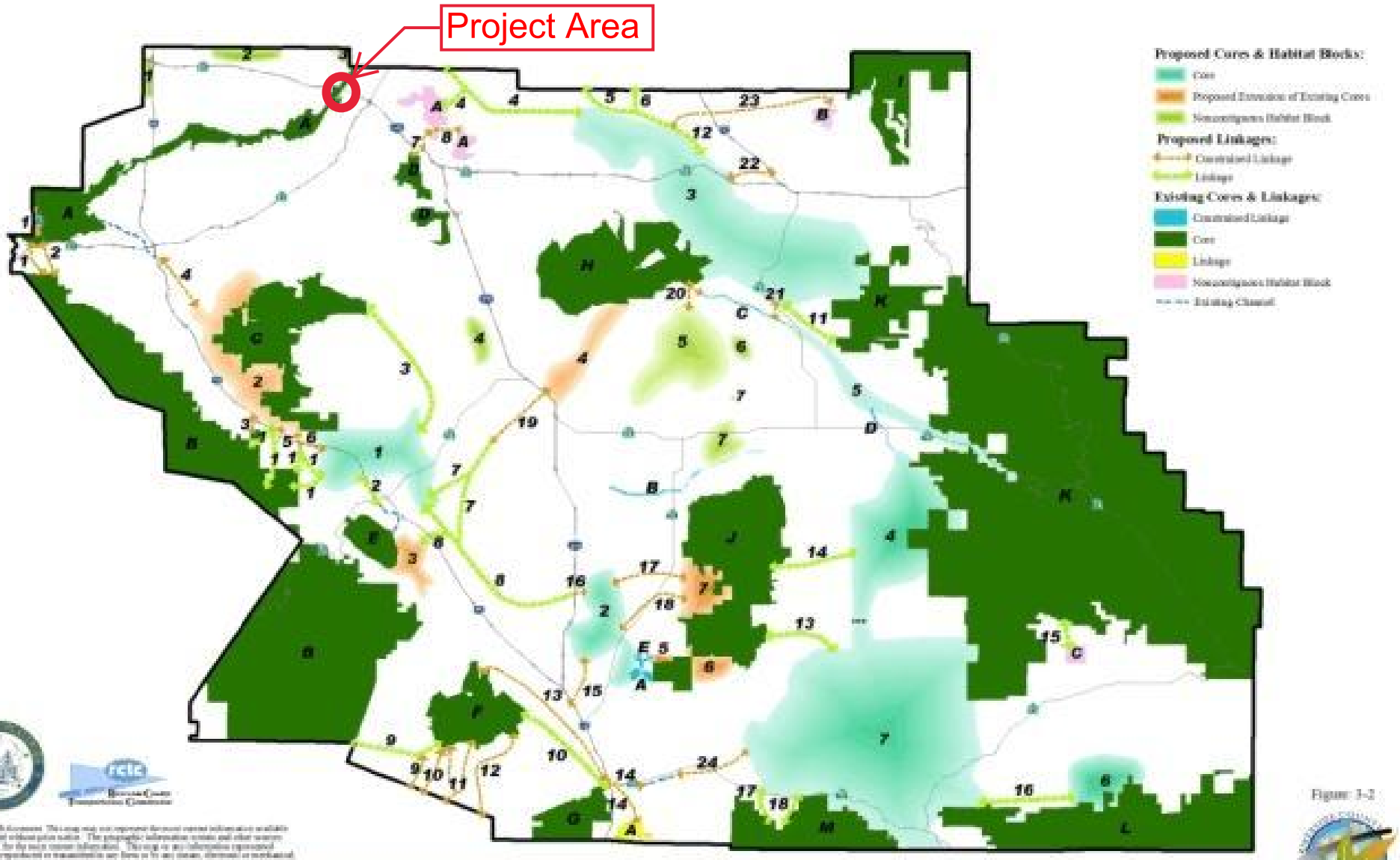
SANTA ANNA RIVER BRIDGE AT MARKET STREET
BRIDGE ALTERNATIVE STUDY - 9 SPAN

SHEET OF SHEETS
DATE: July, 2017
JOB NO: 1971

NO.	DATE	REVISION	BY	APPD

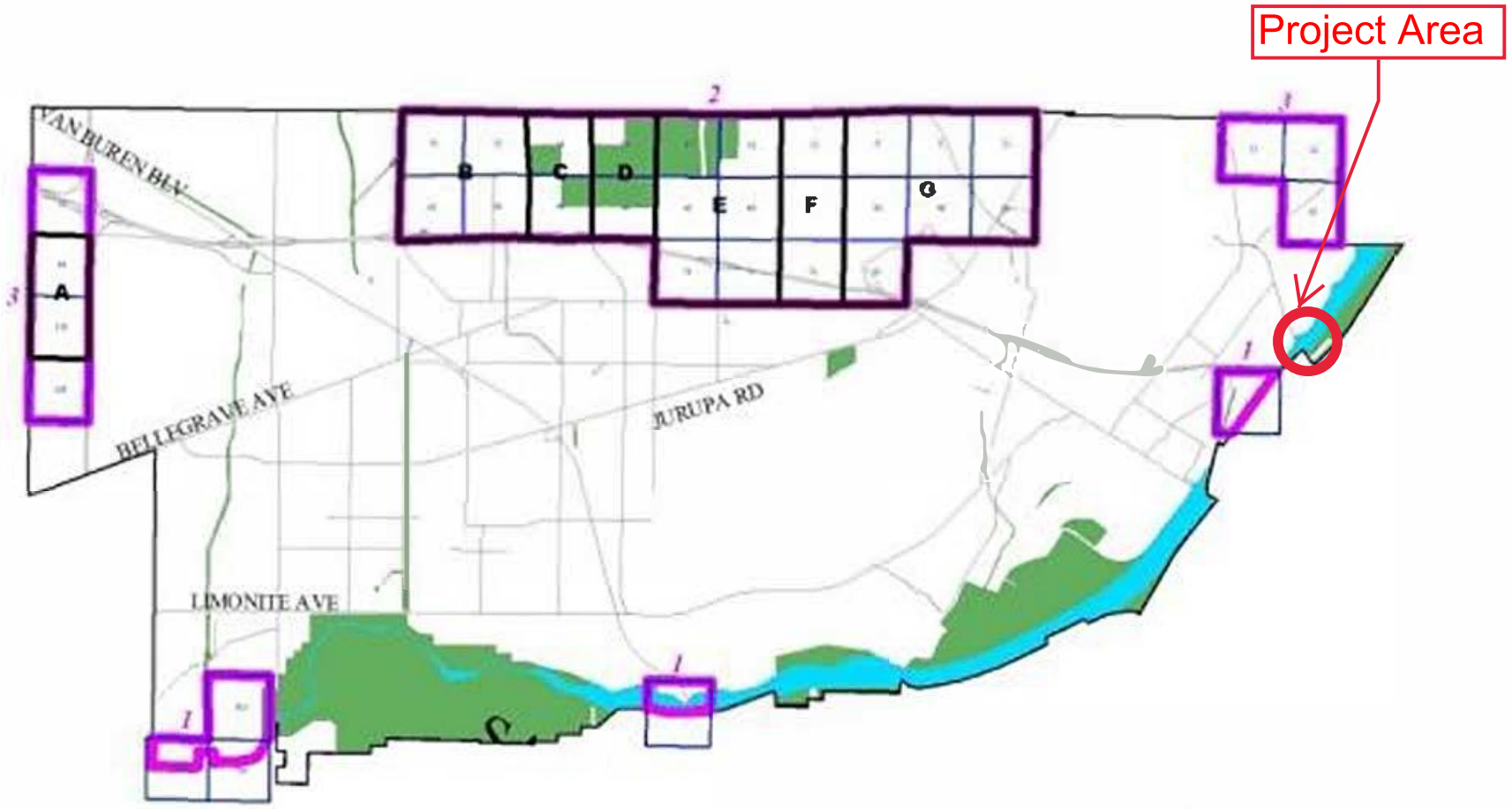
DESIGNED: M. Maechler
DRAWN: T. Mason
CHECKED:
APPD:
BRIDGE No. 56C-0024

DOKKEN ENGINEERING
110 Blue Ravine Road, Suite 200
Folsom, CA 95630
Ph: 916-858-0642 Fax: 916-858-0643



Schematic Cores and Linkages Map

Figure 3-2



Jurupa Area Plan With Cells, Cell Groups & Subunits Keyed to MSHCP Criteria

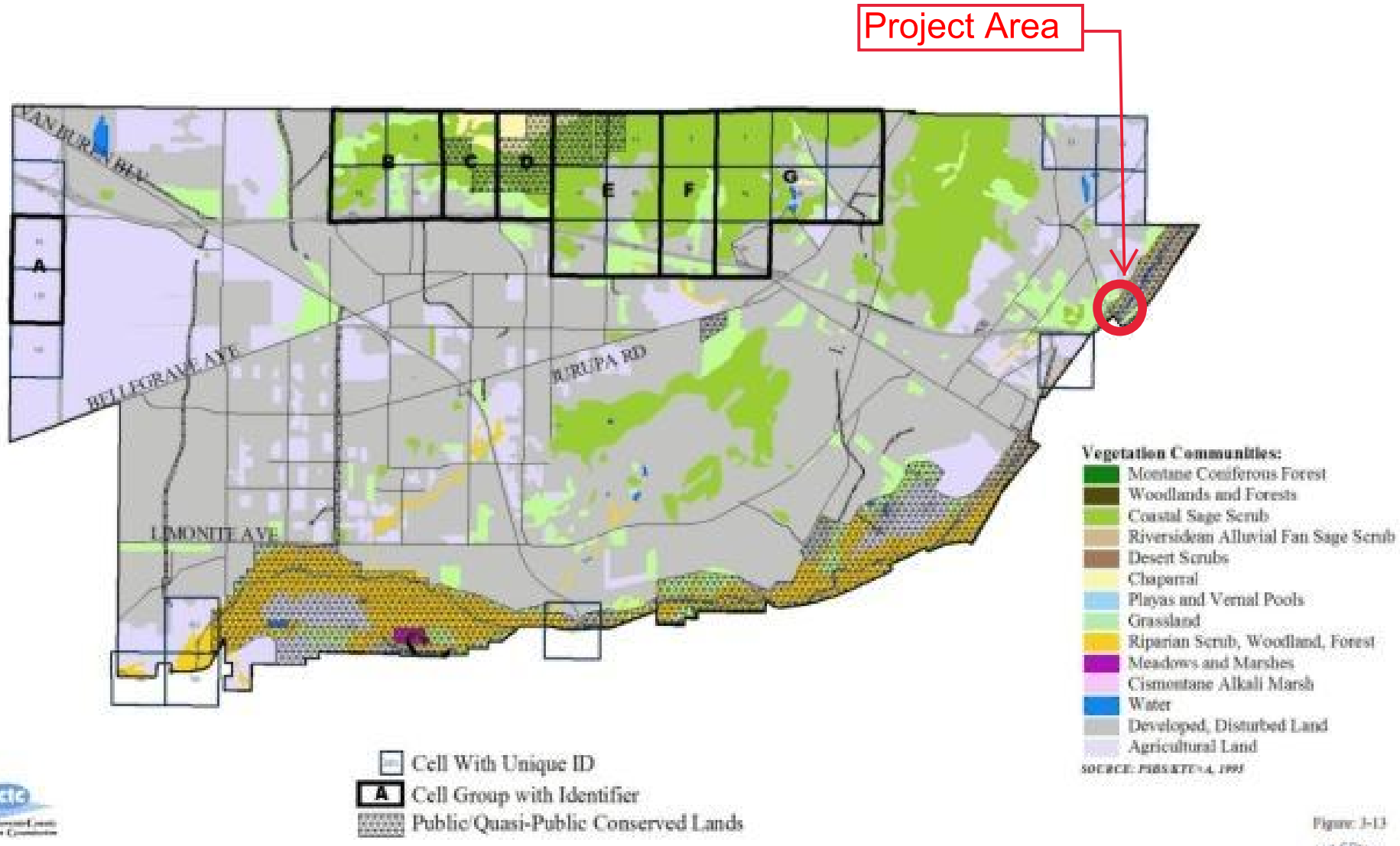


Figure 3-13

Jurupa Area Plan With Vegetation, Cells and Cell Groups Keyed to MSHCP Criteria

Attachment 3:
DBESP

Determination of Biologically Equivalent or Superior Preservation (DBESP)

This document has been prepared to comply with the Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas and Vernal Pools required by Section 6.1.2 (Vol. I.) of the MSHCP. A summary of the required information is identified for the Project below in Table 1.

Table 1 Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the Market Street Bridge Rehabilitation Project

Item	MSHCP Section 6.1.2 (Vol. I) Required Information	Location of Information or Summary Response in Report
1	Definition of the Project Area	The Market Street Bridge Rehabilitation Project is located in Riverside County, California. The Project Area is north of California SR-60 and south of I-10 in the Cities of Riverside and Jurupa Valley, Riverside County, California Township 2, South, Range 5 East, in the southeast corner of the United States Geological Survey (USGS) Fontana 7.5-minute topographic quadrangle. The Biological Study Area (BSA) encompasses approximate 74.17 acres. The Project Area is located in the Jurupa Valley region of Western Riverside County within the Santa Ana Watershed. The Project consists predominately of developed areas, disturbed vegetation and riparian/riverine habitats. Construction will occur within County and private right of way. Areas surrounding and adjacent to the Project Area include industrial development, disturbed vegetation and the Santa Ana River Reach 4 wash. The BSA was defined as the Proposed Project impact area and a 50-to-100-foot buffer to accommodate the design and facilitate construction. The Proposed Project impact area is defined as all areas that will be temporarily or permanently impacted by the proposed Project, including proposed right-of-way, construction easements, cut and fill limits, potential staging areas, and access roads.
2	A written Project description, demonstrating why an avoidance alternative is not possible	The existing Market Street Bridge (BRLS-5956-(200)) was designed as an Arterial Highway and serves as part of an alternate local route connecting I-10 and SR-60. The bridge serves as a major link across the SAR R4 for the residential and commercial communities in the northwestern Riverside County in the neighboring Cities of Jurupa Valley and Riverside. The existing bridge is currently on the Federal Eligible Bridge List. It qualifies to receive Federal Highway Bridge Program funds for total replacement with a new 4-lane bridge because it is designated as Structurally Deficient and Functionally Obsolete with a Sufficiency Rating of 45.1. The current Annual

		Average Daily Traffic of 18,333 vehicles is considered high for a two-lane roadway. The Project proposes to replace the existing bridge with a similar in length, 1,200-foot-long bridge. The replacement structure will be approximately 88-feet-wide in order to accommodate American Association of State Highway and Transportation Officials requirements. Along Market Street, roadway improvements, including widening and striping to four lanes, will occur between Rivera Street to the south, and 24th Street/Via Cerro to the north. The purpose of the new bridge is to construct a structure that can accommodate four traffic lanes with standard shoulders, thus providing increased capacity that can accommodate existing Annual Average Daily Traffic rates. The replacement bridge will be designed in accordance with the latest state of the art bridge design criteria, thus removing the structurally deficient fracture critical bridge from the inventory. Under the No-Build, or "Do Nothing" Alternative, no modifications to the Market Street Bridge (No. 56C-0024) would not occur, thus the bridge would remain structurally deficient and continue to deteriorate. Additionally, access across the Market Street Bridge would continue to be subject to congested traffic and delays.
3	A written description of biological information available for the Project Area including the results of resource mapping	The proposed Market Street Bridge Rehabilitation Project is located within Western Riverside County MSHCP Public/Quasi Public (PQP) Lands. The BSA is also in a Narrow Endemic Plant Species Survey Area (NEPSSA), Burrowing Owl Survey Area, the Criteria Species Survey Area, MSHCP Core A Area which provides important Core Linkages and Wildlife Corridors/Crossings. The BSA is composed of native and nonnative vegetation communities including disturbed riparian forest, riparian forest, non-native grassland, disturbed riparian scrub, riparian scrub, ruderal, landscaped and urban/barren land. The Project Area is a combination of developed areas, and/or highly disturbed, as well as, natural communities (within the SAR R4 wash). The one surface water source within the BSA, SAR R4 open water channel and is classified as a natural riverine. The following habitats were classified within the 74.17 acres of the Project Area: barren/urban, disturbed riparian forest, riparian forest, landscape, non-native grassland, disturbed riparian scrub, riparian scrub, and ruderal habitats. No wetlands or vernal pool resources were detected within the BSA. SAR R4 is vegetated with native and non-native vegetation including; Fremont cottonwood, willow spp., mulefat, shortpod mustard, Russian thistle, common ripgut grass and foxtail chess. Vegetation capable of supporting species associated with Riparian/Riverine Areas pursuant to Section 6.1.2 (Vol. I.) of the MSHCP was observed during surveys (least Bell's vireo). The SAR R4 open water channel and the associated river wash. This area falls within an area categorized by the Western Riverside County MSHCP as an Exiting Core A Area, a wildlife corridor. Project Area contains 12.48 acres of riparian/riverine areas, which consist of the SAR R4 open water channel and all associated habitats between the base of the levee slopes. as well as, unvegetated riverbed and open water. Section 6.1.2: Protection of Species Associated with Riparian/Riverine

		Areas and Vernal Pools. The MSHCP species associated with riparian/riverine areas and vernal pools, as listed in Section 6.1.2, were assessed for the probability of occurring within and adjacent to the Project site. One riparian/riverine species, least Bell's vireo, was found to be present within the BSA per the 2012 and 2017 focused riparian bird surveys. Federally designated critical habitat for the Santa Ana sucker is present in the BSA. Two other riparian/riverine species, the Santa Ana River woollystar and Santa Ana sucker, have the potential to occupy the site. Approximately 80% of the proposed Project Area is located within designated MSCHCP Narrow Endemic Plant Species Survey Area (NEPSSA) and a Criteria Species Survey Area. Per MSHCP requirements, focused surveys and habitat assessments were conducted for the following NEPSSA species; San Diego ambrosia (*Ambrosia pumila*), Brand's star phacelia (*Phacelia stellaris*), San Miguel savory (*Satureja chandleri*) and Santa Ana woollystar (*Eriastrum densifolium* spp*. sanctorum*). Santa Ana woollystar were detected during focused surveys (2012-2013) conducted within the Project Area. All other listed sensitive NEPSSA plant species are considered absent from the Project Area due to an absence of the required habitat, the highly disturbed and developed nature of the Project Area and the general lack of preferred soil types mapped onsite. The Proposed Project will temporarily impact potentially suitable habitat for 4 sensitive wildlife species with potential to occur within the vicinity of the BSA (Table 3 in NES Document). Burrowing owl (*Athene cunicularia*), Loggerhead shrike (*Lanius ludovicianus*), western yellow bat (Lasiurus xanthinus), and coast horned lizard (Phrynosoma blainvillii) are not listed federally and/or state endangered or threatened; however, all are considered species of special concern by the CDFW and are protected under the Western Riverside County MSHCP. All of these species have a low/moderate potential to occur due to suitable biological resources present within the Project Area. Due to the presence of potentially suitable burrowing owl habitat present onsite, preconstruction surveys conducted within 30 days prior to initial ground-disturbing activity, as required. With the inclusion of the mitigation measures mentioned in 4.3.1.3, impacts to sensitive wildlife species will be minimized to the greatest extent feasible.
4	Quantification of unavoidable impacts to Riparian/Riverine areas and vernal pools associated with the project, including direct and indirect effects	The Proposed Project will result in temporary impacts to jurisdictional waters of the U.S. and State and associated protected riparian/riverine habitats. Temporary effects include temporary construction easements, temporary equipment access areas, temporary staging areas and 0.74 acres of new shade effects (Table 4 in the NES document) beneath the additional bridge footprint, construction areas outside of temporary effects that will be re-contoured and re-vegetated to preconstruction conditions (Figure 7. Project Impacts). Per Regulatory Guidance Letter (RGL) 90-08 issued by the USACE in 1990, no permanent impacts to waters of the U.S. (SAR R4 open water channel and dry side channel) will occur from the construction of the new bridge structure pier walls. According to the RGL, new pilings that do not constitute the equivalent "of replacing an aquatic area with dry land or changing the bottom elevation of a water body," will not result in any permanent impacts. No permanent impacts resulting from paving or land alterations would occur. Permanent impacts are categorized by the establishment of the new bridge

<table>
<tr><td></td><td></td><td>piers; however, existing piers are 0.01 acre each and the proposed piers are anticipated at 0.005 acre each. Therefore, the establishment of new piers will result in a net gain of 0.1 acre within the BSA and no permanent impacts are anticipated from the proposed Project. The 0.1 acre footprint reduction is considered part of the on-site mitigation and the replacement of piers is considered a temporary effect (consisting of 0.02 acre), as suggested by Regulatory Agency staff during the January 18, 2018, Pre-Application meeting at RCA.

With the inclusions of the mitigation measures mentioned in section 4.1.1.3 in the NES document, impacts to jurisdictional waters/riparian/riverine habitats will be minimized to the greatest extent possible, and no permanent impacts are anticipated.

<table>
<tr><th rowspan="2">Vegetation Community</th><th rowspan="2">Total Area within BSA</th><th colspan="2">Effects</th></tr>
<tr><th>Temporary Impacts</th><th>Shade Impact (areas that will receive less than 6 hours of sun light)</th></tr>
<tr><td>Non-Native Grassland</td><td>4.20</td><td>2.66</td><td>0.13</td></tr>
<tr><td>Disturbed Riparian Scrub</td><td>1.47</td><td>1.33</td><td>0</td></tr>
<tr><td>Riparian woodland</td><td>6.43</td><td>4.34</td><td>0.39</td></tr>
<tr><td>Disturbed Riparian Woodland</td><td>3.36</td><td>2.09</td><td>0.16</td></tr>
<tr><td>Unvegetated Riverbed</td><td>0.83</td><td>0.83</td><td>N/A</td></tr>
<tr><td>Open water of SAR R4</td><td>0.79</td><td>0.49</td><td>0.06</td></tr>
<tr><td>Total</td><td>17.08</td><td>11.74</td><td>0.74</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>A written description of Project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization and/or compensation through</td><td>The Proposed Project would result in temporary impacts to vegetation communities, including jurisdictional waters within the BSA. Sensitive listed species were detected within the BSA during biological surveys.

A variety of measures have been incorporated into the Proposed Project to avoid, minimize, and mitigate for direct and indirect impacts to sensitives natural resources and species found within the BSA.

SAR R4 open water channel and associated sensitive habitats. The Project proponent will be required to comply with the terms and conditions of all permits, including Regional Water Quality Control Board (401), U.S. Army Corps of Engineers (404), and California Department of Fish and Wildlife (1602). Compensatory mitigation for impacts to SAR R4 may include purchase of mitigation credits applied to a mitigation bank approved by the permitting agencies or payment of fees into an in-lieu fee program. Specific mitigation measures and ratios would be determined through coordination</td></tr>
</table>

	restoration or enhancement	with the permitting agencies during the permitting phase of the project. No vernal pools or vegetation capable of supporting Species Associated with Riparian/Riverine Areas pursuant to Section 6.1.2 (Vol. I.) of the MSHCP was observed during surveys. The preferable mitigation is the avoidance of impacts to sensitive resources by Project design. Impacts to sensitive resources will be minimized by the placement of a suitable buffer of "Environmentally Sensitive Area" (ESA) orange construction fencing and the implementation of best management practices (BMPs). The upstream and downstream limits of the Project's disturbance to SAR R4 open water channel plus lateral limits of disturbance on either side of the stream channel will be clearly defined with ESA orange construction fencing and reviewed by the biologist prior to initiation of work. Where avoidance is not possible, all feasible mitigation measures will be incorporated into the Project such that minimal environmental damage occurs.
6	A finding demonstrating that although the Proposed Project would not avoid impacts, with proposed design and compensation measures, the Project would be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures, based on one or more of the following factors provided under Item 7, 8, and 9:	The Proposed Project would not be able to avoid all impacts to SAR R4 open water channel, associated sensitive riparian habitats and associated sensitive species; however, with incorporation of minimization and compensation measures, the Proposed Project would be biologically equivalent or superior to that which would occur under an avoidance alternative. Refer to items 7 a-c below.
7a	a. Effects on Conserved Habitats;	The proposed project does not fall within a MSHCP Criteria Area; therefore, it does not require plan compliance. The purpose of the Riparian/Riverine procedures described in Section 6.1.2 of the MSHCP is to ensure that the biological functions and values of Riparian/Riverine areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSHCP Conservation Area are maintained. As further defined under the MSHCP (Section 6.1.2), "those impacts that are unavoidable shall be mitigated such that the lost functions and values as they relate to Covered Species are replaced as set forth under the Determination of Biologically Equivalent or Superior Preservation."

		SAR R4 and associated sensitive riparian habitats will be impacted by improvements to Market Street Bridge Rehabilitation Project. The SAR R4 open water channel within the BSA is broad with a low gradient. The river is leveed and contains a low-flow, open water channel along the westerly levee. Therefore, the SAR R4 open water channel is considered perennial within the BSA. Vegetation within the river is dominated by disturbed riparian forest, riparian forest, disturbed riparian scrub and riparian scrub. The associated habitat contains both native and non-native vegetation including; willows, Fremont cottonwood, mule fat, caster bean and tamarisk. However, vegetation associated with the channel is disturbed and extremely fragmented. Indirect impacts to the SAR R4 open water channel and associated sensitive riparian habitats would be avoided by following the best management practices, as outlined in Volume 1, Appendix C, of the MSHCP and described in the Natural Environmental Report.
7b	b. Effects on Section 6.1.2 Riparian-Riverine Species (MSHCP Volume I, Section 6.1.2)	The NEPSSA Species, Santa Ana woollystar, and MSHCP protected species, least Bell's vireo and the coast horned lizard were detected onsite during general and focused habitat assessments and surveys. Additionally, designated Santa Ana sucker critical habitat is within the BSA. The following compensatory mitigation strategy is proposed: • 1.48 acres. To help off-set the temporal loss of riparian vegetation due to 0.74 acres of shade impacts, payment at a 2:1 ratio to the Riverside-Corona Resource Conservation District in-lieu fee program will be made. This fee will be paid following completion of the NEPA/CEQA environmental documents, rather than prior to construction. If pre-project mitigation is ultimately infeasible, coordination of alternative mitigation strategies shall be conducted with the wildlife agencies. • 16.43 acres. To help off-set the temporal loss of riparian vegetation through temporary impacts to 12.48 acres of riverine/riparian at a 1.25:1 ratio and temporary impacts to 0.83 acres currently occupied by the existing bridge at a 1:1 ratio, implementation of a 5-year Invasive Species Removal Program for 16.43 acres within the Santa Ana River will occur. The locations for the invasive species removal will include the project site and additional sites shall be coordinated with the Riverside County Flood Control District. It is anticipated that each year, there will be a focus on a different 16.43 acres within the Santa Ana River depending upon the identified needs at that time. Additionally, it is anticipated that control efforts each year will involve multiple removal/control efforts. Prior to construction, an Invasive Species Removal Plan will be prepared and will be submitted to the WRMSHCP agencies, including the Western Riverside County Regional Conservation Authority, U.S. Fish & Wildlife Service, and the California Department of Fish and Wildlife, for review and approval. BMPs will be implemented further minimizing potential impacts during construction and ensuring that impacts to water quality beyond the Project Area are minimized to the greatest extent feasible. These measures will be coordinated with the Regional Water Quality Control Board through the Section 401 Clean Water Act permitting process.
7c	c. Effects on riparian Linkages and function	The Project is located within MSHCP Core A. Core A consists of Prado Basin and the Santa Ana River. It is a southwest-to-northeast trending swath of land that is composed largely of Public/Quasi-Public Lands owned

	of the MSHCP Conservation Area	by a variety of public entities (Riverside County, the City of Riverside and the Riverside County Flood Control and Water Conservation District). The Core A functions as a Linkage, connecting Orange County to the west with San Bernardino County to the north. The Project will result in temporary impacts within Public/Quasi-Public Lands; the majority of these effects are temporary and within the Santa Ana River floodplain. Because Core A and the Public/Quasi-Public Lands within the Santa Ana River floodplain function as a linkage and provide high quality riparian habitat, Project effects will be avoided, minimized, and mitigated to the greatest extent feasible. High quality riparian habitat within the Core and along the edges must be maintained for species such as least Bell's vireo. The MSHCP requires habitat along the edges of Core areas be maintained through the implementation of the Guidelines Pertaining to the Urban/Wildlands Interface. Therefore, Core A within the Project footprint is subject to these guidelines. The guidelines describe management measures to avoid or reduce Project effects related to drainage, toxics, lighting, noise, invasive species, barriers, grading, and land development. BMPs will be implemented further minimizing potential impacts during construction and ensuring that impacts to riparian Linkages and MSCHP Conservation lands are minimized to the greatest extent feasible.

Appendix E Determination of Biologically Superior or Equivalent Preservation

Determination of Biologically Equivalent or Superior Preservation (DBESP)

This document has been prepared to comply with the Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas and Vernal Pools required by Section 6.1.2 (Vol. I.) of the MSHCP. A summary of the required information is identified for the Project below in Table 1.

Table 1 Determination of Biologically Equivalent or Superior Preservation for Riverine/Riparian Areas for the Market Street Bridge Rehabilitation Project

Item	MSHCP Section 6.1.2 (Vol. I) Required Information	Location of Information or Summary Response in Report
1	Definition of the Project Area	The Market Street Bridge Rehabilitation Project is located in Riverside County, California. The Project Area is north of California SR-60 and south of I-10 in the Cities of Riverside and Jurupa Valley, Riverside County, California Township 2, South, Range 5 East, in the southeast corner of the United States Geological Survey (USGS) Fontana 7.5-minute topographic quadrangle. The Biological Study Area (BSA) encompasses approximate 74.17 acres. The Project Area is located in the Jurupa Valley region of Western Riverside County within the Santa Ana Watershed. The Project consists predominately of developed areas, disturbed vegetation and riparian/riverine habitats. Construction will occur within County and private right of way. Areas surrounding and adjacent to the Project Area include industrial development, disturbed vegetation and the Santa Ana River Reach 4 wash. The BSA was defined as the Proposed Project impact area and a 50-to-100-foot buffer to accommodate the design and facilitate construction. The Proposed Project impact area is defined as all areas that will be temporarily or permanently impacted by the proposed Project, including proposed right-of-way, construction easements, cut and fill limits, potential staging areas, and access roads.
2	A written Project description, demonstrating why an avoidance alternative is not possible	The existing Market Street Bridge (BRLS-5956-(200)) was designed as an Arterial Highway and serves as part of an alternate local route connecting I-10 and SR-60. The bridge serves as a major link across the SAR R4 for the residential and commercial communities in the northwestern Riverside County in the neighboring Cities of Jurupa Valley and Riverside. The existing bridge is currently on the Federal Eligible Bridge List. It qualifies to receive Federal Highway Bridge Program funds for total replacement with a new 4-lane bridge because it is designated as Structurally Deficient and Functionally Obsolete with a Sufficiency Rating of 45.1. The current Annual

		Average Daily Traffic of 18,333 vehicles is considered high for a two-lane roadway. The Project proposes to replace the existing bridge with a similar in length, 1,200-foot-long bridge. The replacement structure will be approximately 88-feet-wide in order to accommodate American Association of State Highway and Transportation Officials requirements. Along Market Street, roadway improvements, including widening and striping to four lanes, will occur between Rivera Street to the south, and 24th Street/Via Cerro to the north. The purpose of the new bridge is to construct a structure that can accommodate four traffic lanes with standard shoulders, thus providing increased capacity that can accommodate existing Annual Average Daily Traffic rates. The replacement bridge will be designed in accordance with the latest state of the art bridge design criteria, thus removing the structurally deficient fracture critical bridge from the inventory. Under the No-Build, or "Do Nothing" Alternative, no modifications to the Market Street Bridge (No. 56C-0024) would not occur, thus the bridge would remain structurally deficient and continue to deteriorate. Additionally, access across the Market Street Bridge would continue to be subject to congested traffic and delays.
3	A written description of biological information available for the Project Area including the results of resource mapping	The proposed Market Street Bridge Rehabilitation Project is located within Western Riverside County MSHCP Public/Quasi Public (PQP) Lands. The BSA is also in a Narrow Endemic Plant Species Survey Area (NEPSSA), Burrowing Owl Survey Area, the Criteria Species Survey Area, MSHCP Core A Area which provides important Core Linkages and Wildlife Corridors/Crossings. The BSA is composed of native and nonnative vegetation communities including disturbed riparian forest, riparian forest, non-native grassland, disturbed riparian scrub, riparian scrub, ruderal, landscaped and urban/barren land. The Project Area is a combination of developed areas, and/or highly disturbed, as well as, natural communities (within the SAR R4 wash). The one surface water source within the BSA, SAR R4 open water channel and is classified as a natural riverine. The following habitats were classified within the 74.17 acres of the Project Area: barren/urban, disturbed riparian forest, riparian forest, landscape, non-native grassland, disturbed riparian scrub, riparian scrub, and ruderal habitats. No wetlands or vernal pool resources were detected within the BSA. SAR R4 is vegetated with native and non-native vegetation including; Fremont cottonwood, willow spp., mulefat, shortpod mustard, Russian thistle, common ripgut grass and foxtail chess. Vegetation capable of supporting species associated with Riparian/Riverine Areas pursuant to Section 6.1.2 (Vol. I.) of the MSHCP was observed during surveys (least Bell's vireo). The SAR R4 open water channel and the associated river wash. This area falls within an area categorized by the Western Riverside County MSHCP as an Exiting Core A Area, a wildlife corridor. Project Area contains 12.48 acres of riparian/riverine areas, which consist of the SAR R4 open water channel and all associated habitats between the base of the levee slopes. as well as, unvegetated riverbed and open water. Section 6.1.2: Protection of Species Associated with Riparian/Riverine

		Areas and Vernal Pools. The MSHCP species associated with riparian/riverine areas and vernal pools, as listed in Section 6.1.2, were assessed for the probability of occurring within and adjacent to the Project site. One riparian/riverine species, least Bell's vireo, was found to be present within the BSA per the 2012 and 2017 focused riparian bird surveys. Federally designated critical habitat for the Santa Ana sucker is present in the BSA. Two other riparian/riverine species, the Santa Ana River woollystar and Santa Ana sucker, have the potential to occupy the site. Approximately 80% of the proposed Project Area is located within designated MSCHCP Narrow Endemic Plant Species Survey Area (NEPSSA) and a Criteria Species Survey Area. Per MSHCP requirements, focused surveys and habitat assessments were conducted for the following NEPSSA species; San Diego ambrosia (*Ambrosia pumila*), Brand's star phacelia (*Phacelia stellaris*), San Miguel savory (*Satureja chandleri*) and Santa Ana woollystar (*Eriastrum densifolium* spp*. sanctorum*). Santa Ana woollystar were detected during focused surveys (2012-2013) conducted within the Project Area. All other listed sensitive NEPSSA plant species are considered absent from the Project Area due to an absence of the required habitat, the highly disturbed and developed nature of the Project Area and the general lack of preferred soil types mapped onsite. The Proposed Project will temporarily impact potentially suitable habitat for 4 sensitive wildlife species with potential to occur within the vicinity of the BSA (Table 3 in NES Document). Burrowing owl (*Athene cunicularia*), Loggerhead shrike (*Lanius ludovicianus*), western yellow bat (Lasiurus xanthinus), and coast horned lizard (Phrynosoma blainvillii) are not listed federally and/or state endangered or threatened; however, all are considered species of special concern by the CDFW and are protected under the Western Riverside County MSHCP. All of these species have a low/moderate potential to occur due to suitable biological resources present within the Project Area. Due to the presence of potentially suitable burrowing owl habitat present onsite, preconstruction surveys conducted within 30 days prior to initial ground-disturbing activity, as required. With the inclusion of the mitigation measures mentioned in 4.3.1.3, impacts to sensitive wildlife species will be minimized to the greatest extent feasible.
4	Quantification of unavoidable impacts to Riparian/Riverine areas and vernal pools associated with the project, including direct and indirect effects	The Proposed Project will result in temporary impacts to jurisdictional waters of the U.S. and State and associated protected riparian/riverine habitats. Temporary effects include temporary construction easements, temporary equipment access areas, temporary staging areas and 0.74 acres of new shade effects (Table 4 in the NES document) beneath the additional bridge footprint, construction areas outside of temporary effects that will be re-contoured and re-vegetated to preconstruction conditions (Figure 7. Project Impacts). Per Regulatory Guidance Letter (RGL) 90-08 issued by the USACE in 1990, no permanent impacts to waters of the U.S. (SAR R4 open water channel and dry side channel) will occur from the construction of the new bridge structure pier walls. According to the RGL, new pilings that do not constitute the equivalent "of replacing an aquatic area with dry land or changing the bottom elevation of a water body," will not result in any permanent impacts. No permanent impacts resulting from paving or land alterations would occur. Permanent impacts are categorized by the establishment of the new bridge

<table>
<tr><td></td><td></td><td>piers; however, existing piers are 0.01 acre each and the proposed piers are anticipated at 0.005 acre each. Therefore, the establishment of new piers will result in a net gain of 0.1 acre within the BSA and no permanent impacts are anticipated from the proposed Project. The 0.1 acre footprint reduction is considered part of the on-site mitigation and the replacement of piers is considered a temporary effect (consisting of 0.02 acre), as suggested by Regulatory Agency staff during the January 18, 2018, Pre-Application meeting at RCA.

With the inclusions of the mitigation measures mentioned in section 4.1.1.3 in the NES document, impacts to jurisdictional waters/riparian/riverine habitats will be minimized to the greatest extent possible, and no permanent impacts are anticipated.

<table>
<tr><th rowspan="2">Vegetation Community</th><th rowspan="2">Total Area within BSA</th><th colspan="2">Effects</th></tr>
<tr><th>Temporary Impacts</th><th>Shade Impact (areas that will receive less than 6 hours of sun light)</th></tr>
<tr><td>Non-Native Grassland</td><td>4.20</td><td>2.66</td><td>0.13</td></tr>
<tr><td>Disturbed Riparian Scrub</td><td>1.47</td><td>1.33</td><td>0</td></tr>
<tr><td>Riparian woodland</td><td>6.43</td><td>4.34</td><td>0.39</td></tr>
<tr><td>Disturbed Riparian Woodland</td><td>3.36</td><td>2.09</td><td>0.16</td></tr>
<tr><td>Unvegetated Riverbed</td><td>0.83</td><td>0.83</td><td>N/A</td></tr>
<tr><td>Open water of SAR R4</td><td>0.79</td><td>0.49</td><td>0.06</td></tr>
<tr><td>Total</td><td>17.08</td><td>11.74</td><td>0.74</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>A written description of Project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, minimization and/or compensation through</td><td>The Proposed Project would result in temporary impacts to vegetation communities, including jurisdictional waters within the BSA. Sensitive listed species were detected within the BSA during biological surveys.

A variety of measures have been incorporated into the Proposed Project to avoid, minimize, and mitigate for direct and indirect impacts to sensitives natural resources and species found within the BSA.

SAR R4 open water channel and associated sensitive habitats. The Project proponent will be required to comply with the terms and conditions of all permits, including Regional Water Quality Control Board (401), U.S. Army Corps of Engineers (404), and California Department of Fish and Wildlife (1602). Compensatory mitigation for impacts to SAR R4 may include purchase of mitigation credits applied to a mitigation bank approved by the permitting agencies or payment of fees into an in-lieu fee program. Specific mitigation measures and ratios would be determined through coordination</td></tr>
</table>

	restoration or enhancement	with the permitting agencies during the permitting phase of the project. No vernal pools or vegetation capable of supporting Species Associated with Riparian/Riverine Areas pursuant to Section 6.1.2 (Vol. I.) of the MSHCP was observed during surveys. The preferable mitigation is the avoidance of impacts to sensitive resources by Project design. Impacts to sensitive resources will be minimized by the placement of a suitable buffer of "Environmentally Sensitive Area" (ESA) orange construction fencing and the implementation of best management practices (BMPs). The upstream and downstream limits of the Project's disturbance to SAR R4 open water channel plus lateral limits of disturbance on either side of the stream channel will be clearly defined with ESA orange construction fencing and reviewed by the biologist prior to initiation of work. Where avoidance is not possible, all feasible mitigation measures will be incorporated into the Project such that minimal environmental damage occurs.
6	A finding demonstrating that although the Proposed Project would not avoid impacts, with proposed design and compensation measures, the Project would be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures, based on one or more of the following factors provided under Item 7, 8, and 9:	The Proposed Project would not be able to avoid all impacts to SAR R4 open water channel, associated sensitive riparian habitats and associated sensitive species; however, with incorporation of minimization and compensation measures, the Proposed Project would be biologically equivalent or superior to that which would occur under an avoidance alternative. Refer to items 7 a-c below.
7a	a. Effects on Conserved Habitats;	The proposed project does not fall within a MSHCP Criteria Area; therefore, it does not require plan compliance. The purpose of the Riparian/Riverine procedures described in Section 6.1.2 of the MSHCP is to ensure that the biological functions and values of Riparian/Riverine areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSHCP Conservation Area are maintained. As further defined under the MSHCP (Section 6.1.2), "those impacts that are unavoidable shall be mitigated such that the lost functions and values as they relate to Covered Species are replaced as set forth under the Determination of Biologically Equivalent or Superior Preservation."

		SAR R4 and associated sensitive riparian habitats will be impacted by improvements to Market Street Bridge Rehabilitation Project. The SAR R4 open water channel within the BSA is broad with a low gradient. The river is leveed and contains a low-flow, open water channel along the westerly levee. Therefore, the SAR R4 open water channel is considered perennial within the BSA. Vegetation within the river is dominated by disturbed riparian forest, riparian forest, disturbed riparian scrub and riparian scrub. The associated habitat contains both native and non-native vegetation including; willows, Fremont cottonwood, mule fat, caster bean and tamarisk. However, vegetation associated with the channel is disturbed and extremely fragmented. Indirect impacts to the SAR R4 open water channel and associated sensitive riparian habitats would be avoided by following the best management practices, as outlined in Volume 1, Appendix C, of the MSHCP and described in the Natural Environmental Report.
7b	b. Effects on Section 6.1.2 Riparian-Riverine Species (MSHCP Volume I, Section 6.1.2)	The NEPSSA Species, Santa Ana woollystar, and MSHCP protected species, least Bell's vireo and the coast horned lizard were detected onsite during general and focused habitat assessments and surveys. Additionally, designated Santa Ana sucker critical habitat is within the BSA. The following compensatory mitigation strategy is proposed: • 1.48 acres. To help off-set the temporal loss of riparian vegetation due to 0.74 acres of shade impacts, payment at a 2:1 ratio to the Riverside-Corona Resource Conservation District in-lieu fee program will be made. This fee will be paid following completion of the NEPA/CEQA environmental documents, rather than prior to construction. If pre-project mitigation is ultimately infeasible, coordination of alternative mitigation strategies shall be conducted with the wildlife agencies. • 16.43 acres. To help off-set the temporal loss of riparian vegetation through temporary impacts to 12.48 acres of riverine/riparian at a 1.25:1 ratio and temporary impacts to 0.83 acres currently occupied by the existing bridge at a 1:1 ratio, implementation of a 5-year Invasive Species Removal Program for 16.43 acres within the Santa Ana River will occur. The locations for the invasive species removal will include the project site and additional sites shall be coordinated with the Riverside County Flood Control District. It is anticipated that each year, there will be a focus on a different 16.43 acres within the Santa Ana River depending upon the identified needs at that time. Additionally, it is anticipated that control efforts each year will involve multiple removal/control efforts. Prior to construction, an Invasive Species Removal Plan will be prepared and will be submitted to the WRMSHCP agencies, including the Western Riverside County Regional Conservation Authority, U.S. Fish & Wildlife Service, and the California Department of Fish and Wildlife, for review and approval. BMPs will be implemented further minimizing potential impacts during construction and ensuring that impacts to water quality beyond the Project Area are minimized to the greatest extent feasible. These measures will be coordinated with the Regional Water Quality Control Board through the Section 401 Clean Water Act permitting process.
7c	c. Effects on riparian Linkages and function	The Project is located within MSHCP Core A. Core A consists of Prado Basin and the Santa Ana River. It is a southwest-to-northeast trending swath of land that is composed largely of Public/Quasi-Public Lands owned

	of the MSHCP Conservation Area	by a variety of public entities (Riverside County, the City of Riverside and the Riverside County Flood Control and Water Conservation District). The Core A functions as a Linkage, connecting Orange County to the west with San Bernardino County to the north. The Project will result in temporary impacts within Public/Quasi-Public Lands; the majority of these effects are temporary and within the Santa Ana River floodplain. Because Core A and the Public/Quasi-Public Lands within the Santa Ana River floodplain function as a linkage and provide high quality riparian habitat, Project effects will be avoided, minimized, and mitigated to the greatest extent feasible. High quality riparian habitat within the Core and along the edges must be maintained for species such as least Bell's vireo. The MSHCP requires habitat along the edges of Core areas be maintained through the implementation of the Guidelines Pertaining to the Urban/Wildlands Interface. Therefore, Core A within the Project footprint is subject to these guidelines. The guidelines describe management measures to avoid or reduce Project effects related to drainage, toxics, lighting, noise, invasive species, barriers, grading, and land development. BMPs will be implemented further minimizing potential impacts during construction and ensuring that impacts to riparian Linkages and MSCHP Conservation lands are minimized to the greatest extent feasible.

Appendix F AB 52 Native American Correspondence Log

Market Street Bridge Replacement Project

City of Jurupa Valley, City of Riverside, Riverside County, California

AB 52 Native American Consultation Log

Affiliation	Name	Contact Date	Contact Type	Response
Pechanga Band of Mission Indians	Anna Hoover, Cultural Analyst	5/9/2017	Certified Mail	An initial AB 52 letter was mailed. Letter was picked up on 5/17/17. No response was received from the Pechanga Band of Mission Indians by 6/17/17, AB 52 consultation complete.
	Tuba Ebru Ozdil, Planning Specialist	11/6/2018	County Quarterly Meeting	At the County's standing quarterly meeting with Pechanga, the Market Street Bridge Replacement Project was discussed with Tuba Ebru Ozdil on 11/6/18. Tuba Ebru Ozdil requested that language for inadvertent finds and human remains be included in Specs and MND.
Soboba Band of Lusieno Indians	Joseph Ontiveros, Director Cultural Resources Department	5/9/2017	Certified Mail	An initial AB 52 letter was mailed. Letter was picked up on 5/16/17
		6/1/2017	Email	A response letter from Joseph Ontiveros was received via email requesting initiation of formal consultation under AB 52. The tribe wishes to schedule a meeting or review the cultural documentation.
		10/15/2018	Email	The cultural documents were provided to Joseph Ontiveros for review via email.
		1/7/2019	Mail	A letter was mailed to close out AB 52 Consultation with the Soboba Band of Lusieno Indians.
Torres Martinez Desert Cahuilla Indians	Michael Mirelez, Cultural Resource Coordinator	5/9/2017	Certified Mail	An initial AB 52 letter was mailed. Letter was picked up on 5/12/17. No response was received from the Torres Martinez Desert Cahuilla Indians by 6/12/17, AB 52 consultation complete.
San Manuel Band of Mission Indians	Lee Clauss, Director Cultural Resources Management Dept.	4/4/2018	Certified Mail	An initial AB 52 letter was mailed on April 4, 2018 and received on April 10, 2018.
		5/1/2018	Email	There was an email response from Jessica Mauck on May 1, 2018 requesting a copy of the Cultural report, geotechnical report and project plans showing vertical extent of disturbance before they request consultation. If the information is not received, they will automatically elect to consult under AB52.
		10/15/2018	Email	The cultural documents were provided to Lee Clauss for review via email.
		11/23/2018	Email	A response email from Lee Clauss requesting that any and all future cultural resources-based discoveries related to the project, including those of human remains, will need to be reported to the Tribe and any documentation to that effect be disseminated to SMBMI, as well.
		1/7/2019	Mail	A letter was mailed to close out AB 52 Consultation with the San Manuel Band of Mission Indians.

Appendix G Noise Modeling Results

Table B-1. Predicted Future Noise and Sound Wall Analysis - Market Street Bridge Replacement Project

Receiver I.D.	Number of Dwelling Units	Land Use[1]	Address	Existing Exterior Noise Level $L_{eq}(h)$, dBA	Market Street Bridge Replacement Project Noise Levels - $L_{eq}(h)$, dBA																								Barrier Feasible (5 dB I.L.)	Barrier meets Caltrans Acoustical Design Goal (7 dB I.L.)
					Existing Interior Noise Level $L_{eq}(h)$, dBA	Design Year Exterior Noise Level without Project	Design Year Exterior Noise Level with Project	Design Year Interior Noise Level with Project	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project minus Existing Conditions	Design Year Noise Level with Project minus No Project Conditions	Activity Category (NAC)	Impact Type[2]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																		
														6 feet			8 feet			10 feet			12 feet			14 feet				
														$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR		
ST-1[4]	1	SFR	1948-1932 Kenton	67	-	69	70	-	2	3	1	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST-2[4]	1	SFR	1865 George Court	61	-	63	64	-	2	3	1	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST-3	0	Church	5296 24th Street	66	46	68	68	48	2	2	0	D (52)[5]	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SR-1	1	SFR	5240 24th Street	55	-	58	57	-	3	3	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SR-2	1	SFR	5242 Bell Avenue	64	-	67	66	-	3	2	-1	B (67)	AE	61	5	1	59	7	1	58	8	1	57	9	1	56	10	1	Y	Y
SR-3	1	REC	5286 Bell Avenue	61	-	64	63	-	2	2	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SR-4	1	SFR	5292 24th Street	63	-	66	65	-	3	2	-1	C (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SR-5	1	SFR	1879 George Court	64	-	67	67	-	3	3	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	61	6	1	59	8	1	57	10	1	56	11	1	Y	Y
SR-6	1	SFR	1886 George Court	66	-	69	69	-	3	3	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	63	6	1	61	8	1	59	10	1	57	12	1	Y	Y
SR-7	1	SFR	1901 Flint Court	67	-	70	70	-	3	3	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	65	5	1	62	8	1	60	10	1	58	12	1	Y	Y
SR-8	1	SFR	1906 Flint Court	67	-	70	70	-	3	3	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	64	6	1	62	8	1	60	10	1	58	12	1	Y	Y
SR-9	1	SFR	1925 Lobo	68	-	70	70	-	2	2	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	66	4	1	62	8	1	60	10	1	59	11	1	Y	Y
SR-10	1	SFR	1930 Lobo	68	-	71	71	-	3	3	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	65	6	1	62	9	1	60	11	1	58	13	1	Y	Y
SR-11	1	SFR	1943 Kenton	68	-	70	70	-	2	2	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	63	7	1	60	10	1	59	11	1	57	13	1	Y	Y
SR-12	1	SFR	1948 Kenton	67	-	70	70	-	3	3	0	B (67)	AE	N/A[6]	N/A[6]	N/A[6]	63	7	1	60	10	1	58	12	1	57	13	1	Y	Y
SR-13	1	COM	Southeast of Market Street and Via Cerro	67	-	70	70	-	3	3	0	E(72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SR-14	1	COM	Southeast of Market Street and Via Cerro	68	-	71	71	-	3	3	0	E(72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
1. SFR = single-family residence, REC = recreation area, MFR = multi-family residence, COM = Commercial
2. Impact types: A/E - Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria, S = substantial noise increase, when the project's predicted worst-hour design-year noise level exceeds the existing worst hour noise level by 12 dBA or more
3. I.L. = Insertion Loss
4. Noise receiver was at a sensitive receptor, but not at an outdoor sensitive use location. Results shown are modelled for noise model calibration purposes.
5. NAC D is for interior noise levels
6. N/A = Not Applicable

Table B-2. Predicted Future Noise and Sound Wall Analysis - Market Street Bridge Replacement Project

Receiver I.D.	Number of Dwelling Units	Land Use[1]	Address	Existing Exterior Noise Level $L_{eq}(h)$, dBA	Market Street Bridge Replacement Project Noise Levels - $L_{eq}(h)$, dBA																									Barrier Feasible (5 dB I.L.)	Barrier meets Caltrans Acoustical Design Goal (7 dB I.L.)
					Existing Interior Noise Level $L_{eq}(h)$, dBA	Design Year Exterior Noise Level without Project	Design Year Exterior Noise Level with Project	Design Year Interior Noise Level with Project	Design Year Noise Level without Project minus Existing Conditions	Design Year Noise Level with Project minus Existing Conditions	Design Year Noise Level with Project minus No Project Conditions	Activity Category (NAC)	Impact Type[2]	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																			
														6 feet			8 feet			10 feet			12 feet			14 feet				
														$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR	$L_{eq}(h)$	I.L.[3]	NBR		
SW-W2 v2 – At-grade Wall																															
SR-5	1	SFR	1879 George Court	64	-	67	67	-	3	3	0	B (67)	AE	63	4	0	61	7	1	57	10	1	56	11	1	55	12	1	Y	Y
SR-6	1	SFR	1886 George Court	66	-	69	69	-	3	3	0	B (67)	AE	65	4	0	63	6	1	61	8	1	60	9	1	60	9	1	Y	Y
SR-7	1	SFR	1901 Flint Court	67	-	70	70	-	3	3	0	B (67)	AE	66	5	1	64	6	1	61	9	1	60	10	1	60	10	1	Y	Y
SR-8	1	SFR	1906 Flint Court	67	-	70	70	-	3	3	0	B (67)	AE	66	4	0	64	6	1	61	9	1	60	10	1	60	10	1	Y	Y
SR-9	1	SFR	1925 Lobo	68	-	70	70	-	2	2	0	B (67)	AE	66	4	0	64	6	1	61	9	1	60	10	1	59	11	1	Y	Y
SR-10	1	SFR	1930 Lobo	68	-	71	71	-	3	3	0	B (67)	AE	66	5	1	64	7	1	61	10	1	60	11	1	59	12	1	Y	Y
SR-11	1	SFR	1943 Kenton	68	-	70	70	-	2	2	0	B (67)	AE	66	4	0	64	6	1	60	10	1	58	12	1	57	13	1	Y	Y
SR-12	1	SFR	1948 Kenton	67	-	70	70	-	3	3	0	B (67)	AE	65	5	1	63	7	1	59	11	1	58	12	1	57	13	1	Y	Y
SW-W2 v3 – Soundwall Offset 3 feet																															
SR-5	1	SFR	1879 George Court	64	-	67	67	-	3	3	0	B (67)	AE	67	0	0	63	4	0	60	7	1	58	9	1	56	11	1	Y	Y
SR-6	1	SFR	1886 George Court	66	-	69	69	-	3	3	0	B (67)	AE	69	0	0	65	4	0	61	8	1	60	9	1	58	11	1	Y	Y
SR-7	1	SFR	1901 Flint Court	67	-	70	70	-	3	3	0	B (67)	AE	70	1	0	67	4	0	62	8	1	61	10	1	59	11	1	Y	Y
SR-8	1	SFR	1906 Flint Court	67	-	70	70	-	3	3	0	B (67)	AE	70	0	0	67	4	0	62	8	1	61	9	1	59	11	1	Y	Y
SR-9	1	SFR	1925 Lobo	68	-	70	70	-	2	2	0	B (67)	AE	70	0	0	67	3	0	63	7	1	61	9	1	60	11	1	Y	Y
SR-10	1	SFR	1930 Lobo	68	-	71	71	-	3	3	0	B (67)	AE	71	1	0	67	4	0	63	8	1	61	10	1	59	12	1	Y	Y
SR-11	1	SFR	1943 Kenton	68	-	70	70	-	2	2	0	B (67)	AE	70	0	0	64	6	1	61	9	1	59	11	1	58	13	1	Y	Y
SR-12	1	SFR	1948 Kenton	67	-	70	70	-	3	3	0	B (67)	AE	70	0	0	64	6	1	61	9	1	59	11	1	57	13	1	Y	Y

Notes:
1. SFR = single-family residence, REC = recreation area, MFR = multi-family residence, COM = Commercial
2. Impact types: A/E - Future noise conditions approach (within 1 dBA) or exceed the Noise Abatement Criteria, S = substantial noise increase, when the project's predicted worst-hour design-year noise level exceeds the existing worst hour noise level by 12 dBA or more
3. I.L. = Insertion Loss
4. Noise receiver was at a sensitive receptor, but not at an outdoor sensitive use location. Results shown are modelled for noise model calibration purposes.
5. NAC D is for interior noise levels
6. N/A = Not Applicable

Appendix H Acronyms

AB	Assembly Bill
BMPs	Best Management Practices
BSA	Biological Study Area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CERFA	Community Environmental Response Facilitation Act (CERFA) of 1992
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CH_4	methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CRHR	California Register of Historic Resources
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
dBA	Decibel A-weighted
EIR	Environmental Impact Report
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GHG	greenhouse gases
HCP	Habitat Conservation Plan

HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
JPR	Joint Project Review
Ldn	day-night average sound level
Leq	equivalent continuous sound level
Lb	pound
Lmax	maximum sound level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
Mph	miles per hour
MRZ	Mineral Resource Zone
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
PAL	Project Area Limits
Pb	lead
PFC	Perfluorocarbons
PM	particulate matter
ppb	parts per billion
ppm	parts per million
ROG	Reactive organic compounds
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board

SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SPCCP	Spill Prevention, Control, and Countermeasure Program
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SCAB	South Coast Air Basin
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service