

DRAFT

**CEQA INITIAL STUDY/PROPOSED
MITIGATED NEGATIVE DECLARATION**

**CHASE STREET BRIDGE (NO. 20C0497) REPLACEMENT PROJECT AT
NATHANSON CREEK**

CITY OF SONOMA

SONOMA COUNTY, CALIFORNIA



LSA

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SONOMA COUNTY, CALIFORNIA

Submitted to:

City of Sonoma
Public Works Department
No. 1 The Plaza
Sonoma, CA 95476

Prepared by:

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Project No. QCE1102

LSA

October 2014

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1.0 INTRODUCTION

The City of Sonoma (City), with Federal Highway Administration funding, and in conjunction with the California Department of Transportation (Caltrans), proposes to replace the Chase Street Bridge (No. 20C0497) over Nathanson Creek. The proposed Project is located along Chase Street between Broadway (SR-12) and Austin Avenue in the City of Sonoma, California (**Figure 1**). The proposed Project area is approximately 0.37 acres in size.

The existing structure is classified as Structurally Deficient and has a sufficiency rating of 23.1 (Caltrans, 2010). The existing bridge does not have sufficient load carrying capacity for emergency vehicle access and has a posted load limit of 12.0 tons per vehicle. A safe and adequate creek crossing is needed for public safety.

The proposed Project would replace the existing, structurally deficient bridge with a modern structure that would meet current design criteria.

The Project location has a recent history of the creek overflowing the banks and flooding the adjacent residential area. FEMA mapping indicates that the bridge is within the 100-year floodplain. The type of structure selected for this Project must facilitate the flow of water within the creek as much as practically possible. Therefore, a bridge that spans from top of the natural stream bank is necessary. Additionally, the bridge needs to be as thin as possible to assure the maximum possible conveyance of stream flow. The preferred configuration is a 30-foot single-span bridge with abutments approximately 12 feet tall.

The proposed bridge type is a single-span, cast-in-place, post-tensioned concrete slab. Post-tensioned concrete slabs have the lowest depth-to-span ratio of all bridge types and are therefore desirable where the structure depth is limited.

1.1 EXISTING SITE & PROJECT HISTORY

The Project site is located approximately 0.05 mile east of Broadway (SR-12) in the City of Sonoma.

The existing structure is classified as Structurally Deficient, has a 12-ton load limit, and has a sufficiency rating of 23.1. The primary deficiencies are:

- Rubble Abutments – The abutments, constructed in 1910, consist of grouted stacked rock and provide little lateral resistance. Scour has exposed and undermined the footings of both abutments and some of the stacked rocks have become loose and are missing.
- Wood Beams – The corrugated metal deck pans with asphalt concrete wearing surface is supported with timber stringers and two steel girders. During the site inspection, significant deflection was observed when typical passenger vehicles passed over the structure. Most of the timber stringers have large cracks, checks, and distortions in addition to the mold and rot. The two steel girders are not painted and show surface rust throughout. At least half of the “J” bolts that connect the metal deck to the timber stringers are loose.

- Alignment – The bridge geometric alignment does not meet current design criteria due to substandard width. Railings – The timber bridge rails show significant rotting and would provide little lateral resistance in the event of a vehicle collision. The bridge railings, transition railings, approach railings, and end treatments are either absent or do not meet current design standards.

1.2 PURPOSE AND NEED

The purpose of this Project is to improve public safety and provide a safe and cost effective solution for traffic to cross Nathanson Creek on Chase Street between State Route 12 (Broadway) and Austin Avenue in the City of Sonoma. The existing bridge was constructed in 1910 and the timber superstructure was re-constructed about 40 years ago. Caltrans maintenance reports indicate that it is structurally deficient and has a sufficiency rating of 23.1. The bridge does not have sufficient load carrying capacity for emergency vehicle access and has a posted load limit of 12.0 tons per vehicle. A safe and adequate creek crossing is needed for public safety. An objective of the proposed Project is that the type of structure selected for this Project must facilitate the flow of water within the creek as much as practically possible.

1.3 DESIGN CONSIDERATIONS

1.3.1 Roadway Alignments

Roadway alignments would be constrained by the close proximity of the residences and driveways, the skewed alignment of Nathanson Creek, and utilities that flank both sides of Chase Street. Due to these constraints, replacement on the existing alignment is the most feasible alternative.

Horizontal alignment shifts are not desirable because the existing bridge is located within an urban area on a tangent alignment. A northerly shift would result in right-of-way impacts to the parcels located just north of the existing structure. A southerly shift would result in the same effect on the southerly parcels. The Project vicinity within the City of Sonoma is set up on a grid system and preserving this configuration is desirable.

Vertical alignments would convey hydraulic flows with freeboard (if possible) and accommodate the replacement structure depth while still conforming to the driveway grades at the easterly and westerly approaches.

Project Plans. The Project plans for the proposed Project are shown in **Figure 3 – Project Design.**

1.4 ENVIRONMENTAL REVIEW

The Chase Street Bridge Replacement over Nathanson Creek constitutes a “Project” in accordance with CEQA. Prior to approving the proposed Project, the City of Sonoma must provide environmental review in accordance with CEQA to assess the potential effects of the Project, including mitigation where necessary.

This Initial Study/Proposed Mitigated Negative Declaration (MND) has been prepared as the environmental documentation in anticipation of determining that all potentially significant impacts

from implementation of the proposed Project can be mitigated to less than significant levels. Accordingly, a Mitigated Negative Declaration is being considered to provide environmental review and clearance for the Project. Information included in this document is intended to clarify the areas of potential environmental concern, while evaluating the potential impacts of the Project on the environment.

1.5 SUMMARY INFORMATION

1. **Project Title:** Chase Street Bridge (No. 20C0497) Replacement Project at Nathanson Creek
2. **Lead Agency Name and Address:**
City of Sonoma
Public Works Department
No. 1 The Plaza
Sonoma, CA 95476
3. **Contact Person and Phone Number:**
Mr. Dan Takasugi, Public Works Director/City Engineer
(707) 938-3332
4. **Project Location:** The proposed Project site is located on Chase Street at the crossing of Nathanson Creek between Broadway (SR-12) and Austin Avenue in the City of Sonoma, California. The Project area is 0.37 acre in size. The Chase Street Bridge site is located at the coordinates Latitude 38.286433 and Longitude - 122.457604. **Figure 1 – Regional Location** shows the location of the proposed Project site on a regional scale. **Figure 2 – Project Location** shows the location of the proposed Project site on a local scale.
5. **Project Sponsor's Name and Address:** N/A
6. **General Plan Designation:** The City of Sonoma General Plan Land Use Map does not include a land use designation for Chase Street, as a City maintained road. A number of parcels adjacent to the proposed Project area are designated under the General Plan Land Use for the City of Sonoma, although these parcels would not be affected by the proposed Project. The parcels adjacent to the Project site boundary and their land use designations are provided as follows:
 - a. APNs 018-352-044, 018-412-029, and 018-352-038 are designated as Mixed Use in the City of Sonoma General Plan Land Use Map;
 - b. APN 018-412-002 is designated as Low Density Residential in the City of Sonoma General Plan Land Use Map.

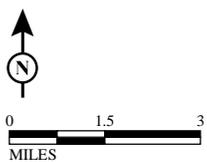


FIGURE 1

LSA

LEGEND

★ Project Location



Chase Street Bridge Replacement Project

Regional Location

SOURCE: Microsoft Bing Maps - Roads (2010)

I:\Qce1102\AI\IS-MND\Figure 1.ai (10/8/2013)

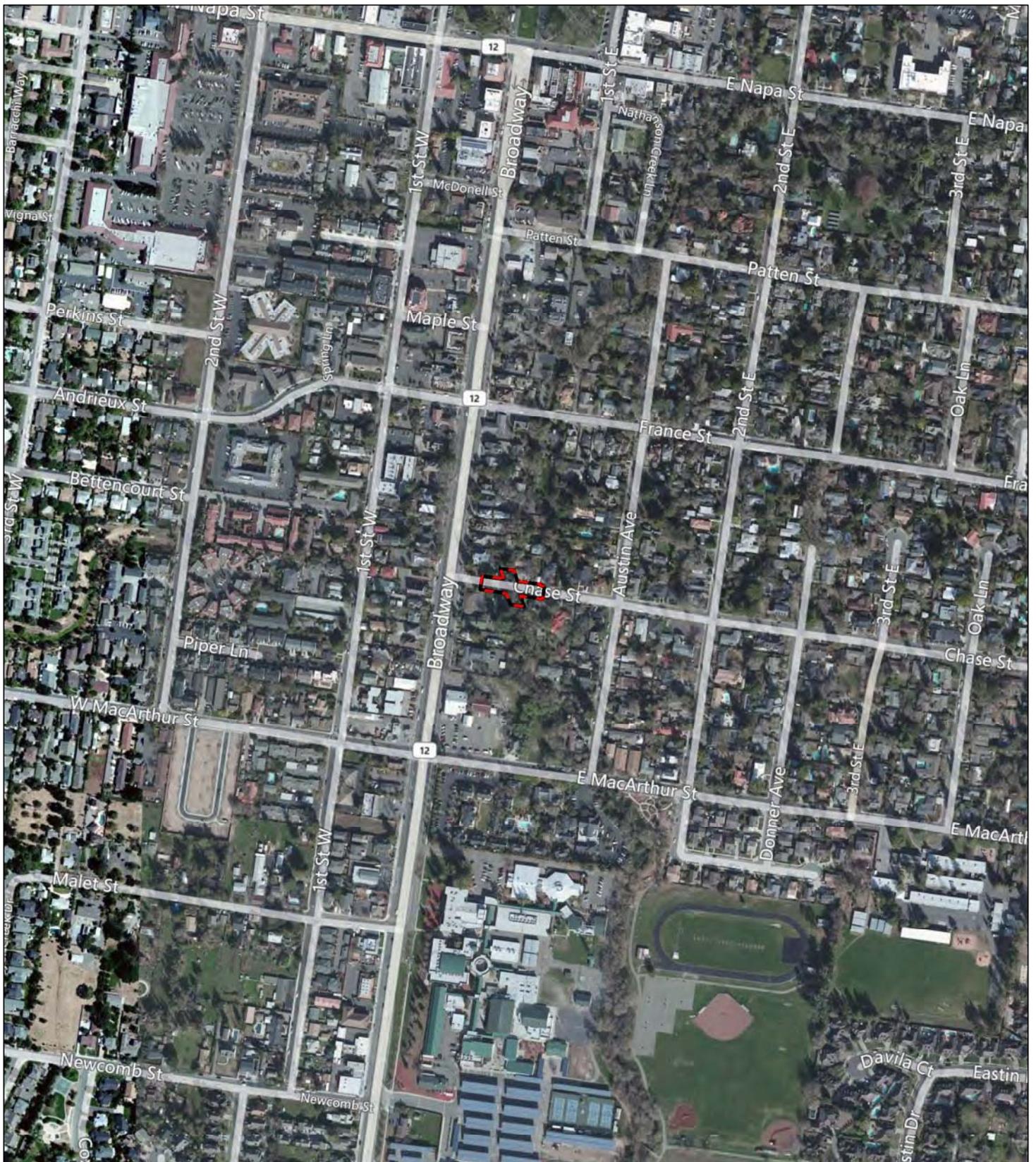


FIGURE 2

LSA

LEGEND

 Project Boundary



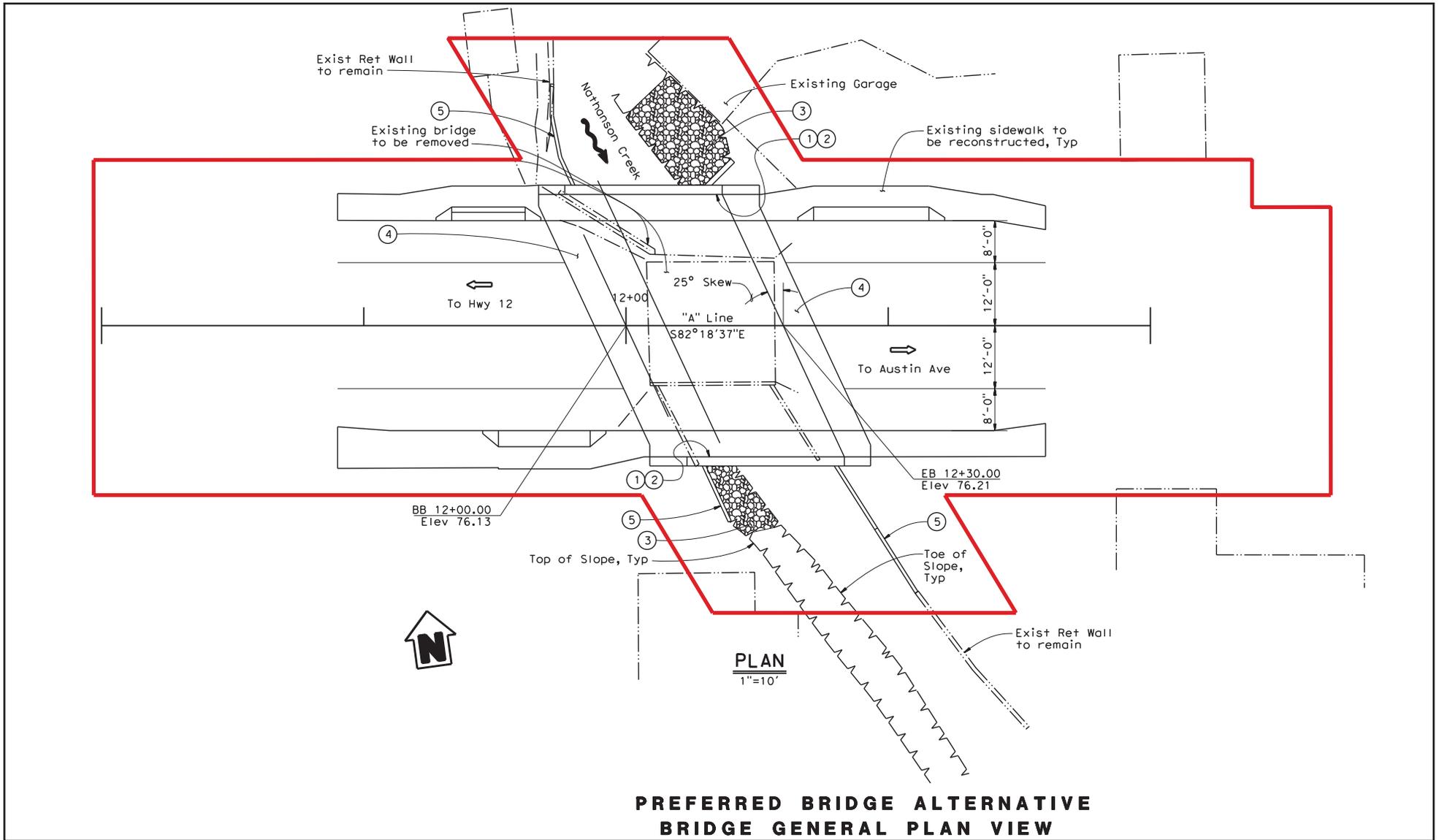
0 250 500
FEET

SOURCE: Microsoft Bing Maps - Aerial (2010)

F:\Qc1102\AI\IS-MND\Figure 2.ai (10/8/2013)

Chase Street Bridge Replacement Project

Project Location



**PREFERRED BRIDGE ALTERNATIVE
BRIDGE GENERAL PLAN VIEW**

LSA

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- Project Boundary
- 1 Paint Bridge "Br No. 20C0407"
- 2 Paint Bridge "Chase Street Bridge"
- 3 RSP see "Road Plans"
- 4 Structure Approach Slab Type EQ(10) (Mod)
- 5 Type 6A Retaining Wall (Mod)

FIGURE 3

*Chase Street Bridge Replacement Project
Project Design*

SOURCE: City of Sonoma General Plan (2014), LSA Associates, Inc. (2014).

I:\Qce1102\AI\IS-MND\Figure 3.ai (10/08/14)

7. **Zoning: Mixed Use and Low Density Residential.** The Chase Street Bridge crossing over Nathanson Creek is not identified with a Zoning designation since it is located within a public City road. The parcels adjacent to the proposed Project site are zoned for Mixed Use and Low Density Residential. Zoning designations apply for the following adjacent parcels:
- APNs 018-352-044, 018-412-029, and 018-352-038 are zoned as Mixed Use in the City of Sonoma Zoning Code. This zoning designation is intended to provide a transition between commercial and residential uses, while providing pedestrian presence in commercial areas.
 - APN 018-412-002 is zoned as Low Density Residential in the City of Sonoma Zoning Code. This zoning designation is intended to allow single-family dwellings at a density of two dwelling units per acre.
8. **Description of Project:** The City of Sonoma is proposing to replace the structurally deficient Chase Street Bridge at Nathanson Creek. The proposed Project includes the demolition of the existing bridge and construction of the replacement bridge. Funding for this Project would be provided via the Highway Bridge Program (HBP).

Proposed Project

The proposed Project would replace the existing aged and structurally deficient bridge with a modern structure that would meet current design criteria.

The proposed Project has unique challenges and issues including:

- Hydraulic Capacity, Clearance, and Scour
- Structure Alternatives & Construction Methods
- Roadway Alignments & Traffic Calming
- Road Closure with Detour
- Utilities & Relocation Requirements
- Environmental Impacts and Permit Acquisition

Structure Type Selection - Alternative Structure Types

The Project location has a recent history of the creek overflowing the banks and flooding the adjacent residential area. FEMA mapping indicates that the bridge is located within the 100-year floodplain. The type of structure selected for this Project must facilitate the flow of water within the creek as much as practically possible. The proposed bridge type is a single-span, cast-in-place, post-tensioned concrete slab. Post-tensioned concrete slabs have the lowest depth-to-span ratio of all bridge types and are therefore desirable where the structure depth is limited. The proposed bridge would span from top of the natural stream banks. Additionally, the bridge would be designed to be thin to assure the maximum possible conveyance of stream flow. The proposed bridge would be a 30-foot single-span bridge with tall abutments, approximately 12 feet tall. The proposed bridge type has a thin superstructure that would be relatively easy and cost effective to construct, and would minimize the need for utility relocation.

Retaining Walls

Three retaining walls and one wing wall would be required in order to transition from the new bridge abutments to the existing stream bank. The existing stream banks contain stacked rubble

walls, wood walls, reinforced concrete retaining walls, and vegetated soil slopes. The proposed retaining walls would pass stream flow, prevent scour, and protect the banks.

Retaining walls (10 and 30 feet long and 8 to 10 feet high) would be constructed with reinforced concrete Caltrans Type 6A on spread footings. A backhoe would be used for excavation for retaining wall construction. Backhoe/excavator access for wall and abutment footing excavation would be from a combination of in-creek and existing roadway locations. Access into the stream area would be from the existing roadway through the area previously occupied by the existing bridge abutments and would occur following the existing bridge removal.

Reinforcement and concrete would generally occur as follows: the old bridge, abutments and existing walls would be removed. Shoring would be placed where needed. The new wall footings would be excavated, and footing reinforcement/concrete placed. The abutment footings would be excavated and footing reinforcement/concrete placed. The wall and abutment stem reinforcement/concrete would be placed. The forms would be removed and backfill would be placed..

Bridge Foundation

The existing bridge is supported by a spread footing on firm sandstone. The existing foundation would be removed via a backhoe/excavator as part of the proposed project. The existing in-channel bridge abutments and approach fill would also be removed. The proposed foundation type (concrete spread footings) would minimize impacts to the adjacent structures (residences and associated buildings) and properties. The proposed foundation type would be a conventional spread footing with excavation and temporary construction shoring. Excavation for the concrete footings, which would be located under the bridge abutments and retaining walls, would be approximately 4 or 5 feet below the streambed and would be approximately 8 feet wide and 60 feet long. Roadway alignments would conform to the City of Sonoma local standards, American Association of State Highway and Transportation Officials' (AASHTO's) "A Policy on Geometric Design of Highways and Streets", 2004 (Green Book), and *California Highway Design Manual*.

Construction Sequencing

- All construction activities would occur during daytime hours, and no night work would occur. The basic sequence of construction activities would be: 1) creek flow would be diverted through the construction site via a pipe; 2) vegetation would be removed; 3) the existing bridge and abutments would be removed; 4) the new bridge abutments and retaining walls would be constructed; 5) the new superstructure would be constructed; and 6) the approach roadway and railing would be constructed.
- The in-stream construction season would not begin before July 1st. Access into the creek would occur from the existing roadway after the removal of the existing bridge and existing bridge abutments. A small amount of water may occur within the channel. If so, the contractor would pipe the water through the site. Water would be diverted into/out of each end of the pipe. The contractor would need to work around the pipe. The contractor would propose a diversion system for approval by the Resident Engineer.
- All construction activities would occur within the bridge approach roadway and wall areas.

Traffic Calming

Traffic calming is a common method of slowing vehicles and providing a safer facility for residents, pedestrians, and bicyclists. Traffic calming consists of adding features that slow motor vehicles to increase safety.

A speed table would be installed on the new bridge as a traffic calming option. The speed table would be an elongated speed bump with a flat top to slow traffic. Advanced striping would alert the driver to the change in grade, which would result in slower speeds. The speed table would result in a balanced earthwork configuration with little to no earthwork moved permanently on or off site.

Road Closure with Detour

Since the existing alignment would be the only feasible alternative, either the existing road must be closed during construction or the replacement bridge construction must be staged in order to maintain traffic flow. Since the City streets are in a grid pattern and the required detour would only be 0.5 mile, a complete closure of Chase Street at this location would be implemented during construction. Chase Street would be closed at the bridge and all traffic detoured around the site. Bridge and road construction would occur between June and October. The bridge would be closed during the entire construction period.

Right-of-Way

Right-of-way including slope easements, temporary construction easements, permanent maintenance easements, and permanent acquisitions would be required to construct the Project. The proximity of the proposed bridge to existing buildings would be carefully coordinated with each of the affected landowners. **Table A: Right-of-Way Requirements for the Chase Street Bridge Replacement Project** summarizes the preliminary right-of-way required for the Project:

Table A: Right-of-Way Requirements for the Chase Street Bridge Replacement Project

Parcel	Area and Type
018-412-029-000	170 sq. ft. (0.004 acre) Slope Easement 150 sq. ft. (0.003 acre) Temporary Construction Easement 5 sq. ft. (0.0001 acre) Permanent Acquisition
018-352-038-000	210 sq. ft. (0.005 acre) Slope Easement 95 sq. ft. (0.002 acre) Temporary Construction Easement 105q. ft. (0.002 acre) Permanent Acquisition
018-352-044-000	525 sq. ft. (0.012 acre) Slope Easement 25 sq. ft. (0.0006 acre) Temporary Construction Easement 15 sq. ft. (0.0003 acre) Permanent Acquisition
018-412-002-000	580 sq. ft. (0.013 acre) Slope Easement 150 sq. ft. (0.003 acre) Temporary Construction Easement 195 sq. ft. (0.004 acre) Permanent Acquisition

Utilities

Various utilities would be protected in place or relocated. The underground sewer line that is located along the Chase Street centerline would be replaced. A water line currently located in the north lane of Chase Street would be attached to the proposed bridge. The existing 8-inch diameter domestic waterline in Chase Street would require relocation to facilitate construction of the new bridge structure. This is due to a conflict between the planned depth of bridge footings and the depth of the existing waterline. Relocation would involve removal and replacement of a portion of the existing waterline and abandonment of another portion. Approximately 68 linear feet (LF) of existing waterline would be abandoned; 38 LF of existing waterline would be replaced.

The new waterline would be 8-inch diameter. Construction would consist of open cut trenching in the paved roadway to the west and east of the new bridge structure. The new waterline would be attached to the north side of the new bridge structure for the creek crossing. Construction limits would coincide with the limits for overall project construction. Water service would be maintained to adjacent residences during construction activities. Appurtenances for the new waterline would include isolation valves located on both sides of the new bridge and a new air release valve located at the waterline high point (attached to the bridge).

The existing 6-inch diameter Sonoma County Water Agency (SCWA) sanitary sewer gravity pipeline in Chase Street needs would require relocation to facilitate construction of the new bridge structure. This is due to a conflict between the planned depth of bridge footings and the depth of the existing sewer pipeline. The existing sewer main is visible beneath the existing bridge and would be relocated beneath the bridge footing during bridge construction. Relocation would involve removal and replacement of a portion of the existing sewer pipeline. Approximately 135 LF of existing sewer pipeline would be replaced.

The new gravity sewer pipeline would be 6-inch diameter with a 16-inch diameter casing. Construction would consist of open cut trenching in the paved roadway and across the creek. Construction limits would coincide with the limits for overall project construction. Sewer service would be maintained to adjacent residences during construction activities. Appurtenances for the new sewer pipeline would include a new sanitary sewer manhole located west of the new bridge structure where the new sewer pipeline would tie-in with the existing sewer pipeline. Sewer service would be switched to the new line so that the old line can be removed prior to construction of the new bridge footings and abutments. All utility work would occur within the curb limits of the widened Chase Street.

Various utilities are affixed to the existing bridge and would be relocated. Additionally, joint poles with overhead electric, telephone, and cable television located along the north side of Chase Street would be relocated to the north. The existing Pacific Gas & Electric (PG&E) underground natural gas line located south of the existing bridge would be relocated under the proposed bridge footing and would be directionally drilled.

One joint utility pole with overhead electric and telecommunications (phone and cable television) would be protected in place. The existing 2-inch PG&E underground natural gas line would be relocated under the footing of the new bridge. PG&E would install the new natural gas line prior to bridge construction using directional drilling that would be entirely staged within the Chase Street roadway limits.

Table B summarizes the utilities located within the Project area and the proposed action in support of the Project:

Table B: Utility Types within the Proposed Project Area

Utility	Service Provider	Facility Types	Action
Cable TV	Comcast Communications	Overhead Cable TV	Relocation
Electric	PG&E	Overhead and/or underground electrical lines	Relocation
Natural Gas	PG&E	Underground natural gas pipelines	Relocation
Telephone	AT&T	Overhead and/or underground telephone lines	Relocation
Sewer	Sonoma County Water Agency	Underground Sewer pipelines	Relocation/ Replacement
Water	City of Sonoma	Underground Water pipelines	Relocation/ Replacement

Source: Quincy Engineering 2013

Construction Staging

Staging areas for the contractor would be located on Chase Street within the proposed Project area. Staging and storage space is limited. The contractor would be required to bring the equipment and materials when they need it and find their own staging and storage area. Construction staging would be situated so as not to obstruct access to residential driveways.

In-channel construction activities associated with the bridge replacement and retaining walls at Nathanson Creek and the placement of rock slope protection (RSP) along the banks would occur in the following sequence:

- Install culverts (if necessary) within Nathanson Creek from approximately 20 feet upstream of the existing bridge to 20 feet downstream of the existing bridge. Use a temporary diversion consisting of clean gravel and plastic sheeting to direct flows into the culvert(s). If necessary, the contractor would pipe the water through the site. Water would be diverted into/out of each end of the pipe.
- Remove existing bridge, bridge footings, and foundation.
- Construct spread footings, retaining walls, and abutments.
- Install new RSP on both banks of Nathanson Creek from existing ground slope. A small excavator with a bucket/thumb attachment would pick and place/fit together the RSP. As the RSP is placed, the excavator would progress with the installation.
- Construct falsework (a temporary structural system to support the concrete, reinforcement and forms until the concrete slab post tensioning operation is complete and the bridge has adequacy to support itself and vehicular loading) for new bridge upon gravel pad.
- Construct bridge deck. Bridge deck construction include placement of forms on the falsework, placement of reinforcement and post tensioning ducts and anchorage assemblies, and placement of concrete.
- Remove falsework for new bridge.
- Remove the gravel pad and diversion pipes.

Construction Schedule

Construction of the proposed Project would occur between June and October. Construction is anticipated to begin in June 2015.

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

- City of Sonoma CEQA Approval
- City's Tree Committee (Approval of Tree Removal)
- City of Sonoma Tree Removal Permit
- United States Army Corps of Engineers (Corps) Section 404 Permit
- Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification
- California Department of Fish and Wildlife (CDFW) Section 1602 Streambed Alteration Agreement
- National Marine Fisheries Service (NMFS) Consultation
- State Historic Preservation Officer (SHPO) Consultation
- Air Quality Management District (AQMD) Construction Permit

10. Environmental Factors Potentially Affected:

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

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

11. **Determination.** (To be completed by the Lead Agency.)

On the basis of this initial evaluation:

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

Signature

Date

Signature

Date

2.0 ENVIRONMENTAL EVALUATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The Chase Street Bridge at Nathanson Creek is located within a mature residential area of Sonoma. The adjoining area is comprised of residential housing and associated paved streets and driveways. The surrounding neighborhood is landscaped with a mixture of large mature native and non-native tree species, lawns, and ornamental shrubs.

Discussion

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

No Impact. The City of Sonoma Municipal Code defines scenic vistas as “a public view benefitting the community at large, of significant features, including hillside terrain, ridgelines, canyons, geologic features, and community amenities (e.g., parks, landmarks, permanent open space)” (Chapter 19.40.130 Protection of Scenic Vistas). The proposed Project is not located within a scenic vista, nor is the Project area visible from a designated scenic vista. **No impact** would occur.

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

No Impact. The proposed Project is not located on a state or local scenic highway. Broadway (SR-12) is classified as an “Eligible State Scenic Highway – Not Officially Designated” and is located 0.05 mile west of the Project area. The proposed Project would not impact scenic resources on Broadway (SR-12) and would not alter SR-12’s eligibility as a State Scenic Highway. **No impact** would occur.

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

Less Than Significant. The proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed Project would replace the existing Chase Street Bridge at the Nathanson Creek crossing. Although equipment, crews, and vehicles would be present during construction, this activity would be temporary and would not permanently degrade the existing visual character. The proposed bridge would not degrade the existing visual character of the Project area.

Nine non-native deciduous trees would require removal but would be replaced within or near the Project area. The trees proposed for removal are located within the dense, overgrown riparian corridor adjacent to the existing bridge. Nine new trees would be planted within the Project area (if possible) or within the general vicinity of the proposed Project to replace the removed trees, consistent with the City Tree Protection Ordinance. Because of the dense tree canopy within the Project area, and because the trees would be replaced within or near the Project area and would contribute to the existing tree canopy, this impact is considered **less than significant**.

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

No Impact. The proposed Project site is located in a residential area within the City of Sonoma. Existing sources of light and glare include vehicles traveling on Chase Street and light sources from residential uses surrounding the Project site. The proposed Project would not include the installation of new light standards along Chase Street or the new bridge. Replacement of the bridge would not generate any additional traffic, which could increase light or glare in the area, nor would the proposed Project involve realignment of the roadway, which could direct light spill from vehicles into adjacent residences. Therefore, the proposed Project would not create a new source of substantial light or glare, which would adversely impact day or nighttime views in the area. **No impact** would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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II. AGRICULTURAL 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources based on soil information documented by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). Agricultural land is rated by the NRCS according to soil quality and

irrigation status. The best land suited for agricultural production is designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance and collectively these soils are known as Important Farmland. The FMMP maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. FMMP's statistical and mapping information is contiguous with modern soil surveys developed by the U.S. Department of Agriculture. The FMMP designates land into the following categories: Prime Farmland; Farmland of Statewide Importance, Unique Farmland; Farmland of Local Importance; Grazing Land; Urban and Built-Up Land; Other Land; and, Water.

Maps developed by the FMMP were reviewed to determine if the Project site is located within an area designated as Important Farmland. The Project area is located on land designated as Urban and Built-up Lands on the California Department of Conservation State Lands 2010 Sonoma County Important Farmland map (California Department of Conservation 2010).

The California Land Conservation Act, better known as the Williamson Act, has been California's premier agricultural land protection program since its enactment in 1965. The Williamson Act preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts.

Discussion

- 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 a non-agricultural use?*

No Impact. The proposed Project would be located on land designated as Urban and Built-up Lands on the California Department of Conservation State Lands 2010 Sonoma County Important Farmland map. No Prime, Unique or Important Farmland would be affected. **No impact** would occur.

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

No Impact. As discussed in Section II (a), the proposed Project would be located on land designated as Urban and Built-up Land, and the Project area is not zoned agriculture. According to the California Department of Conservation's Sonoma County Williamson Act Lands 2013 map, the proposed Project would not be located on lands under Williamson Act contract. Therefore, **no impact** would occur.

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

No Impact. The Project site is not zoned for, or adjacent to, forest land or timberland. **No impact** would occur.

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

No Impact. The Project site is not located on forest land, and therefore would not result in the loss of forest land or the conversion of forest lands to non-forest uses. **No impact** would occur.

- e) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

No Impact. No agricultural lands are located within the Project area or on the surrounding lands. The proposed Project would not change the existing environment and would not convert farmland to non-agricultural uses. *No impact* would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

Air quality is a function of both local climate and local sources of air pollution. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the ability of the atmosphere to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

Regional topographic features have a direct correlation with air pollution flow and therefore are used to determine the boundary of air basins. The proposed Project is located in the San Francisco Bay Area Air Basin (SFBAAB), which is comprised of nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties.

The Bay Area 2010 Clean Air Plan is the applicable air quality plan for the proposed Project area. The Bay Area 2010 Clean Air Plan was adopted on September 15, 2010 and is an update to the 2005 Bay Area Ozone Attainment Strategy. Numerous strategies are set forth in the Bay Area 2010 Clean Air Plan to reduce four categories of air pollutants: ground level ozone and its key precursors, ROG and NO_x; particulate matter; air toxics; and greenhouse gases.

A project is deemed inconsistent with the Bay Area 2010 Clean Air Plan if it results in population or development growth that exceeds the estimates accounted for in the plan, thereby generating additional emissions.

Air quality monitoring stations are located throughout the nation and are maintained by the local air districts and state air quality regulating agencies. Data collected at permanent monitoring stations are used by the EPA to identify regions as “attainment” or “nonattainment” depending on whether the region meets the requirements stated in the previous National Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment, such as marginal, moderate, serious, severe, and extreme, are used to classify each air basin in the state on a pollutant by pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS. The San Francisco Bay Area Air Basin’s attainment status for each of the criteria pollutants for southern Sonoma County is listed in **Table C: SFBAAB Air Quality Attainment Status for Southern Sonoma County (2013)**.

Table C: SFBAAB Air Quality Attainment Status for Southern Sonoma County (2013)

Pollutant	State	Federal
Ozone (1 hour)	Nonattainment	No Federal Regulation
Ozone (8 hour)	No State Regulation	Marginal/Nonattainment
PM ₁₀	Nonattainment	Unclassified
PM _{2.5}	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	No Federal Regulation
Hydrogen Sulfide	Unclassified	No Federal Regulation

Source: California Air Resources Board, 2013. Area Designations. <http://www.arb.ca.gov/desig/desig.htm>. Accessed June 6, 2014.

BAAQMD Thresholds

The BAAQMD’s thresholds of significance for construction- and operation-related emissions are presented below.

In June 2010, BAAQMD adopted updated draft California Environmental Quality Act (CEQA) Air Quality Guidelines and finalized them in May 2011.¹ These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

The BAAQMD CEQA thresholds were recently invalidated by a trial court because BAAQMD did not conduct a CEQA evaluation of the thresholds before their adoption. The Court, however, did not rule on or question the adequacy of the BAAQMD CEQA Air Quality Guidelines, including the

¹ BAAQMD, 2011. *CEQA Quality Guidelines*. May.

impact assessment methodologies, or the evidentiary basis supporting the thresholds, which are included in the Guidelines (updated in May 2011). The City, as Lead Agency, has the discretion to use the BAAQMD CEQA Air Quality Guidelines and methodology for analyzing air quality impacts under CEQA based on the evidence and technical studies supporting the Guidelines. The following air quality analysis utilizes the impact assessment methodologies presented in the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2011).

Project Construction

The BAAQMD has established construction significance criteria of an average of 54 pounds per day of ROG and NO_x and 82 pounds per day of PM₁₀ and PM_{2.5} exhaust emissions for the construction period.

Discussion

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

No Impact. Per the BAAQMD Air Quality CEQA Guidelines, the BAAQMD considers a project consistent with the Clean Air Plan if it: 1) can be concluded that a project supports the primary goals of the Plan (by showing that the project would not result in significant and unavoidable air quality impacts); 2) includes applicable control measures from the Plan, and; 3) does not disrupt or hinder implementation of any Plan control measure.

The primary goals of the 2010 Clean Air Plan are to protect air quality, public health, and the climate. Because the Project would not result in a significant air quality impact (refer to the analysis below), the Project would not conflict with the primary goals of the Plan. The Plan includes 55 Control Measures in five categories: stationary and area source; mobile source; transportation control; land use and local impact; and energy and climate. The Project does not include a new stationary source or new permanent mobile sources, does not introduce a new land use, and would not use a substantial amount of energy during operation. In addition, the magnitude and nature of this Project are too small to affect air quality or hinder implementation of control measures. The Project would not conflict with or obstruct the air quality plan; therefore, *no impact* would occur.

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

Construction Period Impacts

Less Than Significant with Mitigation Incorporation. Air pollutant emissions associated with construction of the proposed Project would occur over the short-term. Construction vehicle traffic, the use of construction equipment, and wind blowing over exposed earth would emit exhaust and dust that affect local and regional air quality. Construction emissions were estimated for the proposed Project using the Sacramento Air Quality Management District's Road Construction Emissions Model, Version 7.1.5.1 as recommended in the BAAQMD *CEQA Air Quality Guidelines*. As shown in **Table D: Estimated Construction Emissions (Total Project Area)**, none of the criteria pollutants are anticipated to exceed the daily emissions thresholds and project-related construction emissions would therefore be less than significant.

Table D: Estimated Construction Emissions (Total Project Area)

Project Phases	ROG (lbs/day)	NO _x (lbs/day)	Total PM ₁₀ (lbs/day)	Total PM _{2.5} (lbs/day)	Exhaust PM ₁₀ (lbs/day)	Exhaust Dust PM _{2.5} (lbs/day)
Grubbing/Land Clearing	1.7	16.5	2.8	1.1	0.8	0.7
Grading/Excavation	4.2	44.1	4.2	2.4	2.2	2.0
Drainage/Utilities/Sub-Grade	4.1	31.6	4.2	2.4	2.2	2.0
Paving	2.1	17.5	1.1	1.0	1.1	1.0
Maximum (pounds/day)	4.2	44.1	4.2	2.4	2.2	2.0
BAAQMD Thresholds	54	54	NA	NA	82	82
Significant	No	No	-	-	No	No

Notes: NA = Not Applicable. The BAAQMD does not have a significance criterion for pollutant category.
 Model inputs include: Project Start Year: 2015; Project Length (months): 5; Total Project Area (acres): 0.37; Total Soil Imported/Exported (yd³/day): 100. Miles per round trip for soil hauling activities: 30 miles;
 Number of round trips per day: 10.
 PM₁₀ estimates assume 50% control of fugitive dust from watering and associated dust control measures.
 Total PM₁₀ emissions are the sum of exhaust and fugitive dust emissions.
 Emissions estimated using Sacramento Metropolitan Air Quality Management District’s Road Construction Emissions Model, Version 7.1.5.1
 Source: LSA, 2014

As indicated in **Table D**, construction of the proposed Project would not exceed the established thresholds for criteria pollutants; however, the BAAQMD recommends the implementation of *Basic Construction Mitigation Measures* to reduce fugitive dust emissions to a less than significant level.

Mitigation Measure AIR-1. The following measures from BAAQMD are applicable to all construction activities for the proposed Project:

- All exposed surfaces shall be watered two times per day.
- All haul trucks transporting soil, sand or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Idling times shall be minimized either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations).
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. The person shall respond and take corrective action within 48 hours. The phone number for the Air District’s contact shall also be visible to ensure compliance with applicable regulations.

Implementation of **Mitigation Measure AIR-1** would require the implementation the BAAQMD's *Basic Construction Mitigation Measures*, thereby reducing construction-related emissions to a less than significant level by limiting idle times and keeping dust to a minimum.

Operation Period Impacts – Regional Emissions

The proposed Project would replace an existing bridge to provide for a safe and adequate creek crossing. Once operational, the proposed Project would not increase traffic on the roadway and would not be a source of other air emissions. Therefore, the proposed Project would not violate any air quality standard or contribute to an existing or projected air quality violation. *No impact* would result from operation of the proposed bridge.

Localized CO Impacts

The BAAQMD has established a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emission concentrations. According to the BAAQMD *CEQA Air Quality Guidelines*, the proposed Project would result in a less than significant impact to localized CO concentrations if the following screening criteria are met:

- The project would be consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The proposed Project would not conflict with an applicable congestion management program for designated roads or highways, the regional transportation plan, or other agency plans. Additionally, traffic volumes on roadways in the Project vicinity are less than 5,000 vehicles per hour, and the proposed Project is not expected to generate peak hour trips once operational. Therefore, the proposed Project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour and would not result in localized CO concentrations that would exceed State or federal standards.

- c) *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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?*

Less Than Significant with Mitigation Incorporated. See Section III(b) above. The proposed Project would generate short-term air quality impacts as a result of construction activities; however, the construction-related air quality impacts would be short-term and temporary. The proposed Project would not result in long-term or cumulatively considerable increases in air quality pollutant emissions for which Sonoma County is currently in non-attainment (ozone precursors and PM₁₀), because the proposed Project does not involve new uses or an expansion of an existing use along Chase Street. The methodology and impact significance criteria for review of Project-specific impacts associated

with construction emissions considers the existing air quality of the Project area and, as such, determines impact significance based on cumulative air quality considerations. When considered with other current, future, and reasonably foreseeable projects within the City, the air pollutant emissions increase associated with construction activities would be less than significant and with implementation of **Mitigation Measure AIR-1** the proposed Project would result in *less than significant* contributions to cumulative pollutant increases in the region.

d) *Expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant. Sensitive receptors are facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as young children, the elderly, and people with illnesses. The proposed Project is located in a residential area within the City of Sonoma with single-family residential units surrounding the proposed Project area. Construction activities occurring on the Project site may expose adjacent residents to airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment) on a short-term basis. As identified in Table D, the Project's air pollutant emissions do not exceed BAAQMD significance thresholds. Implementation of **Mitigation Measure AIR-1** (Basic Construction Mitigation Measures) would reduce construction-related emissions to a less than significant level, thus minimizing potential exposure of these sensitive receptors to substantial pollutant concentrations.

As discussed in Section III(b), the proposed Project would not result in increased pollutant emissions during operation since its implementation would not increase traffic along Chase Street. Therefore, the nearby sensitive receptors would not be exposed to substantial pollutant emissions during Project operation. Impacts would be *less than significant*.

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

Less Than Significant. Some objectionable odors may be generated from the operation of diesel-powered construction equipment and/or vehicles during the Project construction period. However, these odors would be short-term in nature and would not result in permanent impacts to the nearby sensitive receptors. Temporary odor emissions resulting from construction emission exhaust and construction activities would be reduced to a less than significant level with the implementation of **Mitigation Measure AIR-1** (Basic Construction Mitigation Measures). Long-term operation of the proposed Project would not generate any new vehicle trips; therefore, increases in permanent odors would not result from Project operation. Impacts would be *less than significant*.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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IV. BIOLOGICAL RESOURCES

Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

LSA Associates, Inc. prepared a Natural Environment Study (NES) and a Biological Assessment (BA) for the proposed Project (see Appendix A). The following summarizes the setting and methods used to determine the biological impacts associated with implementation of the proposed Project. Results from the analysis in the NES and BA were used to evaluate the impacts and develop mitigation measures.

The Biological Study Area (BSA) includes all areas directly affected by construction (i.e., streambed and bank) as well as adjacent upland areas that may be accessed by equipment and/or personnel during construction. Because the proposed Project is located within a mature residential neighborhood with little natural upland habitat, the BSA is restricted to a relatively narrow (approximately 75 feet wide) strip along Nathanson Creek and extends about 50 feet upstream and downstream of the bridge.

The topography within the BSA is essentially flat with an elevation of approximately 70 feet above mean sea level. Within the BSA, Nathanson Creek is confined to a narrow incised channel approximately 5 to 6 feet deep. The stream flows over a bed of Quaternary alluvium consisting of strongly cemented old valley alluvium and deposits of various sized cobbles. Residential development encroaches to the edge of the incised channel. During the field surveys on November 11, 2011, water was present in the streambed and the scoured pool under the bridge was approximately 30 inches deep. Physical conditions in the BSA were essentially the same during the February 27, 2013 survey.

The mature residential neighborhood is composed of housing and associated paved streets and driveways. The surrounding neighborhood is landscaped with a mixture of large mature native and non-native tree species, lawns, and ornamental shrubs.

Vegetation

Vegetation within the BSA is composed of a mixture of native and non-native plant species. Native trees along the creek include valley oak (*Quercus lobata*), box elder (*Acer negundo*), and arroyo willow (*Salix lasiolepis*); these species are likely remnants of the natural historical vegetation along the creek. In addition, non-native species are present including black locust (*Robinia pseudoacacia*), China berry (*Melia azedarach*), and glossy privet (*Ligustrum lucidum*). Some of the black locust are completely covered in dense growths of English ivy (*Hedera helix*), an invasive non-native plant. Other native and non-native tree species in upland portions of the BSA are Douglas fir (*Pseudotsuga menziesii*) and Peruvian pepper (*Schinus molle*), respectively.

The understory vegetation is dominated by non-native species including Himalayan blackberry (*Rubus armeniacus*), English ivy, and greater periwinkle (*Vinca major*). Native plants in the creek bed include common horsetail (*Equisetum arvense*), water cress (*Nasturtium officinale*), mugwort (*Artemisia douglasiana*), tall cyperus (*Cyperus eragrostis*), and common reed (*Phragmites australis*). Due to the urban setting and mixture of native and non-native plants, the vegetation within the upland portion of the BSA was not identified as a specific alliance or semi-natural stand of vegetation currently recognized in California (Sawyer et al. 2009).

Wildlife

During the field surveys on November 11, 2011, wildlife observed within the BSA included common, widely distributed species typical of landscaped residential areas. All wildlife species observed within the BSA are included in the following discussion. The most evident wildlife observed in the BSA and vicinity, were birds. Species seen or heard calling include Anna's hummingbird (*Calypte anna*), northern flicker (*Colaptes auratus*), American crow (*Corvus brachyrhynchos*), western scrub-jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), ruby-crowned kinglet (*Regulus calendula*), hermit thrush (*Catharus guttatus*), and cedar waxwing (*Bombycilla cedrorum*). All of the observed species were common to established residential areas in Sonoma County; the ruby-crowned

kinglet, hermit thrush, and cedar waxwing occur as winter visitors. All other bird species observed were year-round residents. An old nest of a black phoebe (*Sayornis nigricans*) was attached to one of the support timbers under the bridge. There was no evidence of use of the bridge as a bat roost (i.e., droppings or urine staining).

Aquatic wildlife observed in the BSA and/or vicinity included a dead American bullfrog metamorph (*Lithobates catesbeiana*) and small numbers of threespine sticklebacks (*Gasterosteus aculeatus*) in deeper pools. The American bullfrog is a non-native invasive amphibian that occurs in a wide variety of aquatic habitats in California. Threespine sticklebacks are one of the most widely occurring native fishes in streams draining to the San Francisco Estuary (Leidy 2007).

The streambed likely provides a movement corridor for mid-sized local mammals that inhabit urban environments such as northern raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*). Nathanson Creek is a known steelhead (*Oncorhynchus mykiss irideus*) spawning stream (Leidy et al. 2005); however, suitable spawning habitat does not appear to be present within the BSA due to low stream flows and cemented alluvium substrate in much of the streambed. Nonetheless, fish moving upstream to suitable spawning areas and smolts moving downstream to the San Francisco Estuary pass through the BSA. The most likely seasonal movement of adult spawning fish is in early to mid-winter, several days after major storm events when stream flows are strong. Smolts would most likely be moving downstream during seasonal high flows in the spring.

Special-Status Species

A list of sensitive wildlife and plant species potentially occurring within the BSA was compiled to evaluate potential impacts resulting from Project construction. Sources used to compile the list include the California Natural Diversity Data Base (CNDDDB), the U.S. Fish and Wildlife Service (USFWS) online special-status species list, and the California Native Plant Society (CNPS) Online Edition. The species list obtained from the CNDDDB, CNPS, and USFWS were reviewed to determine which species could potentially occur in the Project area.

Special-Status Wildlife Species

Special-status wildlife species that may occur in the BSA include steelhead (central California coast Distinct Population Segment [DPS]) (*Oncorhynchus mykiss irideus*), Chinook salmon (Sacramento River winter-run Evolutionary Significant Unit [ESU]) (*Oncorhynchus tshawytscha*), Chinook salmon (Central Valley spring-run) (*Oncorhynchus tshawytscha*), and Chinook salmon (Central Valley-fall/late fall-run ESU) (*Oncorhynchus tshawytscha*).

Steelhead

The Central California Coast Steelhead DPS is known to occur in the Sonoma Creek watershed including Nathanson Creek (Leidy 2007; Leidy et al. 2005). However, detailed information on the status of this DPS in small streams tributary to the Estuary including Nathanson Creek are extremely limited (NMFS 2011). This DPS is federally-listed as a threatened species.

Steelhead require cold-water streams with adequate dissolved oxygen. Spawning habitat consists of gravel substrates free of excessive silt. The central California coast steelhead DPS inhabits coastal streams from the Russian River in Sonoma County south to Soquel Creek in Santa Cruz County, and tributaries of San Francisco and San Pablo Bays (NMFS 2011).

Adult steelhead migrate from the ocean into freshwater streams to spawn between December and April, and juveniles migrate downstream to the San Francisco Estuary and ocean in late winter and spring. Female steelhead dig a nest (or redd) in a stream area with suitable gravel composition, water depth, and velocity. Male fish compete for the right to spawn with females. Females may deposit eggs in four to five nests within a single redd. Steelhead eggs hatch in three to four weeks. Juvenile steelhead typically spend one to two years rearing in freshwater before migrating to estuarine areas as smolts and then into the ocean to feed and mature. Steelhead can then remain at sea for up to four years before returning to fresh water to spawn (Moyle 2002).

Chinook Salmon

Four ESUs of Chinook salmon move through the San Francisco Estuary to their spawning grounds in the upper Sacramento/San Joaquin River system (Moyle 2002). Small numbers of Chinook salmon also spawn in the smaller tributaries draining directly to the Estuary such as the Napa River, but the origin of the fish spawning in these areas has been unclear (Leidy 2007). The timing of spawning runs and recent genetic studies suggest that the salmon spawning in the smaller streams draining to the San Francisco Estuary are related to the fall/late-fall ESU of Chinook salmon (NMFS 2011). Fish in this ESU are a California Species of Special Concern.

Chinook salmon have similar spawning habitat requirements to steelhead: cobble and gravel beds in streams with a good flow of cool, well-oxygenated water. Chinook salmon generally spawn in the larger, lower reaches of Estuary watersheds including the Napa River, Guadalupe River, and Walnut Creek (Leidy 2007). Their status in the Sonoma Creek watershed including Nathanson Creek has not been well documented, but Leidy (2007) indicates that Chinook salmon are native in this drainage.

Chinook salmon were not observed in the BSA during the field survey, but the survey was conducted during the time of year (November) when stream flows were low and fish movement within the creek would be minimal.

Critical habitat for fall/late-fall run Chinook salmon has not been designated; however, Nathanson Creek is within Essential Fish Habitat (EFH) for this species (NMFS 2011).

Special-Status Plant Species

Ten special-status plant species were identified as having potential to occur within the Project vicinity; however, none are expected to occur in the BSA due to the urban setting and lack of suitable habitat.

Discussion

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

Less Than Significant with Mitigation Incorporated. Steelhead and Chinook salmon were not observed in the BSA during the field surveys, but the surveys were conducted during the time of year (November and February) when stream flows were low and fish movement within the creek would be minimal. The water in the pool under the existing bridge was dark “tea colored” during the field survey, making it difficult to observe fish if they were present. Nonetheless, the pool does not likely

provide good rearing habitat for young steelhead and/or Chinook salmon, due to the lack of inflow of fresh, well-oxygenated water.

Even though there are no CNDDDB occurrences of steelhead and/or Chinook salmon within one mile of the BSA and no steelhead and/or Chinook salmon were observed during field surveys, the section of Nathanson Creek within the BSA is an essential migration corridor for steelhead and Chinook salmon spawning in the upper watershed and smolts moving downstream. Federally designated critical habitat for steelhead includes the section of Nathanson Creek within the BSA (NMFS 2005); however, critical habitat for fall/late-fall run Chinook salmon has not been designated. EFH has not been designated for steelhead (NMFS 2013); however, Nathanson Creek is within EFH for Chinook salmon (NMFS 2011).

No impacts to suitable spawning habitat would occur as a result of the bridge replacement because such habitat does not occur in the BSA or immediate vicinity. Stream flows during low-flow periods within the BSA are intermittent and only isolated small pools occur within the BSA. Areas of flowing water are very shallow and not deep enough to provide suitable habitat for egg laying and rearing. In addition, the streambed within the BSA lacks suitable gravel substrate for nest building. The section of Nathanson Creek within the BSA, however, is an essential migration corridor for steelhead spawning in the upper watershed and smolts moving downstream.

Removal of four black locust, four Oregon ash, and one Douglas fir would open the riparian canopy, allowing incrementally more sunlight to reach the creek. However, the removal of these trees is not likely to adversely affect Nathanson Creek as fish habitat (e.g., increased water temperatures) because only a few trees would be removed and a number of large native and non-native trees would remain in the BSA. The remaining trees would provide adequate shading of the creek.

Because steelhead and Chinook salmon are known to occur within Nathanson Creek and must pass through the BSA to reach spawning areas upstream, the proposed Project has the potential to impact this species. However, consultation with NMFS has identified a work window between July 1 to October 15 during low flow conditions (dry season). Fish are not expected to be present during the work window. Implementation of **Mitigation Measure BIO-1** would reduce this impact to a *less than significant* level.

Mitigation Measure BIO-1: The following avoidance and minimization measures shall be implemented to minimize water quality impacts in conformance with Section 7-1.01G of Caltrans Standard Specifications – Water Pollution Control and Caltrans Construction Manual, Section 6-20 - Erosion Control and Highway Planting.

The BMPs shall include the following measures to avoid impacts to salmonids:

1. The Project shall minimize the mobilization of sediments during in-water work by using silt trapping devices (e.g., curtains) during removal of the old bridge and shall implement Caltrans Best Management Practices (BMPs) for the control of noxious weeds, including using weed-free seed and mulching materials.
2. Construction equipment required for the Project shall operate primarily from areas outside the streambed. Work below the tops of the creek bank, including bank repair, shall be allowed only during the period July 1 to October 15 during low flow conditions (dry season).

3. No fill material, including asphalt or concrete, shall be allowed to enter the stream. Any concrete structures (such as headwall construction) below the tops of banks shall be poured in tightly sealed forms and shall not be allowed contact with surface waters until the cement has fully cured. Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time, the poured concrete shall be kept moist, and runoff from the concrete shall not be allowed to enter the creek. Commercial sealants may be applied to the poured concrete surface in locations where the exclusion of water flow for a long period is difficult. If a sealant is used, water shall be excluded from the site until the sealant is dry and fully cured according to the manufacturer's specifications.
4. Water that contacts wet concrete and has a pH greater than 9.0 shall be pumped out and disposed of outside the creek channel.
5. No substances toxic to aquatic life shall be discharged into Nathanson Creek (e.g., diesel fuel, oil, hydraulic fluid, run-off from curing concrete, etc.).
6. If dewatering of Nathanson Creek within the BSA is required, cofferdams shall be constructed in the creek bed at the upstream and downstream limits of the work area and a temporary culvert shall be installed to allow for stream flows to pass through the work area. A qualified biologist approved by the NMFS shall be on hand during dewatering to remove any salmon, steelhead, or other native fish species that may be present.
7. If hydroseed mixes are used to stabilize disturbed areas, such mixes shall not contain fertilizers.
8. If feasible, equipment maintenance and fueling areas shall be located at least 50 feet away from the creek bank. Fueling must be behind a containment barrier that shall prevent any spilled or leaked fuel from running into the creek. All equipment servicing shall occur within designated areas. All motorized equipment used during construction or demolition activities shall be checked for oil, fuel, and coolant leaks prior to initiating work. Any equipment found to be leaking fluids shall not be used in or around aquatic habitat features in order to minimize the chances of contaminating the habitat and potentially impacting sensitive species, particularly salmon and steelhead.
9. The Project's contractor shall prepare an emergency response and cleanup plan prior to beginning work at the site. The plan shall detail the methods to be used to contain and cleanup spills of petroleum products or other hazardous materials in the work area.
10. All maintenance crew personnel shall receive environmental training about the sensitive nature of the special-status species in the Project vicinity. This training shall include descriptions of the special-status species and Project measures in place to protect the species during construction. Crews shall also be informed to stop all work and notify their supervisor or the Project biologist if special-status species are observed within the Project site.
11. If dewatering of the creek within the BSA is required, a qualified biologist approved by the NMFS shall be on hand during dewatering to remove any salmon, steelhead, or other native fish species that may be present. A cofferdam constructed of sandbags or other appropriate materials shall be placed at the upstream and downstream limits of the work area. If water is present in the creek, a culvert shall be placed in the streambed, between the cofferdams, to allow stream flow to pass through the work area. Salmon, steelhead, or other native fish species shall be removed from the work area with a dip-net and relocated to a pre-designated location, approved by NMFS, within Nathanson Creek. If non-native aquatic species such as American bullfrogs are found, they shall be removed and humanely dispatched. After completion of the Project, the NMFS-approved biologist shall prepare a report providing the

- results of the removal/relocation effort for submittal to NMFS and CDFW. The report shall also include information on any non-native species that were removed from the work area.
12. After Project completion, any soil or other material that has entered the streambed during construction shall be removed and the streambed shall be returned to its natural contour.

Implementation of the BMPs would reduce potential impacts to salmonids to a *less than significant* level.

Tree removal within the Project area would have the potential to impact nesting birds and other special-status birds. Implementation of **Mitigation Measure BIO-2** would reduce potential impacts to nesting birds and other special-status birds to a *less than significant* level.

Mitigation Measure BIO-2: Pre-construction surveys for nesting birds and other special-status birds and appropriate nesting habitat shall be conducted no more than 3 days prior to ground disturbing activities. If an active nest is found, a qualified biologist in conjunction with USFWS/CDFW shall determine the appropriate buffer size and delineate the buffer using ESA fencing, pin flags, yellow caution tape, etc. During construction, the qualified biologist shall conduct regular monitoring (at CDFW-approved intervals) to evaluate the nest for potential disturbances associated with construction activities. Construction within the buffer shall be prohibited until the qualified biologist determines the nest is no longer active. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities shall stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest. If establishment of the buffer is not feasible, USFWS/CDFW shall be contacted for further avoidance and minimization guidelines.

Pre-construction surveys and construction monitoring of nesting birds would reduce potential impacts to nesting birds to a *less than significant* level.

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

Less Than Significant with Mitigation Incorporated. Nathanson Creek (within the BSA) is confined to a narrow incised channel approximately 5 to 6 feet deep. The stream flows over a bed of Quaternary alluvium consisting of strongly cemented old valley alluvium and deposits of various sized cobbles. Residential development encroaches to the edge of the incised channel. Water was present in the streambed during the field surveys and the scoured pool under the bridge was approximately 30 inches deep on November 11, 2011. Physical conditions in the BSA were essentially the same during the February 27, 2013, survey.

The wetland delineation (conducted by LSA Associates, Inc. on December 13, 2011) identified approximately 2,390 square feet (0.05 acre) of potential waters of the United States, 25 square feet (0.0006 acre) of seasonal wetland, and approximately 2,830 square feet (0.06 acre) of area subject to CDFW jurisdiction within the BSA. The jurisdictional area is preliminary and subject to verification by the Corps.

The proposed Project would result in an estimated permanent impact to 398 square feet (0.009 acre) of potential waters of the United States and 746 square feet (0.02 acre) of creek bed, bank, and

riparian habitat under CDFW jurisdiction. The total estimated permanent impacts would be 1,144 square feet (0.03 acre).

Construction activities associated with the proposed Project would result in temporary impacts to an estimated 2,950 square feet (0.07 acre) of potential waters of the United States and 838 square feet (0.02 acre) of riparian habitat under CDFW jurisdiction. Total estimated temporary impacts are estimated at 3,788 square feet (0.09 acre).

After completion of the proposed Project, the area of potential waters of the United States would increase by approximately 105 square feet (0.002 acre) because construction of the new bridge would result in removal of the old in-channel abutments and wing walls that currently restrict the channel width under the bridge.

Because the proposed Project would result in permanent and temporary impacts to potential waters of the United States and creek bed, bank, and riparian habitat, this would be a significant impact. Implementation of **Mitigation Measure BIO-3** would reduce potential impacts to waters and riparian habitat to a *less than significant* level.

Mitigation Measure BIO-3: Construction equipment required for the proposed Project shall operate primarily from areas outside the streambed. All work within the streambed shall be conducted in the low flow season (between July 1 and October 15) to minimize the effects of erosion and sedimentation in downstream areas. Disturbance to the streambed during Project construction shall be minimal and temporary and access to the streambed occur from the existing roadway after the removal of the existing bridge and existing bridge abutments; however, after Project completion, any soil or other material that has entered the streambed during construction shall be removed and the streambed shall be returned to its natural contour.

Construction activities during the identified work window and returning the streambed to its natural contour would result in a *less than significant* impact.

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

No Impact. Placement of the new bridge abutments and rock slope protection would impact an estimated 1,144 square feet (0.03 acre) of streambed and riparian habitat, an estimated permanent impact to 398 square feet (0.009 acre) of non-wetland waters under the jurisdiction of the United States Army Corps of Engineers (Corps) and an additional 746 square feet (0.02 acre) of riparian habitat under the jurisdiction of the CDFW. The wetland delineation prepared for the proposed Project did not identify wetlands within the BSA. Therefore, the proposed Project would not impact wetlands as defined by Section 404 of the Clean Water Act. **No impact** would occur.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant with Mitigation Incorporated. The segment of Nathanson Creek within the BSA is an essential migration corridor for steelhead and Chinook salmon spawning in the upper watershed and smolts moving downstream. Because steelhead and Chinook salmon are known to

occur within Nathanson Creek and must pass through the BSA to reach spawning areas upstream, the proposed Project has the potential to impact steelhead and Chinook salmon. **Mitigation Measure BIO-1** identifies an in-channel work window between July 1 to October 15 during low flow conditions (dry season); therefore, implementation of **Mitigation Measure BIO-1** would reduce this impact to a *less than significant* level.

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

Less Than Significant with Mitigation Incorporated. The City of Sonoma Tree Ordinance (Chapter 12.08 of the Municipal Code) regulates the removal of trees within the City. The Tree Ordinance applies to trees on both public and private property. Important aspects in the Tree Ordinance, relevant to the proposed Project, include “significant tree” and “significant tree, private.”

The Tree Ordinance defines “significant tree” as any tree having a single trunk circumference greater than one and one-half feet (18 inches), except for those located on a single-family residential property or multi-family residential property. “Significant tree, private” is defined as any tree having a single trunk circumference greater than four and one-half feet (54 inches), located on a single-family residential property or multi-family residential property within a front yard or street-side yard setback as defined in the Sonoma Municipal Code Title 19. A permit from the City Public Works Director is generally required for the removal of “significant tree” or “significant tree, private”.

The City of Sonoma Heritage Tree Ordinance also protects “heritage trees”. Heritage trees are defined as a tree or group of trees specifically designated by official act of the City’s Parks and Recreation Commission following this criteria: 1) has historical significance or has taken on the aura of historic appeal; 2) is mutually dependent upon each other for survival; 3) is considered an outstanding specimen of its species; 4) is 50 inches or more in diameter measured at 24 inches above natural grade; or 5) has been recommended as such by the Parks and Recreation Commission and dedicated and accepted by the City Council of Sonoma.

Thirteen trees consisting of seven different species occur within the BSA. As shown in **Table E: Trees Located within the BSA**, significant trees within public property in the BSA include one black locust (#5) and one Douglas fir (#13). Significant trees on private property within the BSA include black locust (#1, #2, and #6), glossy privet (#3), and valley oak (#12).

Table E: Trees Located within the BSA

Tree No.	Species Name	Common Name	Tree Circumference (diameter) in Inches ¹	Tree Condition ²			Signif. Tree? ³	Remove
				Structure	Health	Overall		
1	<i>Robinia pseudoacacia</i>	Black locust	75 (24)	3	4	3	Yes (priv)	Yes
2	<i>Robinia pseudoacacia</i>	Black locust	38 (12)	3	4	3	Yes (priv)	Yes
3	<i>Ligustrum lucidum</i>	Glossy privet	56 (18)	4	4	4	Yes (priv)	No
4	<i>Robinia</i>	Black locust	75 (24)	3	3	3	Yes	Yes

Tree No.	Species Name	Common Name	Tree Circumference (diameter) in Inches ¹	Tree Condition ²			Signif. Tree? ³	Remove
				Structure	Health	Overall		
	<i>pseudoacacia</i>						(priv)	
5	<i>Robinia pseudoacacia</i>	Black locust	56 (18)	0	0	0	Yes (pub)	Yes
6	<i>Fraxinus latifolia</i>	Oregon ash	31 (10)	4	4	3	No (priv)	Yes
7	<i>Fraxinus latifolia</i>	Oregon ash	31 (10)	4	3	3	No (priv)	Yes
8	<i>Fraxinus latifolia</i>	Oregon ash	31 (10)	4	4	4	No (priv)	Yes
9	<i>Fraxinus latifolia</i>	Oregon ash	31 (10)	4	4	4	No (priv)	Yes
10	<i>Acer negundo</i>	Box elder	38 (12)	3	2	3	No (priv)	No
11	<i>Salix lasiolepis</i>	Arroyo willow	75 (24)	3	3	3	No (priv)	No
12	<i>Quercus lobata</i>	Valley oak	56 (18)	4	4	4	Yes (priv)	No
13	<i>Pseudotsuga menziesii</i>	Douglas-fir	113 (36)	4	4	4	Yes (pub)	Yes

There are no designated heritage trees present within the BSA.

Four black locust trees, four Oregon ash trees, and one Douglas fir tree would be removed as a result of the proposed Project. Three of these trees (#s 2, 3, and 6) are considered in fair condition, and one (#7) appears to be dead.

The proposed Project would require the removal of four black locust trees, four Oregon ash trees, and one Douglas fir tree and the removal of trees without tree replacement would result in a conflict with the City’s tree ordinance, a significant impact . Implementation of **Mitigation Measure BIO-4** would reduce this impact to a *less than significant* level.

Mitigation Measure BIO-4: Orange environmental fencing shall be placed around the areas where trees to be avoided are located. If feasible, the environmental fencing shall enclose the area from the tree drip-line to the trunk.

The City’s Tree Committee would approve the removal of trees and mitigation of trees removed during project construction. Replacement trees shall be planted within the Project area (if possible) or within the general vicinity of the Project to replace the removed trees.

1. Unless otherwise approved by the review authority, tree replacement shall occur on-site and shall, at a minimum, occur at a 1:1 ratio and a 15-gallon box size for each six inches of tree diameter removed.
2. If the development site is inadequate in size to accommodate the replacement trees, the trees may be planted on public property with the approval of the public works director.

3. Upon the request of the developer and the approval of the city council, the city may accept an in-lieu payment of \$100.00 per 15-gallon replacement tree on condition that all such payments shall be used for tree-related educational projects and/or planting programs of the City.

The City requires a no net loss of trees during construction. The City's Tree Committee would approve the removal of trees and mitigation of trees removed during proposed Project construction. Replacement trees would be planted within the proposed Project area (if possible) or within the general vicinity of the proposed Project to replace the removed trees. The City has a list of approved tree species for replacement. Because the proposed Project would involve the planting of replacement trees within or within the general vicinity of the proposed Project area, this impact would be *less than significant*.

- 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?*

Less Than Significant with Mitigation Incorporated. The Biological Resources element of the City of Sonoma General Plan Background Report describes conservation Measures A and C which were implemented in 1990. Measure A established the Sonoma County Agricultural Preservation and Open Space District, and Measure C provided financing for acquisition of open space and agricultural lands. The City of Sonoma implements these open space and habitat protection strategies through: growth management, habitat protection of riparian corridors, hillsides and creeks, protecting agricultural lands, and other policies relating to recreation, public safety and preserving a rural character.

The proposed Project would be located in a residential neighborhood and would not be located on land designated for conservation. Project operational impacts associated with consistency with the City's Biological Resources element would be *less than significant*.

The Environmental Resources element in the City's General Plan (2006) includes policies to preserve natural features such as creek and riparian areas, trees and wildlife habitat. Applicable policies include:

Goal ER-2 Identify, preserve and enhance important habitat areas and significant environmental resources.

- Policy 2.2 Preserve habitat that supports threatened, rare, or endangered species identified by State or federal agencies.
- Policy 2.3 Protect and, where necessary, enhance riparian corridors.
- Policy 2.4 Protect Sonoma Valley watershed resources, including surface and ground water supplies and quality.
- Policy 2.5 Require erosion control and soil conservation practices that support watershed protection.
- Policy 2.6 Preserve existing trees and plant new trees.

- Policy 2.9 Require development to avoid potential impacts to wildlife habitat, air quality, and other significant biological resources, or to adequately mitigate such impacts if avoidance is not feasible.

The proposed Project would support Goal ER-2 and would be consistent with the above-listed policies. The proposed Project would not increase human disturbance to important habitat areas and significant environmental resources. The proposed Project would directly support Policy 2.3 because the proposed Project would enhance potential waters of the United States by increasing the area approximately 105 square feet (0.002 acre). Construction of the new bridge would result in removal of the old in-channel abutments and wing walls that currently restrict the channel width under the bridge.

Implementation of **Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4** would be necessary to avoid potential adverse construction-related impacts to special-status species/migratory fish species, riparian habitat, existing trees, and to ensure compliance with the applicable habitat conservation goals and policies set forth in the City of Sonoma General Plan. Construction-related impacts would be *less than significant* with the implementation of the above-referenced mitigation measures.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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V. CULTURAL RESOURCES

Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

A Historical Property Survey Report (HPSR) (June 2014), Archaeological Survey Report (ASR) (February 2014), Historical Resources Evaluation Report (HRER) (February 2014), and Extended Phase I Report (XPI) (May 2014) were completed by LSA for the proposed Project (see **Appendix B**). These studies consist of archival research, consultation with potentially interested parties, architectural evaluations, and archaeological excavation. The information for the following section was based on these four reports.

Research

Research was conducted to identify historical resources within an Area of Potential Effects (APE) for the proposed Project. The 1.63-acre architectural APE is approximately 340 feet long by 180 to 250 feet wide and is bound to include the entirety of all parcels from which there is right-of-way involvement. The 0.37-acre archaeological APE is approximately 230 feet long by 50 to 120 feet wide and is bound to include the maximum extent of ground disturbance including staging areas and access roads.

LSA conducted a records search of the APE on March 20, 2013, at the Northwest Information Center (NWIC) of the California Historical Resources Information System, California State University, Sonoma. The records search included the APE and a ¼-mile radius for previous cultural resource studies and cultural sites. No cultural resources were found within the proposed Project APE or the ¼-mile search radius.

Consultation

On April 5, 2013, LSA sent a letter describing the project with maps depicting the APE to the Native American Heritage Commission (NAHC) in Sacramento asking the NAHC to review their Sacred Lands File for any Native American cultural resources that might be affected by the proposed project.

Also requested were the names of Native Americans who might have information or concerns about the proposed project. Debbie Pilas-Treadway, NAHC Environmental Specialist III, in a fax dated April 16, 2013, informed LSA that a records search of the Sacred Lands File did not “indicate the presence of Native American cultural resources in the immediate project area.” Ms. Pilas-Treadway also provided a list of Native American contacts. On May 23, 2013, LSA sent letters describing the proposed project with maps depicting the APE to the Native American contacts provided by the NAHC, asking for any information or concerns regarding cultural resources within the APE. This consultation resulted in responses from two out of four Native American contacts: the *Federated Indians of Graton Rancheria* and the *Pomo/Coast Miwok, Wappo*. The *Federated Indians of Graton Rancheria* requested government-to-government consultation, which was never formally initiated because the *Federated Indians of Graton Rancheria* later agreed to group (LSA, Caltrans, Tribal) consultation, and FHWA did not get involved. The *Federated Indians of Graton Rancheria* monitored archaeological excavations within the APE that are presented in the XPI. The *Pomo/Coast Miwok, Wappo* indicated they did not have any questions or comments. LSA left messages with the other two Tribes that had not provided responses to consultation letters, asking them to express any questions or concerns they may have about the proposed project and no response has been received to date.

On April 17, 2013, LSA sent a letter describing the proposed project with maps depicting the APE to the Sonoma Valley Historical Society requesting any information or concerns regarding the proposed project. Additionally, on May 22, 2013, LSA sent a letter describing the proposed project with maps depicting the APE to the Sonoma County Historical Society, Sonoma League for Historic Preservation, and the City of Sonoma requesting any information or concerns regarding the proposed Project. The Sonoma Valley Historical Society recommended contacting the Sonoma League for Historic Preservation with questions regarding Chase Street Bridge. The Sonoma Valley Historical Society, Sonoma League for Historic Preservation, and the City of Sonoma did not express concerns regarding the proposed Project.

Cultural Resources

Built Environment Resources. Three built environment resources are located within the APE:

- A residential property built in 1953, at 78 Chase Street, (APN 018-352-38);
- A former agricultural outbuilding, known as the Bancroft Barn, built in 1904, at 78 Chase Street (APN 018-352-038); and
- Nathanson Creek Bridge (Bridge No. 20C-0497), this structure was built in 1910, carries Chase Street over Nathanson Creek, and was widened or extended in 1990.

The resources listed above were evaluated for their eligibility for inclusion in the National Register of Historic Places and the California Register of Historical Resources. LSA’s background research and field survey concluded that these resources do not appear eligible, either individually or as part of a district, for inclusion in the National Register of Historic Places or the California Register of Historical Resources and are not historical resources for the purposes of CEQA. The residential building and Bancroft Barn do not appear eligible due to a lack of a significant association with a historic context. Nathanson Creek Bridge overcrossing was previously evaluated and assigned a status rating of “5” indicating that it is not eligible for listing in the National Register of Historic Places.

Archaeological Resources. The ASR consists of archival and background research, consultation with potentially interested parties and an archaeological sensitivity assessment. No archaeological cultural resources were identified in the NWIC records search or field survey. The archaeological sensitivity assessment identified sensitivity for encountering buried prehistoric archaeological deposits and low sensitivity for encountering historic-period archaeological deposits within. Due to the elevated buried prehistoric archaeological sensitivity LSA completed an XPI. The XPI fieldwork consisted of shovel test pit excavation to a depth of approximately 10.5 feet. Modern cultural materials, likely associated with bridge and road construction, and historic-period artifacts were observed within alluvial sediments that were likely transported by Nathanson Creek. No buried archaeological deposits were identified by this investigation, and the likelihood of encountering such deposits in the APE is considered low.

Discussion

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

Less Than Significant with Mitigation Incorporated. As described above, research was conducted to determine if historical or Native American sensitive sites were located within the APE or surrounding the proposed Project site. No historical resources were identified within or adjacent to the proposed Project area.

While no resources have been previously identified in the study area and archaeological material was not observed during the site visit, the possibility exists that previously unknown buried archaeological deposits could be discovered during grading and excavation work associated with construction. Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt or quartzite tool making debris; bone tools; culturally darkened soil (e.g., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal and other refuse. Implementation of **Mitigation Measure CULT-1** would reduce impacts to previously undiscovered resources to a *less than significant* level.

Mitigation Measure CULT-1: If deposits of prehistoric or historical archaeological materials are discovered during non-monitored Project construction activities, all work within 25 feet of the discovery shall be redirected and a qualified archaeologist contacted, if one is not present, to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. The City of Sonoma shall be notified, and Project personnel shall not collect or move any archaeological materials.

Any adverse impacts to the finds shall be avoided by Project activities. If avoidance is not feasible, the archaeological deposits shall be evaluated to determine if they qualify as a historical resource or unique archaeological resource, or as historic property. If the deposits do not so qualify, avoidance is not necessary. If the deposits do so qualify, adverse impacts on the deposits shall be avoided, or such impacts shall be mitigated. Mitigation may consist of, but is not limited to, recovery and analysis of the archaeological deposit; recording the resource; preparing a report of findings; and accessioning recovered archaeological materials at an appropriate curation

facility. Educational public outreach shall also be considered by the archaeologist in consultation with the City. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the archaeological deposits discovered. The report shall be submitted to the City of Sonoma.

Potential impacts to cultural resources would be *less than significant* with implementation of the recommended mitigation because the mitigation measure details the procedures to follow in the event previously undiscovered resources are located during construction.

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

Less Than Significant with Mitigation Incorporated. No archaeological resources, as defined by §15064.5, have been identified in the Project area. Archaeological resources are not anticipated to be discovered during proposed Project activities. If, however, such resources are discovered, implementation of **Mitigation Measure CULT-1** (monitoring and protection of discovered resources), described above, would reduce potential impacts to a *less than significant* level.

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

Less Than Significant with Mitigation Incorporated. No paleontological resources or unique geologic features are known to exist within the APE. However, should paleontological resources be discovered during Project construction, **Mitigation Measure CULT-2** shall be implemented to reduce potential impacts to a *less than significant* level.

Mitigation Measure CULT-2: If paleontological resources are encountered during Project subsurface construction and no monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist can be contacted to evaluate the find and make recommendations. If found to be significant and Project activities cannot avoid the paleontological resources, a paleontological evaluation and monitoring plan, as described above, shall be implemented. Adverse impacts to paleontological resources shall be mitigated, which may include monitoring, data recovery and analysis, a final report, and the accession of all fossil material to a paleontological repository. Upon completion of Project ground-disturbing activities, a report documenting methods, findings, and recommendations shall be prepared and submitted to the paleontological repository.

With implementation of **Mitigation Measure CULT-2** including monitoring and protection of paleontological resources impacts would be *less than significant*.

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

Less Than Significant with Mitigation Incorporated. No human remains are known to exist within the APE. Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Sonoma County Coroner has determined whether or not the remains are subject to the coroner's authority. There is no indication that human remains are present within the Project site. Implementation of **Mitigation Measure CULT-3** would ensure that potential impacts to human remains, should they be encountered, would be reduced to a *less than significant* level.

Mitigation Measure CULT-3: In the event that human remains are encountered, work within 50 feet of the discovery shall be redirected and the Sonoma County Coroner notified immediately. At the same time, a qualified archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission shall identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations of the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the City of Sonoma. The City shall be responsible for implementation of recommendations.

With implementation of **Mitigation Measure CULT-3**, which outlines the steps to be taken in the event of discovery of human remains, impacts would be *less than significant*.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS

Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Information in this section has been derived from the City of Sonoma 2020 General Plan Update Final Environmental Impact Report (City of Sonoma 2006).

Regional Setting

The City of Sonoma is located within the Sonoma Valley, which trends in a southeasterly direction among and between the Sonoma Mountain range from Santa Rosa to San Pablo Bay. A small area in the northernmost portion of the City limits rises above the valley floor to form Shocken Hill, which has an elevation of 400 feet above mean sea level (MSL). Elevations within the City are comprised of

a gently sloped plain with elevations that range from 100 feet MSL near Shocken Hill to 15 feet MSL near Schellville. The average elevation of the Project area is approximately 70 feet MSL.

Soils

Soil types located within the Project area are comprised of Huichica loam, 2 to 9 percent slopes (HtC). The Huichica loam, 2 to 9 percent are described as moderately well drained and having very slow permeability in the subsoil.¹ Huichica Series soils are described as having upper horizons of loam, clay loam from approximately 14 to 23 inches in depth, clay from 23 to 30 inches in depth, and strongly cemented hardpan below 30 inches in depth. The Huichica Series soils are described as moderately well-drained (HtC map units) and have very slow permeability in the subsoil.

According to the Caltrans Bridge Inspection Report dated July 29, 2010, the existing bridge is founded in “firm sandstone”. The “sandstone” observed near the existing footings could be naturally cemented material associated with the alluvial fan deposits but could also be associated with cemented tuffaceous (rock composed of compacted volcanic ash) material found in the Glen Ellen Formation, which could underlie the alluvial fan deposits (Taber 2012).

The Project site is shown on available geologic maps (Wagner, D.L., “Geologic Map of Sonoma 7.5-minute quadrangle,” California Geological Survey, Version 1.0, 2004, scale 1:24,000) as consisting of an artificial stream channel (indicating the current modified stream channel) and Quarternary alluvial fan deposits (outside of the stream channel). The artificial stream channel designation includes slope protection and alteration of the stream bed, consistent with rip-rap and pavements observed in the channel. The designation also includes gravel, sand, and cobbles observed in the channel at the surface during site reconnaissance surveys. The alluvial fan deposits consist of sand, gravel, silt and clay. Bedrock is not mapped at the proposed Project site, and depth to rock is unknown.

Earth Movement

Faults are surface and subsurface fissures that are located in geographically weak areas of the Earth’s underlying bedrock and potential fault zones prone to stress. Faults that are considered active include areas where shifting or deformation has been observed in the past 11,000 years (Holocene period). Potentially active faults, or Quaternary faults, refer to movement or deformation during the Quaternary period (typically less than 1.8 million years). The closest faults are the Rodgers Creek Fault and the Tolay Fault, located approximately 4.5 and 7.5 miles, respectively, to the west of the City within the Sonoma Mountains. The State of California released the Uniform California Earthquake Rupture Forecast (2008) and assigned a 31 percent probability that the Hayward-Rodgers Creek Fault system would produce a magnitude 6.7 or larger earthquake in the next 30 years.

The Alquist-Priolo Earthquake Fault Zoning Act (APEFZA) provides policies and criteria to assist cities, counties and State agencies in restricting development on active faults. The APEFZA requires the State geologist to delineate regulatory zones that encompass all potentially and recently active traces of named faults and other such faults, or fault segments that are deemed sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep. No APEFZA faults or zones are located in the City of Sonoma. The closest faults are the Rodgers Creek

¹ United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey (WSS), <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>. Accessed August 20, 2013.

Fault and the Tolay Fault, which pass approximately 4.5 and 7.5 miles, respectively, to the west of the Project site within the Sonoma Mountains.

An unnamed, uncertain, concealed (buried) fault is shown to cross the bridge location on a map dated 1980 (Armstrong, C.F., "Geology for planning in Sonoma County:" California Division of Mines and Geology, Special Report 120, Plate 3B, 1980, scale 1:62,500). The same fault is shown on the 2004 map referenced above; however, the fault does not continue across the central portion of the Sonoma Valley where the Project site would be located. Additionally, the *draft* of Special Report 120, Plate 2B, dated 1974, by Armstrong, C.F., "Surface Rupture and Tsunami Hazards – Southern Sonoma County" shows fault rupture hazards in the area and does not include the unnamed fault.

The current state fault map (Jennings, C.W., and Bryant, W.A., 2010, "Fault Activity Map of California:" Geological Data Map No. 62010: California Geological Survey) shows an unnamed, buried fault passing through the Project site. This fault generally strikes northwest and is pre-quaternary. The fault is not listed as active (per the Caltrans ARS Online site), and the site is not in an "Alquist-Priolo Earthquake Fault Zone" for fault-rupture hazard.

The California Geologic Survey Probabilistic Seismic Hazard Assessment (PHSA) calculates earthquake shaking hazards through historic seismic activity and fault slip rates. Shaking from faults is expressed as the Peak Ground Acceleration (PGA) measured as a percentage (or fraction) of acceleration due to gravity (%g) from ground motion that has a 10 percent probability of being exceeded in 50 years. The Project site is located in an area with a PGA of 50-60 percent (0.50-0.60g).

Seismic ground shaking can result in soil compaction and settlement. Sediments that are compacted during an earthquake become saturated and are subject to liquefaction. If liquefaction occurs, soil loses its supporting structure, resulting in a condition where buildings and other constructed facilities could settle into the ground. Figure 8-1 of the Sonoma County Hazard Mitigation Plan illustrates areas of liquefaction throughout the County. The figure indicates that lands to the west of the City of Sonoma are classified as an area with a medium liquefaction risk; however, the Project area does not include a liquefaction risk classification.

Slope instability (landslides and rockslides) can result in the movement of material down a slope or gradient. Areas at risk from landslides within the City of Sonoma are expected to be concentrated along steep topographical slopes. The Project site is located on flat topographical land. No hillsides, slopes, steep topographical areas, cliffs or mountains are located within or near the Project site. The potential for landslides occurring on or adjacent to the Project site is low.

Discussion

- a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
 - i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

Less Than Significant. According to the Division of Mines and Geology Special Publication 42, Index to Earthquake Fault Zone Maps Figure 4B, the City of Sonoma is not affected by the Alquist-Priolo Earthquake Fault Zones, and no known active or potentially active faults are located in the City of Sonoma planning area (City of Sonoma 2006). The closest faults are the Rodgers Creek Fault and the Tolay Fault, which pass approximately 4.5 and 7.5 miles, respectively, to the west of the Project site within the Sonoma Mountains. The proposed Project would replace an existing bridge and would not include the development of structures to house people or to provide new infrastructure. Therefore, the proposed Project would not expose people or structures to potential risk of loss, injury or death involving rupture of a known earthquake fault or Alquist-Priolo Earthquake Fault Zone. This impact would be *less than significant*.

ii) Strong seismic ground shaking?

Less Than Significant. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground-shaking is controlled by the magnitude and intensity of the earthquake, depth of the epicenter, distance from the epicenter, and local geological conditions.

The Project site is located approximately 4.5 miles from the nearest active fault (Rodgers Creek Fault). In 2008, the State of California released the Uniform California Earthquake Rupture Forecast, which assigned a 31 percent probability that the Hayward-Rodgers Creek Fault system would produce a magnitude 6.7 or larger earthquake in the next 30 years. Based on the available geological and seismic data, the Project site is located in an area that has the potential to experience Peak Ground Acceleration of 50-60 percent (0.50 to 0.60g – indicating high ground shaking) during such a seismic event. Although the site could be exposed to high ground shaking, the proposed Project would be designed and constructed consistent with City of Sonoma and Caltrans seismic retrofitting standards. The proposed Project would not expose people or structures to potential adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking. Impacts would be *less than significant*.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant with Mitigation Incorporated. Soil liquefaction is a phenomenon primarily associated with the saturated soil layers located close to the ground surface. These soils lose strength during ground shaking in seismic events. Due to the loss of strength, the soil acquires “mobility” sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (minute silt and clay fraction) may also liquefy.

According to Taber Consultants (2012), liquefaction, a secondary effect associated with seismic loading, is possible within the Project area due to the granular nature of the material. The potentially liquefiable material in the Project area is located above the elevation of the proposed new footings for the replacement structure and should largely be removed and replaced during new bridge construction in the immediate vicinity of the bridge.

Implementation of **Mitigation Measure GEO-1** would ensure that the foundations of the new bridge associated with the proposed Project would not be susceptible to failure from liquefaction.

Mitigation Measure GEO-1: A Design Level Geotechnical Investigation shall be prepared for the site under the direction of a California Registered Geotechnical Engineer, or Civil Engineer experienced in geotechnical engineering, and shall include analysis for liquefaction potential of the underlying sediments and recommendations for construction on expansive soils. Proper foundation engineering and construction shall be performed in accordance with the recommendations of the Geotechnical Investigation. The Geotechnical Investigation shall be reviewed and approved by the City's Geotechnical Consultant and by the City Engineer. A Registered Structural Engineer, or civil engineer experienced in structural engineering shall prepare Project structural design plans. Structures shall be designed to minimize the effects of anticipated seismic settlements. The Geotechnical Engineer shall review the Structural Design Plans and provide approval for the geotechnical elements of the plans. The design plans shall identify specific mitigation measures to reduce the liquefaction potential of surface soils. Mitigation measures may include excavation and replacement as engineered fill, reduced foundation loading, and ground improvement by methods such as stone columns or pressure grouting.

Preparation of a Project-specific Design Level Geotechnical Investigation, including implementation of measures identified to reduce liquefaction potential (**Mitigation Measure GEO-1**) would reduce potential liquefaction impacts to a *less than significant* level.

iv) *Landslides?*

No Impact. The Project site is not considered at risk for landside potential (Taber 2012) and is located on flat ground. Therefore, the proposed Project would not be susceptible to landslides. *No impact* would occur.

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

Less Than Significant with Mitigation Incorporation. Sandy soils on moderate slopes or clayey soils on steep slopes are susceptible to erosion when exposed to concentrated water runoff. Soils within the Project area consist of clay loam at 2 to 9 percent slopes and have a moderate erosion potential (NRCS 2014). Construction activities would have the potential to result in erosion and/or sedimentation, which would be considered a significant impact. With the implementation of **Mitigation Measure GEO-2**, potential erosion impacts would be reduced to *less than significant*.

Mitigation Measure GEO-2: The City shall require that the Contractor prepare and submit an Erosion and Sediment Control Plan for the proposed Project prior to construction. Below are some of the measures that shall be implemented to reduce soil erosion and protect water quality during construction. The use of BMPs shall be designed to reduce erosion and prevent sediment or other potential pollutants from leaving the work site or impacting water quality in Nathanson Creek. The City shall require the Contractor to implement BMPs for erosion and sedimentation outlined in the most recent version of the Erosion and Sediment Control Field Manual (California Regional Water Quality Control Board, 2002), or an equivalent publication.

- Best management practices outlined in the most recent version of the Erosion and Sediment Control Field Manual, published by the Regional Water Quality Control Board, or equivalent publication, shall be implemented for erosion, sediment and turbidity control during and after

any ground clearing activities or any other Project activities that could result in erosion or sediment discharges to surface water.

- Exposed slopes shall be protected using temporary erosion control blankets, fiber rolls, silt fences, or other approved erosion and sediment controls.
- Erosion prevention and sediment control measures shall be inspected and maintained until disturbed areas are stabilized.
- Disturbed ground surfaces near the creek bank shall be revegetated and monitored for future erosion.
- To ensure that stockpiled granular material does not enter the creek or storm drains, the material shall be covered with a tarp and surrounded with sand bags when rain is forecast.
- At the end of each working day roadways shall be cleaned and swept, and scrap, debris, and waste material shall be collected and disposed of properly.
- Vehicle or equipment cleaning shall be performed with water only and in a designated, bermed area that shall not allow rinse water to run off-site or into the creek.
- Maintenance and fueling of construction vehicles and equipment shall be performed in a designated, bermed area or over a drip pan that shall not allow run-on of stormwater or runoff of spills.

Implementation of the BMPs identified in **Mitigation Measure GEO-2** would reduce potential erosion impacts to a *less than significant* level.

- c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant with Mitigation Incorporated. According to Taber Consultants (2012), liquefaction, a secondary effect associated with seismic loading, is possible within the Project area due to the granular nature of the material. The potentially liquefiable material in the Project area is located above the elevation of the proposed new footings for the replacement structure and should largely be removed and replaced during new bridge construction in the immediate vicinity of the bridge. Preparation of a Project-specific Design Level Geotechnical Investigation, including implementation of measures identified to reduce liquefaction potential (**Mitigation Measure GEO-1**) would reduce potential liquefaction impacts to a *less than significant* level.

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

Less Than Significant with Mitigation Incorporated. Expansion and contraction of soils occur when soils undergo alternating cycles of wetting (swelling) and drying (shrinking) and are generally associated with clayey soils. During these cycles, the volume of the soil changes substantially. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during the construction process. The Huichica loam, 2 to 9 percent slopes (HtC) located within the Project site has a low to high shrink-swell potential. The soils within the

Project area have the potential for expansion; therefore, with implementation of BMPs identified in **Mitigation Measure GEO-1** this impact would be *less than significant*.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

No Impact. Construction and operational activities associated with the proposed Project would not generate wastewater that would require disposal. Septic tanks are not a component of the proposed Project. Therefore, implementation of the proposed Project would not result in impacts to soil associated with the use of such wastewater treatment systems. *No impact* would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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VII. GREENHOUSE GAS EMISSIONS

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

While emissions of criteria and toxic air pollutants have local or regional impacts, emissions of greenhouse gases (GHGs) that contribute to global climate change have a broader global impact. Global climate change is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth’s atmosphere. The primary GHGs contributing to global climate change are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space. The potential implications of global climate change are rising sea levels, and adverse impacts to water supply, water quality, agriculture, forestry and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, much of the GHG production is generated by motor vehicle usage. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning on the city, county and subregional level, and other measures to reduce automobile use. Energy conservation measures can contribute to reduction in GHG emissions as well.

The primary existing sources of human-caused GHGs in the Project area are emissions from vehicles traveling along Chase Street and other surrounding roadways.

The BAAQMD operational-related threshold of significance for GHG emissions is 1,100 metric tons per year. The proposed Project would not generate increased GHG emissions during its operation.

BAAQMD has not adopted thresholds of significance for construction-related GHG emissions. However, BAAQMD in its 2012 CEQA Guide suggests that the Lead Agency quantify and disclose GHG emissions that would occur during construction (BAAQMD 2012). For linear projects, BAAQMD recommends running the Roadway Construction Emissions Model (RoadMOD) to calculate construction emissions estimates. After quantifying GHG emissions from construction, BAAQMD suggests making a determination on the significance of these construction-generated GHG

emission impacts in relation to AB 32 GHG reduction goals. AB 32, the “Global Warming Solutions Act of 2006,” commits the State of California to reducing GHG emissions to 1990 levels by 2020.

Construction equipment used during the proposed Project would include an excavator, backhoe, hoe-ram, bobcat, loader, small crane, boom truck, dump truck, pickup truck, grader, concrete truck. Construction activities for the proposed Project are described in the Project description.

Discussion

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

Less Than Significant. GHG emissions associated with implementation of the proposed Project would occur over the short-term due to construction activities. Construction-related GHG emissions would primarily consist of exhaust from construction equipment.

Short-Term GHG Emissions. Demolition and construction at the Project site would produce combustion emissions from various sources. During site preparation, demolition and construction of the proposed Project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄ and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment. Exhaust emissions from on-site demolition and construction activities would vary daily as construction activity levels change.

The BAAQMD operational-related threshold of significance for GHG emissions is 1,100 metric tons per year.

RoadMOD inputs were used and customized for the proposed Project. Construction-related GHG emissions are estimated to be 113.13 metric tons for the total construction Project. Given the BAAQMD operational impact for GHG emissions is 1,100 metric tons per year, emissions from Project construction would not hinder the State’s implementation of AB 32 GHG reduction goals. Therefore, Project construction emissions would be considered a *less than significant* impact.

Long-Term GHG Emissions. The BAAQMD operational-related threshold of significance for GHG emissions is 1,100 metric tons per year. The proposed Project would not result in increased traffic volumes on Chase Street during Project operation; therefore, the proposed Project would not result in an increase in GHG emissions during operation. This impact would be *less than significant*.

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

Less Than Significant. The City of Sonoma is a member of the ICLEI – Local Governments for Sustainability¹, and in 2008 the ICLEI produced a report detailing the GHG emissions Reduction Action Plan Analysis (GHG Reduction Action Plan) for the City. The City has committed to five ICLEI milestones. As of the date of publication of this IS/MND, the City has completed Milestone 1,

¹ ICLEI originally stood for the “International Council for Local Environmental Initiatives”, but in 2003 the organization changed its name to “ICLEI-Local Governments for Sustainability”.

creating the GHG inventory, Milestone 2, setting a reduction target (reduce internal operations emissions to 20% below 2000 levels by 2020), and Milestone 3 creation of a plan to meet the target. In the GHG Reduction Action Plan, five measure-specific action plans were presented as a roadmap to reduce emissions by more than 20% in six sectors: streetlights, buildings, solid waste, wastewater, commute, and fleet. The proposed Project cannot be classified into one of the six emissions sectors identified in the GHG Reduction Action Plan. Operation and construction of the proposed Project would not conflict with the measures included in the GHG Reduction Action Plan. *No impact* would occur from operation of the proposed Project.

Construction was not identified as a sector in the GHG Reduction Action Plan. Construction-related GHG emissions are estimated to be 113.13 metric tons for the total construction of the proposed Project. The estimated construction-related GHG emissions are below the GHG construction emission threshold of 1,100 metric tons per year. Given the short-term, relatively minor amounts of GHG emissions from the proposed Project, a *less than significant* impact would occur in relation to AB 32 and the City of Sonoma applicable plans and policies related to GHG emissions.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Hazardous materials include all flammable, reactive, corrosive, or toxic substances which, because of these properties, pose potential harm to the public or environment. Hazardous materials such as agricultural chemicals, natural gas and petroleum, explosives, radioactive materials and various commercial chemical substances are used, stored, or produced in the City of Sonoma.

The Project site and nearby land uses are not located in an area that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. A search of the California State Water Resources Control Board (SWRCB) GeoTracker website (SWRCB 2014) indicates two leaking underground tank sites are located within 1,000 feet of the Project area: one case which has been remediated and closed and the other which is still being remediated.¹

Considering that the original bridge spanning Nathanson Creek on Chase Street was developed in 1910, the Project site may contain hazardous materials associated with the existing bridge (e.g., lead-based paint) and the existing roadway (i.e., aerially deposited lead).

Taber Consultants (2012) sampled and tested the paint used on the Chase Street Bridge as well as soils in the surrounding area for potential lead content. Taber Consultants collected four paint samples from the Chase Street Bridge (CSBP-1 through CSBP-4). The paint samples were analyzed for lead content using EPA Method 6010B. The results of the lead-based paint analysis are summarized in **Table F: Results of Lead-Based Paint Analysis for Chase Street Bridge Replacement Project**.

Table F: Results of Lead-Based Paint Analysis for Chase Street Bridge Replacement Project

Sample Location	Total Lead (mg/kg)	STLC ¹ Lead (mg/l)
CSBP-1	110	7.8
CSBP-2	85	6.0
CSBP-3	11	--
CSBP-4	120	2.6

Source: Taber Consultants, 2012

Note: ¹ Soluble Threshold Limit Concentration

The results of the paint sampling indicate that lead-based paint is present on the existing bridge structure.

Taber Consultants also sampled and analyzed the soil for potential lead content resulting from lead-based paint removal from and application to bridge surfaces during the lifetime of the bridge and from weathering of painted surfaces. Two soil samples (CSB-1 and CSB-2) were collected and

¹ California State Water Resources Control Board, GeoTracker, accessed July 22, 2014.
<http://geotracker.waterboards.ca.gov/>.

analyzed for lead content using EPA Method 6010B. The results of the soil analysis are summarized in **Table G: Results of Soil Analysis for Chase Street Bridge Replacement Project**.

Table G: Results of Soil Analysis for Chase Street Bridge Replacement Project

Sample Location	Total Lead (mg/kg)	pH
CSB-1	46	6.7
CSB-2	39	7.2

Source: Taber Consultants, 2012

If soil samples exceed total concentrations of 50 mg/kg of lead, the soil samples would require analysis using EPA Method 6010B for the Soluble Threshold Limit Concentration (STLC). Because neither of the soil samples exceeded the 50 mg/kg threshold, the secondary testing was not required.

Based on the “Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California Map” prepared by the U.S. Geologic Survey and California Geological Survey (2011), former asbestos mines/prospects, reported asbestos occurrences, asbestos-bearing deposits, reported fibrous minerals, and ultramafic rock in outcrops are not located in the vicinity of the proposed Project. The nearest occurrence shown on the map indicates that an ultramafic rock contained within an outcrop is located approximately 7.5 miles south-southwest of the Project area.

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

Less Than Significant with Mitigation Incorporated. The proposed Project involves the replacement of an existing, structurally deficient bridge on Chase Street. Operation of the proposed Project would not involve the routine transport, use or disposal of hazardous materials. *No impact* would occur from proposed Project operation.

Project construction is not expected to create a hazard to the public due to routine use of hazardous materials. Construction would require the use of heavy equipment and vehicles that use diesel fuel, gasoline, oil, and hydraulic fluid. Hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials.

Sampling and subsequent analysis was conducted to determine the presence of lead in the paint used on the existing bridge and in the surrounding soils. The results (shown in **Tables F and G**) indicate that lead is present in the paint used on the existing bridge structure but is not present at significant levels in the soils. Detected lead concentrations in the soil samples were below 50 mg/kg; therefore, the soils within the Project area are classified as non-hazardous by the California Department of Toxic Substances Control (DTSC), and no special handling is required.

Because lead paint is present on the existing bridge, special handling of painted materials would be required. This significant impact would be reduced to a *less than significant* level with the implementation of **Mitigation Measure HAZ-1**.

Mitigation Measure HAZ-1: Painted bridge materials shall be treated, removed and disposed of as hazardous waste in accordance with the Caltrans Standard Special Provisions for removal of lead paint Provision 14-11.08, Disturbance Of Existing Paint Systems On Bridges. A Lead Compliance Plan shall be prepared, approved, and implemented by the City as part of the construction phase of the proposed Project.

- b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less Than Significant with Mitigation Incorporated. After Project construction, the new bridge on Chase Street crossing Nathanson Creek would operate as under existing conditions; therefore, operation of the proposed Project would not create a significant hazard to the public or the environment.

Soils within the Project area were collected and analyzed for potential lead concentrations resulting from the long-term use of lead-based paint on the existing bridge. Detected levels of lead in the soil were below the established thresholds of 50 mg/kg, and therefore the soils are classified as non-hazardous.

Project construction would require the use of heavy equipment and vehicles that use diesel fuel, gasoline, oil, and hydraulic fluid. Hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials. The proposed Project would not be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code 65962.5.

The paint used on the existing bridge would require special handling because it contains lead-based paint. This significant impact would be reduced to a *less than significant* level with the implementation of **Mitigation Measure HAZ-1**.

Implementation of **Mitigation Measure HAZ-1** would ensure that a significant hazard to the public or environment would not occur from reasonably foreseeable upset and accident conditions involving the release of hazardous materials by the proposed Project. Impacts would be *less than significant*.

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

Less Than Significant. Sonoma Valley High School (located at 20000 Broadway, Sonoma) is located within 0.25 mile of the Project site. Sampling and analysis of the paint used on the existing bridge indicates the presence of lead in the paint. Painted materials would be treated as hazardous materials, and as such, implementation of **Mitigation Measure HAZ-1** would reduce this impact to a *less than significant* level.

- d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

No Impact. The Project site is not on or near a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, implementation of the

proposed Project would not create a significant hazard to the public or the environment. **No impact** would occur.

- 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 for people residing or working in the project area?*

Less Than Significant. In 2001, the Sonoma County Airport Land Use Commission adopted the *Comprehensive Airport Land Use Plan for Sonoma County*, which designates “airport referral areas.” Airport referral areas are areas designated “within which noise, airspace, or safety factors may affect land use compatibility” (Sonoma County 2001). The closest public airport to the proposed Project is the Sonoma Skypark, which is located approximately 2.0 miles southeast of the Project area. Because the Project area is located outside of the designated referral area for Sonoma Skypark and construction of the proposed Project would not result in a safety hazard due to the proximity of the airport, this impact would be **less than significant**.

- f) *For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. Aerial views of the Project site and surrounding areas were reviewed using Google Earth. The Project site is not located in the vicinity of a private airstrip. Implementation of the proposed Project would not result in a safety hazard for construction crews in association with private use airstrips. **No impact** would occur.

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

Less Than Significant. The 2009 City of Sonoma Emergency Operations Plan identifies procedures for the coordination of planned response to large-scale disasters. The Emergency Operations Plan describes emergency management organization, roles and responsibilities, and analyzes various hazard risks; however, the plan does not identify specific routes for emergency access or evacuation. Project construction would require a temporary closure of Chase Street, while construction staging onsite would minimize construction vehicle trips. Any temporary construction traffic would be in accordance with City standards and would not interfere with emergency access or evacuation in the area or with the City of Sonoma’s Emergency Operations Plan. This impact would be **less than significant**.

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

Less Than Significant. The proposed Project is located in a mature residential area within the City of Sonoma. The Association of Bay Area Governments (ABAG) maintains maps of wildland and urban interface fire risk. ABAG’s “Wildland Urban Interface – Fire Threatened Communities Map” identifies areas at risk of fire as “Community at Risk,” which are areas that have been identified for funding to reduce fire risk to communities. The Project area is located on land designated as “Community at Risk.” Although the proposed Project would involve construction activities and operation of equipment within a “Community at Risk”, the proposed Project would not include the development of structures or endanger the lives of residents or construction workers if a wildland fire were to occur. In the event that a fire were to occur in the Project area, the Sonoma Valley Fire and

Rescue Authority, which is responsible for fire protection within the City, is located 0.3 miles north-northwest of the Project area. Additionally, a fire hydrant is located approximately 180 feet west of the Chase Street Bridge. In the event of a fire emergency, the Sonoma Valley Fire and Rescue Authority would respond. This impact would be *less than significant*.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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IX. HYDROLOGY AND WATER QUALITY

Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| j) Inundation by seiche, tsunامي, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The Project site is located within the jurisdiction of the San Francisco Regional Water Quality Control Board (SFRWQCB); which is under the direction of the California State Water Resources Control Board. Under the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act, the SFRWQCB has regulatory responsibility for protecting water quality.

Regional Hydrology

The Sonoma Creek watershed is located in southeastern Sonoma County and comprises approximately 170 square miles, including the Project area. The central part of the Sonoma Creek watershed on the valley bottom is primarily urbanized, while the lower creek valley is primarily dedicated to agricultural production (Sonoma County 2006).

The Sonoma Creek watershed experiences flooding as a result of intense, short-duration rainfall occurring within a larger duration storm event. The primary flood problems in the area are caused by inadequate channel capacity to carry off flows from high intensity but short-duration storms. Flood problems are accentuated by encroachment of residential development on the channels.

The SFRWQCB has classified the Sonoma Creek watershed as an impaired water body due to sedimentation, nutrients, and pathogens. The development of vineyards on steep hillsides prior to the development of the County's vineyard erosion control regulations has been attributed as one of the major causes of erosion and sedimentation. Vineyard development on steep slopes and other related watershed management issues were evaluated and addressed in the Sonoma Creek Watershed Management Plan. The Southern Sonoma Resource Conservation District (RCD) and the Sonoma Ecology Center are currently implementing watershed management through educational and outreach programs with stakeholder groups, including the Sonoma Valley Vintners and Growers Alliance.

The Sonoma Creek watershed experiences elevated pathogen levels, which may be attributed to the expansion of wineries and the limitations in wastewater treatment plant capacity. Other watershed management issues include flooding, stream bank erosion, riparian and fisheries habitat enhancement, and the effect of water diversions and groundwater pumping for vineyard irrigation on summer flow in creeks.

Groundwater

In Sonoma County, rivers and stream corridors are important groundwater recharge areas. Groundwater is typically confined to geologic formations that are porous or have a water-holding capacity. Much of Sonoma County is underlain by hard bedrock with low porosity. In these areas, groundwater is often only contained in large fractures in the rock.

Groundwater is a vital source of water supply for both agricultural and urban uses in Sonoma County. Sonoma County has the second largest number of wells of any county in California (Sonoma County 2006). The quality and beneficial use of groundwater in some areas of the County has been affected by contamination from leaking underground storage tanks or other pollutant sources. Groundwater contributes an important portion of the water supply for the City of Sonoma.

Sonoma Valley Groundwater Subbasin

The Sonoma Valley Groundwater Subbasin is located in the southeastern corner of Sonoma County and encompasses the City of Sonoma. The subbasin, extending over an area of 70 square miles, is composed of late Tertiary to Quaternary age volcanic rocks and continental sedimentary deposits. Water-bearing units in the subbasin include Sonoma Volcanics, the Glen Ellen Formation, the Huichica Formation (located within the Project area), and alluvium. The heart of the subbasin, along the alluvial plain of Sonoma Creek and lower mud flats, is classified as Class I groundwater area. Sonoma, Schellville, and Valley of the Moon are located in the recharge area of the subbasin.

Floodplain. The Federal Emergency Management Agency (FEMA) has designated the Project area (shown on Map No. 06097C0937E) as follows:

- **Zone AE.** Zone AE indicates the floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the one percent annual chance flood can be carried without substantial increases in flood heights.

Discussion

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

Less Than Significant with Mitigation Incorporation. The proposed Project has the potential to result in temporary water quality impacts during the construction phase due to grading activities, dewatering, and removal of existing vegetation. Stormwater runoff may transport pollutants into nearby water resources such as Nathanson Creek. Sediments and other pollutants suspended in runoff could be carried downstream from the Project area, where if not controlled, could accumulate in downstream water courses (Sonoma Creek and San Pablo Bay) and potentially degrade existing surface water quality.

During Project construction access to the Nathanson Creek channel would be required in order to demolish the existing bridge and to construct the replacement bridge. Additionally, falsework (temporary support structure) would need to be erected across the Nathanson Creek channel between the new roadway embankments in order to construct the replacement bridge.

Potential short-term water quality impacts from construction-related activities at the Project site would be minimized and reduced through implementation of Best Management Practices (BMPs) and compliance with existing water quality regulatory requirements. Implementation of **Mitigation Measure GEO-2** would ensure that impacts on water quality during construction of the proposed Project would be reduced to a *less than significant* level.

Short-term impacts may occur with implementation of the proposed Project. The potential for accidental fuel/oil spills from construction equipment, erosion, and associated stormwater quality degradation may occur; however, implementation of **Mitigation Measure GEO-2** would reduce short-term impacts to water quality to a *less than significant* level.

Long-term water quality impacts usually occur due to changes in stormwater drainage or increases in impervious surfaces. The existing Project area contains 5,600 square feet of impervious surface. The proposed Project would result in a negligible increase in impervious surfaces (an increase of 1,500

square feet) and no changes in stormwater drainage features; therefore, increases in stormwater generation and flow are not expected to occur. As a result, the proposed Project would not result in a permanent increase in degradation of water quality. Operational impacts would be *less than significant*.

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

No Impact. During construction activity minimal amounts of water may be required for dust control activities. Water required during construction activities would be transported to the Project site by water trucks and stored in these trucks at the construction staging areas, as determined by the contractor. Groundwater supplies would not be substantially depleted nor would interference of groundwater recharge occur due to water usage during Project construction. Once operational, the proposed Project would not require the use of water. **No impact** would occur.

- c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

Less Than Significant with Mitigation Incorporated. Construction activities occurring on the Project site have the potential to temporarily alter the existing on and off-site drainage pattern. However, the drainage pattern of Nathanson Creek would not be impacted during construction. Diversion would pass water through the site and allow it to continue its natural course. The proposed Project would include placement of Rock Slope Protection (RSP) along both banks of the creek. The placement of the RSP would prevent future scouring of the channel and would incrementally reduce on or off-site erosion or siltation. Access to the creek bed would be required to remove the existing bridge and develop the new bridge; however, implementation of construction BMPs and **Mitigation Measure GEO-2** would ensure that the drainage pattern of Nathanson Creek remains intact and that substantial on or off-site erosion or siltation during construction does not occur. Once completed, the proposed Project would minimally increase impervious surfaces due to the improvement of the west and eastbound approaches to the newly developed Chase Street Bridge at Nathanson Creek. The proposed increase in impervious surfaces would not substantially alter the existing drainage pattern of the Project site or surrounding area resulting in substantial on or off-site erosion or siltation. Impacts under this criterion would be *less than significant* with implementation of the above identified mitigation measure.

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

Less Than Significant. Minor changes in the existing on and off-site drainage pattern may occur during Project construction. However, these changes would be minimal and would not result in on or off-site flooding. The proposed bridge replacement would be built in the same location, elevation, and alignment as the existing bridge deck. Once completed, the proposed Project would minimally increase impervious surfaces due to the improvement of the west and eastbound approaches to the newly developed Chase Street Bridge at Nathanson Creek. The proposed increase in impervious surfaces would not substantially alter the existing drainage pattern of the Project site or surrounding

area resulting in substantial on or off-site flooding. Impacts to the existing drainage pattern would be *less than significant*.

- e) *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?*

Less Than Significant with Mitigation Incorporated. Replacement of the existing bridge would not provide additional sources of runoff when compared with the existing bridge. The increase of impervious surface area resulting from construction of the new bridge and roadway approaches is not expected to contribute to a substantial increase in water runoff from the site. Water quality during Project construction would be protected through implementation of **Mitigation Measure GEO-2** and by adherence to construction provisions, precautions, and stipulations as described in the NPDES, Section 404, Section 401, and 1602 Streambed Alteration Agreement permits. Impacts would be *less than significant*.

- f) *Otherwise substantially degrade water quality?*

Less Than Significant with Mitigation Incorporated. See Section IX(a).

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

No Impact. Although the proposed Project area is located within a 100-year floodplain, no housing units are proposed as part of the proposed Project. *No impact* would occur.

- h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

Less Than Significant. During flooding events, the creek within the Project area has a recent history of overflowing the banks and flooding the residential area. FEMA mapping indicates that the bridge is within the 100-year floodplain. The proposed bridge would be designed to pass the 2% probability flood (50-year) with two feet of freeboard. Alternatively, the waterway area at the bridge crossing needs to be sufficient to pass the 1% probability flood (100-year) with no freeboard. The existing bridge does not meet the Caltrans criteria of passing the 2% probability flood (50-year) with adequate freeboard to accommodate the effect of bedload and debris. Because the proposed bridge would be designed in accordance with Caltrans standards, replacement of the Chase Street Bridge would not impede or redirect flows in Nathanson Creek during operation of the proposed Project. Impacts would be *less than significant*.

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

Less Than Significant. The proposed Project is not located below a levee or dam; however, the Project area is located within the 100-year floodplain. Replacement of the Chase Street Bridge would not result in drainage or flooding control impacts in Nathanson Creek during operation of the proposed Project, because the proposed bridge would be designed to pass the 2% probability flood (50-year) with two feet of freeboard. Alternatively, the waterway area at the bridge crossing needs to be sufficient to pass the 1% probability flood (100-year) with no freeboard. The existing bridge does not meet the Caltrans criteria of passing the 2% probability flood (50-year) with adequate freeboard to accommodate the effect of bedload and debris. Therefore, the proposed Project would not expose

people or structures to a significant risk of loss, injury or death involving flooding. Impacts would be *less than significant*.

j) *Inundation by seiche, tsunami, or mudflow?*

No Impact. According to the California Department of Conservation Sonoma County Tsunami Inundation Map, the Project site is not located in an area subject to tsunami inundation. The City of Sonoma 2020 General Plan Update Final EIR (2006) states that the City of Sonoma Sphere of Influence is not subject to seiche, tsunami or mudflow hazards. The proposed Project would not be inundated by seiche, tsunami or mudflow. Therefore, *no impact* would occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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X. LAND USE AND PLANNING

Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The proposed Project includes the removal of an existing bridge and development of a new bridge over Nathanson Creek along Chase Street in the City of Sonoma. Four residences are located adjacent to the existing creek crossing. The Project site is located within an established residential community. Adjacent homes were constructed between 1909 and 1953, with most of the homes in the community constructed between 1908 and 1924.

The Project site is located within the limits of the City of Sonoma. Chase Street and the bridge over Nathanson Creek are located within the City right-of-way and do not have land use and/or zoning designations. The properties surrounding the Project area have the following zoning and land use designations per the City of Sonoma:

- APNs 018-352-044; 018-412-029; and 018-352-038 – City of Sonoma General Plan Land Use Designation is Mixed Use and Zoned as Mixed Use;
- APN 018-412-002 – City of Sonoma General Plan Land Use Designation is Low Density Residential and Zoned as Low Density Residential.

The proposed Project is not located in an area that is designated under a habitat conservation plan or natural community conservation plan.

Discussion

a) *Physically divide an established community?*

Less than Significant. The proposed Project would replace an existing structurally deficient bridge with a new single-span bridge built on the same alignment. The Project site is located in a residential area surrounded by dwelling units. The Project site is located within an established residential community. Adjacent homes were constructed between 1908 and 1953, with most of the homes in the

community constructed between 1909 and 1924. The proposed Project would require the temporary closure of Chase Street due to bridge replacement. Road closure would be temporary, and the proposed Project would not involve elements that would divide the community. This impact would be *less than significant*.

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

Less Than Significant with Mitigation Incorporated. The proposed Project would not alter or conflict with existing land use designations or the City of Sonoma General Plan. Applicable General Plan policies include:

Goal ER-2 Identify, preserve and enhance important habitat areas and significant environmental resources.

- Policy 2.2 Preserve habitat that supports threatened, rare, or endangered species identified by State or federal agencies.
- Policy 2.3 Protect and, where necessary, enhance riparian corridors.
- Policy 2.4 Protect Sonoma Valley watershed resources, including surface and ground water supplies and quality.
- Policy 2.5 Require erosion control and soil conservation practices that support watershed protection.
- Policy 2.6 Preserve existing trees and plant new trees.
- Policy 2.9 Require development to avoid potential impacts to wildlife habitat, air quality, and other significant biological resources, or to adequately mitigate such impacts if avoidance is not feasible.

The proposed Project would support Goal ER-2, and implementation of **Mitigation Measures BIO-1, BIO-2, and BIO-3** would be necessary to preserve protected species and riparian corridors, protect water quality, and protect trees to ensure Project consistency with the policies listed above. This impact would be *less than significant*.

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

Less Than Significant with Mitigation Incorporated. Operation of the proposed Project would support Goal ER-2 and would be consistent with the above-listed policies. The proposed Project would not increase human disturbance of important habitat areas and significant environmental resources. The proposed Project would directly support Policy 2.3 because the proposed Project would enhance potential waters of the United States by increasing the streambed area approximately 105 square feet (0.002 acre). Construction of the new bridge would result in removal of the old in-channel abutments and wing walls that currently restrict the channel width under the bridge.

As discussed above, **Mitigation Measures BIO-1, BIO-2, and BIO-3** would be necessary to avoid potential adverse construction-related impacts to special-status species/migratory fish species, riparian habitat, existing trees, and to ensure compliance with the applicable habitat conservation goals and policies set forth in the City of Sonoma General Plan. Construction-related impacts would be *less than significant* with the implementation of the above-referenced mitigation measures.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XI. MINERAL RESOURCES

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel, and earth are also considered minerals by the California Department of Conservation when extracted by surface mining operations. According to the Sonoma County PRMD ActiveMap Interactive Mapping Application¹, the Project site is not located in a Mineral Resource zone.

- a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?*

No Impact. According to the Sonoma County PRMD ActiveMap Interactive Mapping Application the Project site is not located within a mineral resource zone nor is one located in the vicinity of the site. Therefore, the proposed Project would not result in loss of availability of a known mineral resource that would be of value. **No impact** would occur.

- b) *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

No Impact. As discussed above, the proposed Project is not located in an area of locally important mineral resource recovery sites. Implementation of the proposed Project would not result in the loss of locally important mineral resources. **No impact** would occur.

¹ Sonoma County PRMD. 2013. Sonoma County Permit and Resource Management Department ActiveMap. Accessed July 23, 2014.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XII. NOISE

Would the project result in:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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 expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The following information provides construction and operational noise information, groundborne vibration information, and information on sensitive receptors adjacent to the Project site.

Construction and Operational Noise

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological damage and/or interfere with communication, work, rest, recreation or sleep. Several noise measurements scales exist that are used to describe noise in a particular location. A *decibel* (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 measurement on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Noise level changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a

logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy while a 20 dB increase is 100 times more intense, and a 30 dB increase is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness to the human ear.

Sound intensity is normally measured through the *A-weighted sound level* (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The primary existing noise source in the Project vicinity is vehicular traffic along Chase Street and nearby Broadway, including cars, trucks, and motorcycles. The level of vehicular noise generally varies with the volume of traffic, the number of trucks or motorcycles, the speed of traffic, and the distance from the roadway. Chase Street is a residential roadway, therefore, traffic flows and noise related to traffic flows is minimal. Additionally some noise is generated by the residential dwellings located adjacent to the Project site in the form of daily household activities, including landscape maintenance, music, and domestic animal noises.

The proposed Project would include the demolition of an existing bridge, construction of a new bridge, and improvements to Chase Street at the westbound and eastbound approaches to the Nathanson Creek crossing. During demolition and construction activities at the Project site, construction equipment such as front-end loaders, hydraulic backhoes and haul/dump trucks would be expected to operate either at individual times or simultaneously. **Table H: Typical Construction Equipment Noise Levels** shows the operating noise levels of various types of construction equipment as measured from a distance of 50 feet. Anticipated equipment includes an excavator, backhoe, hoe-ram, bobcat, loader, small crane, boom truck, dump truck, pickup truck, grader, concrete truck, chainsaw, jack hammer, and other hand tools, tractor trailer rigs for material delivery.

Table H: Typical Construction Equipment Noise Levels

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Auger Drill Rig	No	85
Backhoe	No	85
Bar Bender	No	80
Blasting	Yes	80
Boring Jack Power Unit	No	94
Chain Saw	No	80
Clam Shovel (dropping)	Yes	85
Compactor (ground)	No	93
Compressor (air)	No	80
Concrete Batch Plant	No	80
Concrete Mixer Truck	No	83
Concrete Pump Truck	No	85
Concrete Saw	No	82
Crane	No	90
Dozer	No	85
Drill Rig Truck	No	85
Drum Mixer	No	84
Dump Truck	No	80
Excavator	No	84

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Flat Bed Truck	No	85
Front End Loader	No	84
Generator	No	80
Generator (< 25 kVA, VMS Signs)	No	82
Gradall	No	70
Grader	No	85
Grapple (on backhoe)	No	85
Horizontal Boring Hydraulic Jack	No	85
Hydra Break Ram	Yes	80
Impact Derive	Yes	90
Jackhammer	Yes	95
Man Lift	No	85
Mounted Impact Hammer (hoe ram)	Yes	85
Pavement Scarifier	No	90
Paver	No	85
Pickup Truck	No	85
Pneumatic Tools	No	55
Pumps	No	85
Refrigerator Unit	No	77
Rivit Buster/Chipping Gun	Yes	82
Rock Drill	No	85
Roller	No	85
Sand Blasting (single nozzle)	No	85
Scraper	No	85
Sheers (on backhoe)	No	85
Slurry Plant	No	85
Slurry Trench Machine	No	78
Soil Mix Drill Rig	No	82
Tractor	No	80
Vacuum Excavator (Vac-Truck)	No	84
Vacuum Street Sweeper	No	85
Ventilation Fan	No	80
Vibrating Hopper	No	85
Vibratory Concrete Mixer	No	85
Vibratory Pile Driver	No	80
Warning Horn	No	95
Welder/Torch	No	85

Source: FHWA, 2006. *Highway Construction Noise Handbook*, August.

Noise sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, churches, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds and parks are considered noise-sensitive uses. Sensitive receptors are located adjacent to the Project site. **Table I: Sensitive Receptors within the Vicinity of the Chase Street Bridge at Nathanson Creek** shows

the distance between the sensitive receptors and the closest area where construction activities would occur on the Project site.

Table I: Sensitive Receptors within the Vicinity of the Chase Street Bridge at Nathanson Creek

Sensitive Receptor ID	Sensitive Receptor Type	Distance of Sensitive Receptor from Closest Area of Project Construction (feet)
SR-1	Single Family Residential Unit	52
SR-2	Single Family Residential Unit	12
SR-3	Single Family Residential Unit	20
SR-4	Single Family Residential Unit	72
SR-5	Single Family Residential Unit	80
SR-6	Single Family Residential Unit	12
SR-7	Single Family Residential Unit	50

Source: LSA Associates, Inc. 2013

Project construction activities would generate noise that would affect sensitive receptors in the vicinity of the proposed Project. Noise in the City of Sonoma is regulated by noise standards established by the City Noise Ordinance (Sonoma Municipal Code, Chapter 9.56). The City Noise Ordinance establishes standards for general noise and construction noise, as discussed below.

General Noise

The City Noise Ordinance regulates acceptable general noise limits for varying property types. General Noise limits are provided in **Table J: City of Sonoma Noise Ordinance – General Noise Limits**:

Table J: City of Sonoma Noise Ordinance – General Noise Limits

Property Type or Zone	Daytime Limits	Nighttime Limits
Residential	60 dBA Intermittent 50 dBA Constant	50 dBA Intermittent 40 dBA Constant
Commercial/Mixed Use	65 dBA Intermittent 55 dBA Constant	65 DBA Intermittent 55 dBA Constant
Public Property	Most restrictive noise limit applicable to adjoining private property	

Source: City of Sonoma Noise Ordinance

Construction Noise

The City Noise Ordinance also regulates the hours of operation for construction activities, and the acceptable noise limits. These construction hours apply to construction alteration, demolition, maintenance of construction equipment, deliveries of materials or equipment or repair activities, except where granted an exception by permit. Construction noise level of a construction project at any

point outside of the property footprint is not to exceed 90 dBA. Construction hours are as shown in **Table K: City of Sonoma Noise Ordinance – Construction Limits.**

Table K: City of Sonoma Noise Ordinance – Construction Limits

Day of the Week	Construction Hours
Monday – Friday	8:00 a.m. – 6:00 p.m.
Saturday	9:00 a.m. – 6:00 p.m. ¹
Sunday and Holidays	10:00 a.m. – 6:00 p.m. ¹

Source: City of Sonoma Noise Ordinance

¹ Construction activities during the identified hours are with permission from the City.

Groundborne Vibration

Groundborne vibration can be a serious concern for residential areas and sensitive land uses. Some common sources of groundborne vibration include construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. Vibration is an oscillatory motion which can be described in terms of displacement, velocity, or acceleration. The response of humans, buildings, sensitive land use areas, and equipment vibration is more accurately described using velocity or acceleration. The Peak Particle Velocity (PPV) is used to describe construction-related vibrations. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration signal and is measured in inches/second. **Table L: Vibration Source Levels for Construction Equipment** provides typical vibration levels generated by operating construction equipment as measured 25 feet from proposed activity.

The City of Sonoma does not regulate vibration impacts from construction activity and thresholds are not discussed in the City of Sonoma General Plan or Code of Ordinances. For analysis purposes the Federal Transportation Administration criteria for groundborne vibrations affecting residential units would be implemented. Under this regulation residential units are not to be exposed to groundborne vibration levels exceeding 80 VdB during infrequent events (temporary construction activities).

Table L: Vibration Source Levels for Construction Equipment

Type of Equipment	PPV at 25 feet (inches/second)
Pile Driver (Impact)	0.644 to 1.518
Pile Driver (sonic)	0.170 to 0.734
Clam shovel drop (slurry wall)	0.202
Hydromill (slurry wall-in soil)	0.008
Hydromill (slurry wall-in rock)	0.017
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, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, Table 12-2, pg. 12-12.

Discussion

- a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant with Mitigation Incorporated. *Short-Term (Construction) Impacts.* During construction of the proposed Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Two types of short-term noise impacts would occur during Project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the Project site, which would incrementally raise noise levels on access roads leading to the Project site. The pieces of heavy equipment for grading, bridge demolition, and construction activities would be moved on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the Project vicinity. A high single-event noise exposure at a maximum level of 80 dBA L_{max} from dump trucks passing at 50 feet could occur in association with the proposed Project. However, the projected construction traffic would be minimal when compared to existing traffic volumes on Broadway and Chase Street, and its associated long-term noise level change would not be perceptible. Therefore, short-term construction-related commutes and equipment transport noise impacts would be *less than significant*.

The second type of short-term noise impact is related to noise generated during excavation, grading, and bridge demolition and construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the Project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation would allow construction-related noise ranges to be categorized by work phase. Table H lists construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a sensitive noise receptor.

Potential bridge construction areas are located as close as approximately 12 feet from the nearest sensitive receptor (single-family residential unit). See **Figure 4** for approximate locations of the sensitive receptors closest to the Project area. Backhoes, mobile cranes, dozers, excavators, graders and loaders would be used during Project construction. Due to the size of the Project site it is assumed that only three pieces of construction equipment would be operating simultaneously in the construction area. As seen in Table H, the maximum noise level generated by the loudest construction equipment that would be used is assumed to be approximately 85 dBA L_{max} each for a grader and backhoe under full operation when measured 50 feet away and 90 dBA L_{max} for a crane under full operation when measured 50 feet away. Each doubling of the sound source with equal strength increases the noise level by 3 dBA due to the logarithmic nature of the decibel scale. Each

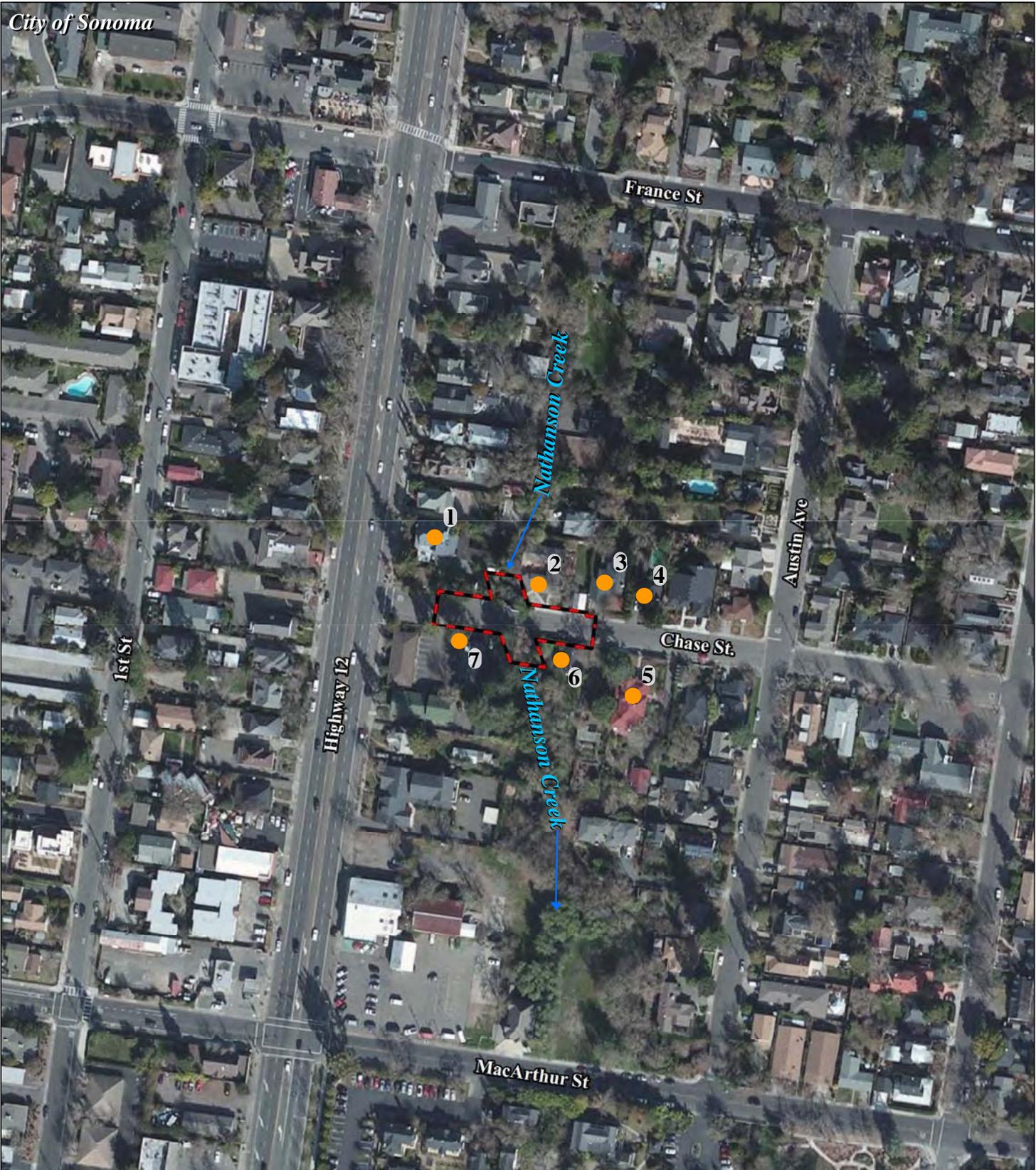
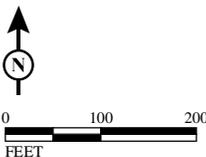


FIGURE 4



- LEGEND
- Project Location
 - Sensitive Receptors



SOURCE: Microsoft Bing Maps - Aerial (2010)
 E:\Qce1102\AI\Graphics\IS-MND\Figure 4.pdf

Chase Street Bridge Replacement Project
 Locations of Nearest Sensitive Receptors

piece of construction equipment operates as an individual point source. Assuming each of the three loudest pieces of construction equipment operate at some distance away from the other equipment, the predicted combined noise level during this phase of construction is 90 dBA L_{max} at a distance of 50 feet from an active construction area.

Table M: Estimated Construction Noise Levels at Closest Sensitive Receptors shows the estimated L_{max} noise levels at seven of the closest sensitive receptors during construction activities occurring on the Project site.

Table M: Estimated Construction Noise Levels at Closest Sensitive Receptors

Sensitive Receptor ID	Distance of Sensitive Receptor from Closest Area of Project Construction (feet)	Estimated Noise Levels at Sensitive Receptors during Project Construction (dBA L_{max})
SR-1	52	90
SR-2	12	102
SR-3	20	98
SR-4	72	87
SR-5	80	86
SR-6	12	102
SR-7	20	98

Source: LSA Associates, November 2013.

The closest sensitive receptors (SR-2 and SR-6) would be located approximately 12 feet from the nearest construction area on the Project site. At this distance, these sensitive receptors may be subject to short-term noise reaching 102 dBA L_{max} generated by construction activities. SR-3 and SR-7 would be approximately 20 feet away from the closest construction area on the Project site and thus may be subject to short-term noise reaching 98 dBA L_{max} . Projects involving capital improvement projects are exempt from the City’s Construction Noise Ordinance; and, therefore, noise levels estimated to occur during Project construction would not be subject to the City’s Construction Noise Ordinance standard.

To minimize the construction noise impact for the sensitive receptors adjacent to the Project site, construction noise is regulated by the California Department of Transportation (Caltrans) Standard Specification Section 14-8.02, “Noise Control,” and also by Caltrans Standard Special Provisions S5-310, “Noise Control.” These regulations state that noise levels generated during construction shall comply with applicable local, state, and federal regulations. The following measures would be implemented to reduce construction-related noise levels at the sensitive receptors closest to the Project site where construction activities would occur:

Mitigation Measure NOISE-1: During construction activities on the Project site the construction supervisor shall implement the following measures to reduce noise level exposure that would occur at the residential units to the northeast:

- The Contractor shall comply with all local sound control and noise level rules, regulations, and ordinances that apply to any work performed pursuant to the contract;
- Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without a muffler;
- Construction activity may occur Monday through Friday between 8:00 AM and 6:00 PM; with permission from the City on Saturday between 9:00 AM and 6:00 PM; and with permission from the City on Sundays and holidays between 10:00 AM and 6:00 PM. Night work is not permitted under the City of Sonoma Noise Ordinance. These requirements shall not relieve the Contractor from responsibility for complying with local ordinances regulating construction noise levels. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixers, or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel; and,
- If the City receives complaints regarding noise of construction activities, the construction contractor, as directed by Caltrans and the City, shall implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources if needed.

Long-Term (Operational) Impacts. As discussed above, the proposed Project would replace an existing bridge with a new bridge on Chase Street. Chase Street would remain a two-lane road outside and inside of the Project boundary; therefore, it is not anticipated that vehicular trips through the Project area would increase in the future. The proposed Project would not result in an increase in capacity and/or traffic upon completion and operation; therefore, long-term (operational) noise impacts would be *less than significant*.

b) *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*

Less Than Significant. The proposed Project would involve temporary sources of groundborne vibration and groundborne noise during construction from operation of heavy equipment. During Project construction, operation of heavy equipment would generate localized groundborne vibration and groundborne noise that could be perceptible at residences in the immediate vicinity of the construction site. However, since the duration of impact would be very brief and since the impact would occur during less sensitive daytime hours, the impact from construction-related groundborne vibration and groundborne noise would be *less than significant*.

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

Less Than Significant. As discussed above, the proposed Project would not increase or generate new vehicle trips along Chase Street. Therefore, during operation of the proposed Project roadway noise

emanating from Chase Street would remain the same as under existing conditions. Long-term (operational) noise impacts would be *less than significant*.

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

Less Than Significant with Mitigation Incorporated. Temporary intermittent noise associated with Project-related construction activities would occur. These activities would expose the sensitive receptors near the Project site to intermittent short-term increases in ambient noise levels. Implementation of **Mitigation Measure NOISE-1** would reduce the short-term noise exposure that the residential units adjacent to the Project site would experience during Project construction activities. Impacts would be *less than significant*.

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 expose people residing or working in the project area to excessive noise levels?*

Less Than Significant. In 2001, the Sonoma County Airport Land Use Commission adopted the Comprehensive Airport Land Use Plan for Sonoma County, which designates “airport referral areas.” Airport referral areas are designated as areas “within which noise, airspace, or safety factors may affect land use compatibility” (Sonoma County 2001). The closest airport to the Project area is the Sonoma Skypark, which is located approximately 2.0 miles southeast of the Project area. Because the Project area is located outside of the designated referral area for Sonoma Skypark and development of the proposed Project would not result in a safety hazard due to airport vicinity, this impact would be *less than significant*.

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. Aerial views of the Project site and surrounding areas were reviewed using Google Earth. The Project site is not located in the vicinity of a private airstrip. The proposed Project would not result in a safety hazard for construction crews in association with private use airstrips. *No impact* would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIII. POPULATION AND HOUSING

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The Project site is located in a residential neighborhood along Chase Street at the Nathanson Creek crossing. Residences are located within approximately 50 feet of the creek crossing. However, demolition of these residential units would not be required for implementation of the proposed Project.

Discussion

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

No Impact. The proposed Project would include the demolition of the existing bridge on Chase Street at the Nathanson Creek crossing, Chase Street improvements at the westbound and eastbound approaches, and development of a new bridge at the crossing. Once completed, the new bridge would not result in an increase in vehicle traffic volume which could indirectly induce substantial population growth in the area around the Project site. The nearest residential units are adjacent to the northwestern, northeastern, southeastern, and southwestern boundaries of the Project site. Implementation of the proposed Project would not induce direct population growth to the surrounding residential area. Therefore, the proposed Project would not directly or indirectly induce population growth. **No impact** would occur.

- b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact. Residential units are located to the northwest, northeast, southeast, and southwest of the proposed Project site. Implementation of the proposed Project would not displace these residential

units and construction of replacement housing elsewhere would not be required. *No impact* would occur.

c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact. As discussed above, residential units are located to the northwest, northeast, southeast, and southwest of the Project site. Implementation of the proposed Project would not displace residents living in these residential units. Therefore, implementation of the proposed Project would not displace substantial numbers or people, necessitating the construction of replacement housing elsewhere. *No impact* would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The Project site is located in a residential neighborhood in the City of Sonoma and is served by the following public services:

Fire Protection

The City of Sonoma is served by the Sonoma Valley Fire & Rescue Authority. The Sonoma Valley Fire & Rescue Authority operates out of four fire stations and provides firefighting capacity and ambulance service in the Sonoma community. The nearest station is located approximately 0.3 miles north-northwest of the Project area at 630 2nd Street W in Sonoma.

Law Enforcement

The City of Sonoma is served by the Sonoma Police Department. In addition to the regular law enforcement activities provided by the Sonoma Police Department, the Department also includes:

- Traffic Division (traffic safety enforcement)
- Animal Control
- School Resource Officer (promoting student safety)
- Sonoma Valley Youth and Family Services
- YWCA Domestic Violence Services
- Volunteers in Policing (trained volunteers acting as additional “eyes and ears” for the Department)

- Police Explorers (program for 15 to 20 year olds to learn about law enforcement)

Schools

The Project site is located within the boundary of the Sonoma Valley Unified School District. This district consists of five elementary schools, two middle schools, and two high schools, and two charter schools.

Parks

For a discussion on the environmental setting of parks and recreation in the City of Sonoma and near the Project site, see **Section XV Recreation**.

- a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection, police protection, schools, parks, other public facilities?*

No Impact. The proposed Project would include the demolition of an existing bridge on Chase Street at the Nathanson Creek crossing; Chase Street improvements on the westbound and eastbound approaches to the bridge; and installation of a new bridge across Nathanson Creek. The proposed Project would not increase demand for public services, nor degrade the quality of existing public services in the area. No parks, recreational facilities or other public facilities are located near the proposed Project; therefore, such public services would not be impacted by the proposed Project. Impacts to public services would not occur due to the proposed Project.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XV. RECREATION

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The City contains 95.7 acres of park and recreation facilities, ranging from active and passive parks, trails, and preserves (City of Sonoma 2006). The park facilities nearest to the Project area are the Plaza (approximately 0.4 miles north) and Pinelli Park (approximately 0.4 miles east-northeast). No park facilities occur within the Project area or its immediate vicinity.

- a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No Impact. The Project site is located in a residential neighborhood and is located approximately 0.4 miles from the nearest park facility. The proposed Project would replace a structurally deficient bridge with a new bridge at the crossing of Nathanson Creek along Chase Street and does not include residential units that would increase the use of existing neighborhood/regional parks or other recreational facilities. Therefore, implementation of the proposed Project would not increase the use of such facilities so that substantial deterioration of the facility would occur or be accelerated. **No impact** would occur.

- b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

No Impact. The proposed Project includes the replacement of an existing bridge and roadway approach improvements along Chase Street at the Nathanson Creek crossing. Recreational facilities would not be developed as part of the proposed Project nor would development of the proposed Project require the construction or expansion of such facilities. Therefore, implementation of the proposed Project would not include such facilities, which might have an adverse physical effect on the environment. **No impact** would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
--------------------------------------	--	------------------------------------	--------------

XVI. TRANSPORTATION/TRAFFIC

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Environmental Setting

The proposed Project is located on Chase Street between Broadway (SR-12) and Austin Avenue at the Nathanson Creek crossing. Chase Street is a residential roadway for which speed limits are 25 miles per hour (mph), but the speed limit on the bridge is posted at 15 mph for vehicles over two tons.

According to the Sonoma Bicycle & Pedestrian Master Plan the Project site is not located on a non-motorized transportation route (bicycle), bus transit service system route, or other transportation features.

The existing Chase Street Bridge was constructed in 1910 and was widened in 1990. Chase Street is two lanes in width in the vicinity of the Project area and narrows down to approximately two lanes

with no pedestrian facilities at the bridge crossing. The existing bridge is considered to be structurally deficient and has a recorded sufficiency rating of 23.1 which makes the bridge eligible for replacement under the Federal Highway Bridge Program (HBP). The replacement bridge would consist of a single span Cast-In-Place Concrete Slab. Work associated with the replacement of the existing bridge would include the reconstruction of the Chase Street approaches on each side of the bridge (west and eastbound approaches).

The proposed Project would include closure of Chase Street within the Project area during the construction phase.

Discussion

- a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

Less Than Significant. A small volume of traffic would be generated during construction of the proposed Project due to the increase in vehicle trips associated with construction equipment and trucks. However, the number of vehicles would be minimal (e.g., staging construction adjacent to the Project site would eliminate vehicle trips during construction) and the demolition/ construction period would be of a temporary duration. During construction, either the existing road must be closed or the replacement bridge construction must be staged in order to maintain traffic. Since the City streets are in a grid pattern with the required detour being only 0.5 miles, a complete closure of Chase Street in the Project area is the most feasible staging option at this location. Chase Street is a residential roadway, and vehicles utilizing the Project area are primarily associated with the residential use of the neighborhood. Because the proposed detour would be 0.5 miles, minimal delays in traffic would occur during demolition and construction of the proposed Project. Construction-related impacts to traffic and circulation along Chase Street and surrounding roadways would be ***less than significant***.

Once completed the proposed Project would not generate an increase in traffic volumes along Chase Street at the Nathanson Creek crossing. Although the proposed Project is approximately 0.05 miles east of the Broadway (SR-12)/Chase Street intersection, the proposed Project would not impact traffic volumes at this intersection. Operational-related impacts to traffic and circulation along Chase Street and surrounding roadways would be ***less than significant***.

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

Less Than Significant. As described above, construction activities associated with development of the proposed Project would generate an increase in vehicular traffic associated with construction trucks/equipment and personnel traveling to and from the Project site. However, the increase in traffic would be minimal during construction activities. Once completed, the proposed Project would not contribute to an increase in traffic on Chase Street because the proposed Project is a bridge replacement project. Therefore, the proposed Project would not result in an increase in Level of Service (LOS) standards established by the City of Sonoma. Impacts would be ***less than significant***.

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

No Impact. The proposed Project does not include the development of any tower or tall structures that would result in an alteration of air traffic patterns, including either an increase in air traffic levels or change in location that would result in substantial air safety risks. **No impact** would occur.

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

Less Than Significant. Development of the proposed Project over Nathanson Creek would utilize enhanced and updated design features that would reduce hazards (especially flooding) for vehicles traveling along Chase Street over the proposed bridge. The proposed Project would include roadway improvements on Chase Street at the western and eastern approaches of the proposed bridge, which would meet AASHTO standards for design speed and road/bridge width. Additionally, development of the proposed Project would result in increased clearance for creek flow, which would alleviate flooding potential. Implementation of the proposed Project would not substantially increase hazards due to design features or incompatible uses. This impact would be **less than significant**.

- e) *Result in inadequate emergency access?*

Less Than Significant. The 2009 City of Sonoma Emergency Operations Plan identifies procedures for the coordination of planned response to large-scale disasters. The Emergency Operations Plan describes emergency management organization, roles and responsibilities, and analyzes various hazard risks; however, the plan does not identify specific routes for emergency access or evacuation. Project construction may require a temporary closure of Chase Street; however, any temporary construction traffic would be in accordance with City standards. Project construction scheduling would be coordinated with emergency response personnel in advance, so as not to interfere with emergency access or evacuation in the area or conflict with the City of Sonoma's Emergency Operations Plan. This impact would be **less than significant**.

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

No Impact. The proposed Project is located in a residential area within the City of Sonoma. The Sonoma County Transportation Authority prepared the Sonoma Bicycle & Pedestrian Master Plan (2008), which identifies existing and proposed bicycle, pedestrian, and multimodal facilities throughout the City. The nearest alternative transportation route to the Project area is a proposed Class II bicycle facility along Broadway (SR-12, approximately 0.05 miles west of the Project area). No alternative transportation routes (existing or proposed) are located within the Project area. Therefore, the proposed Project would not conflict with such alternative transportation policies, plans or programs. **No impact** would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) Comply with federal, State, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The Project site is located in a residential neighborhood in the City of Sonoma. This setting describes the utility services (potable and non-potable water service, wastewater service, solid waste disposal service, and electric/natural gas service) that are located in the area of the Project site.

Potable and Non-Potable Water Service

The City of Sonoma purchases treated water from the Sonoma County Water Agency (SCWA). The SCWA draws water from gravel beds along the Russian River in the vicinity of Forestville. A system of City-owned groundwater wells provides a supplemental potable water source in the event that aqueduct deliveries are interrupted or are otherwise unable to meet demand.

Wastewater Service

The Sonoma County Water Agency provides wastewater treatment service to all lots within the City boundaries.

Solid Waste Disposal Service

Solid waste generated by the proposed Project during construction activities would be collected and transported to the Central Disposal Site, located at 500 Mecham Road in Petaluma, 15.8 miles west of the Project site. The Central Disposal Site is a Class III intake facility with a permitted capacity of 19,779,250 cubic yards. This landfill has an estimated remaining capacity of 9,470,629 cubic yards (as of March 1, 2005) and, therefore, is currently operating at approximately 52 percent of its capacity. The estimated closure year for the facility is 2034.¹ The Central Disposal Site is permitted to intake agricultural wastes, construction and demolition wastes, industrial waste, mixed municipal waste, sludge, tires and wood waste.

Electric and Natural Gas Service

Pacific Gas and Electric (PG&E) is the electric service provider in the City of Sonoma. The Project site is within the service boundary of PG&E for electrical and natural gas service.

One set of overhead utilities are located on the north side of the bridge within the Project boundary.

Discussion

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

No Impact. The proposed Project would not produce additional wastewater; and therefore would not result in impacts to wastewater treatment facilities.

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

No Impact. Please see Section XVII(a) above. Furthermore, the proposed Project would have no impact on water or wastewater treatment facilities.

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

Less Than Significant. The proposed Project would result in a minimal increase in the square footage of impervious surface in the form of a wider and longer bridge deck. No additional storm water drainage improvements are proposed due to the minimal increase in impervious surface. Minor modifications to existing drainage would not cause significant environmental effects. This impact would be *less than significant*.

¹ CalRecycle. 2013. Solid Waste Information System Facility/Site Listing. Accessed: September 10, 2013.

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

No Impact. The proposed Project would not require water service. *No impact* would occur.

- e) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

No Impact. The proposed Project would not produce wastewater; therefore, the proposed Project would not result in an impact to wastewater treatment capacity.

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

Less Than Significant. Solid waste generated by the proposed Project would be limited to construction debris, including asphalt and concrete, generated by the construction and removal of the old bridge. Solid waste disposal could occur at the Central Disposal Site in accordance with federal, state and local regulations. As of January 2012, the Central Disposal Site had an estimated closure year of 2034 (CalRecycle 2014). If disposal does not occur at the Central Disposal Site, disposal would occur at permitted landfills with sufficient capacity. Therefore, the proposed Project would not generate the need for a new solid waste facility and the proposed Project's impacts would be *less than significant*.

- g) *Comply with federal, State, and local statutes and regulations related to solid waste?*

Less Than Significant. The proposed Project would conform to all applicable local, state and federal solid waste regulations; therefore, the impact would be *less than significant*.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVIII.MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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.) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Environmental Setting

The Mandatory Findings of Significance section discusses the potential of the proposed Project to degrade the quality of the environment and any biological habitats. Impacts on a cumulative basis as well as the potential of the proposed Project to result in any environmental impacts which would cause substantial direct or indirect adverse impacts on human beings are also discussed.

- a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

Less Than Significant. As discussed throughout this checklist, the proposed Project has the potential to result in adverse physical effects on the environment; however, with the implementation of the proposed mitigation measures, the proposed Project is not expected to degrade the quality of the environment. Furthermore, the proposed Project is not expected to substantially reduce the habitat or affect populations of any fish or wildlife species (see Section IV) or eliminate important examples of the major period of California history or prehistory (see Section V). Full implementation of the proposed mitigation measures would result in a *less than significant* impact.

- b) *Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable*

when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant. The impacts of the proposed Project would be individually limited and would not be cumulatively considerable. The proposed Project would include the demolition of an existing bridge and development of a replacement bridge over Nathanson Creek along Chase Street. All environmental impacts that could occur as a result of the proposed Project would be reduced to a *less than significant* level with implementation of the mitigation measures recommended throughout this Initial Study. When viewed in conjunction with other closely related past, present or reasonably foreseeable future projects, development of the proposed Project would not cumulatively contribute to impacts.

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

Less Than Significant. The purpose of the proposed Project is to replace the existing Chase Street Bridge over Nathanson Creek with a bridge constructed to current standards and codes. The proposed Project would replace the existing bridge constructed in 1910 with a new bridge 53 feet wide and 30 feet long. Once completed, the new bridge would meet current design standards. As described in this Initial Study, implementation of the proposed Project could result in temporary air quality, biology, cultural, geology and soils, hazardous waste, hydrology, land use, and noise impacts as a result of development of the proposed Project. Implementation of the mitigation measures recommended in this Initial Study, compliance with City of Sonoma regulations, and application of standard construction practices would ensure that the proposed Project would not result in environmental impacts that would cause substantial direct or indirect adverse impacts on human beings.

3.0 REPORT PREPARERS

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APPENDIX A
NATURAL ENVIRONMENT STUDY & BIOLOGICAL ASSESSMENT

APPENDIX B
ARCHAEOLOGICAL SURVEY REPORT/HISTORIC PROPERTY
SURVEY REPORT

APPENDIX C
INITIAL SITE ASSESSMENT