State Route (SR 99) / Eaton Road Interchange Improvement Project

Butte County, California
District 3 – BUT – 99 (R36.09/R36.41)
EA: 03-1H5901 / Project No.: 0316000187
City Project No.: 13023

Initial Study with a Proposed Negative Declaration

PREPARED BY THE CITY OF CHICO AND CALIFORNIA DEPARTMENT OF TRANSPORTATION

CITY OF CHICO
INC. 1872

AUGUST 2019

Caltrans

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADL	Aerially Deposited Lead
AME	Avoidance and Minimization Effort
ASTM	American Society for Testing and Materials
ASR	Archaeological Survey Report
BCAQMD	Butte County Air Quality Management District
BMP	Best Management Practices
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRHR	California Register of Historical Resources
DOC	California Department of Conservation
ESA	Environmental Site Assessment
GHG	Greenhouse Gas
ICE	Intersection Control Evaluation
IS	Initial Study
LOS	Level of Service
MS4	Municipal Separate Storm Sewer System
MSDS	Material Safety Data Sheets
NAHC	Native American Heritage Commission
NCHRP	National Cooperative Highway Research Program
NCIC	North Central Information Center
NES-MI	Natural Environmental Study Minimal Impact
NPDES	National Pollution Discharge Elimination System
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TCR	Tribal Cultural Resource
VIA	Visual Impact Assessment

1 INTRODUCTION

1.1 Background

The proposed project would address safety concerns at two intersections in the City of Chico (City): State Route 99 (SR 99) North Bound (NB) On-Off Ramps / Eaton Road and Eaton Road / Hicks Lane. These improvements are identified as the SR 99 / Eaton Road Intersection Project (proposed project). The City proposes to convert these two intersections to a 5-leg roundabout.

1.2 California Environmental Quality Act Compliance

This Initial Study (IS) has been prepared to identify and assess the anticipated environmental impacts of the (proposed project). The City has found no substantial evidence that the proposed project would result in a significant environmental impact. Therefore, a Negative Declaration will be considered by the City. This document has been prepared to satisfy the California Environmental Quality Act (CEQA), (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.). CEQA serves as the main framework of environmental law and policy in California. CEQA emphasizes the need for public disclosure and identifying and preventing environmental damage associated with proposed projects. Unless the project is deemed categorically exempt, CEQA is applicable to any discretionary project that must be approved by a public agency in order to be processed and established. This project does not fall under any of the statutory or categorical exemptions listed in the 2018 CEQA Statute and Guidelines (California Public Resources Code, Section 21000 et seq.; 14 California Code of Regulations (CCR) 15000 et seq.), and, therefore, must meet CEQA requirements.

1.3 List of Discretionary Actions

Implementation of the proposed project will require the approval of the project design, approval of local funding, and the award of the construction contract.

The project will also require federal funding. Federal funding will require compliance with the National Environmental Policy Act (NEPA). The California Department of Transportation (Caltrans) is assigned to serve as the NEPA lead agency by the Federal Highways Administration.

The City will require Extra-Territorial Acquisition Authority from the Butte County Board of Supervisors prior to purchase of any right-of-way located within Butte County's jurisdiction.

1.4 Public Review Process

This IS and proposed Negative Declaration will be circulated for review by public agencies and the public for a minimum of 30 days. The comment period will be specified on the Notice of Intent to Adopt a Negative Declaration.

2 PROJECT DESCRIPTION

2.1 Project Purpose and Need

Need

Within the past five years, a high concentration of broadside and rear-end collisions have been recorded at the project site, including a fatality in 2012 (see the *SR 99/Eaton Road Intersection Control Evaluation (ICE) – Step I,* June 2018)). The frequent collisions may result from two characteristics of the intersections:

1. Insufficient spacing between the two intersections; and
2. Visual overload from too many regulatory signs at each approach.

In addition to the collision factors listed above, it appears that the inattention to speed by drivers approaching the intersection at Eaton Road from the SR-99 NB Off Ramp has a direct influence on the number of rear end collisions recorded at the intersection of SR 99 NB Ramps/Eaton Road.

Purpose

The primary purpose of the proposed project is to improve safety for all travel modes at the SR 99 NB ramp intersection and Hicks Lane intersection with Eaton Road. The secondary purpose of this project is to improve operations, reduce delay, and enhance mobility for all travel modes at the study intersections.

2.2 Project Location

The Eaton Road/SR 99 interchange is located in northwest Chico (see Figure 1). Chico is an incorporated city in Butte County, California.

2.3 Environmental Setting

SR 99 is a highway that spans the Central Valley, beginning at Wheeler Ridge near the Grapevine in Kern County and ending at Red Bluff in Tehama County. Eaton Road is an east/west arterial extending from the western city limits to approximately 3.6 miles east of the project site. Hicks Lane is a north/south collector extending from Eaton Road to Keefer Road.

As shown on Figure 2, the two existing intersections of SR 99 NB Ramps/Eaton Road and Eaton Road/Hicks Lane are closely spaced. There is a large drainage channel directly adjacent to the SR 99 NB on-ramp that is in the City right of way.

Land uses surrounding the interchange include residential and service commercial. A Comcast service center is located in the southeast quadrant of the interchange with a large parking lot fronting Eaton Road. Other service commercial uses are located south of Comcast, between the NB Off-Ramp and Silverbell Road. Pacific Supply, in the northeast quadrant, has its main access point on Hicks Lane directly north of Eaton Road. Single-family residential development dominates the northeast quadrant, including a large vacant parcel adjacent to the Eaton Road / Hicks intersection, currently owned by the City. The land uses immediately west of SR 99 include office, service commercial, and residential uses.

2.4 Project Characteristics

Project Design Alternatives

This study analyzes two alternatives. The first alternative (No-Build Alternative) assumes existing lane geometrics and intersection control. The second alternative (Roundabout Alternative) consists of a yield-control five-leg roundabout with modified lane geometrics. A Diverging Diamond interchange design alternative and a Traffic Signal Alternative were also considered as part of the ICE process but were ultimately rejected due to their inability to phase vehicular, pedestrian, and cyclist improvements without modifying the overcrossing.

No-Build Alternative

The No-Build Alternative leaves the existing lane geometrics and intersection controls in place. Under existing conditions, the intersection of SR 99 NB Ramps/Eaton Road is all-way stop controlled, and the intersection of Eaton Road/Hicks Lane is minor street stop controlled. These two intersections are spaced about 60 feet apart.

Roundabout Alternative

This alternative would replace the existing study intersections with a multi-lane roundabout designed to accommodate the Ultimate Design Year traffic forecast volumes. With this alternative, the SR 99 NB Ramps/Eaton Road and Eaton Road/Hicks Lane intersections would be combined into one five-leg roundabout. The Roundabout Alternative best achieves the primary project purpose (improve safety for all modes of travel), while addressing future mobility needs (see the *SR 99/Eaton Road Intersection Control Evaluation (ICE) – Step I*, June 2018).

2.5 Proposed Project

The proposed project would convert Eaton Road/SR 99 NB Ramps/Hicks Lane into one five-leg roundabout intersection (Figure 3). Although the two intersections would be combined, the local

circulation and access would remain unchanged. Intersection geometrics and pedestrian crossings are consistent with the National Cooperative Highway Research Program (NCHRP) Report 672 entitled "Roundabouts: An Information Guide, 2nd Edition" (Guide).

Eaton Road/SR 99 NB Ramps/Hicks Lane Intersection

A multi-lane roundabout with the lane geometry shown in Figure 3 would accommodate the Ultimate Design Year (Year 2040) traffic forecast volumes. The roundabout is centered on the NB Ramps intersection. The following provides further detail of the improvements at this intersection:

a) The NB off-ramp would be reconstructed to provide standard superelevation transitions and an acceptable alignment into the roundabout and flared to provide a two-lane entry into the roundabout that can accommodate the design vehicles.

b) The westbound approach would initially be striped as a one-lane approach with the ability to be re-striped to accommodate two lanes in the Ultimate Design Year if necessary. Truck blisters (or aprons) are shown for right-turn movements to and from Hicks Lane. The drainage channel in the northern corner would need to be modified to accommodate the larger intersection footprint.

c) The NB off ramp would be realigned to accommodate the roundabout geometrics and grade changes.

Pedestrian and Bicycle Safety

There would be a 10-foot shared-use path shown on the southern side of the roundabout intersection buffered by at least 2 feet of landscaping from the roadway or by a barrier at the overcrossing. In addition, there would be a pedestrian and bicycle connection from the roundabout intersection to Silverbell Road in order to match the Chico Bicycle Plan 2019 Update. Pedestrian crossings are shown a minimum of one car length from the circulatory roadway, and the pedestrian refuges at the splitter islands are at least 6 feet wide, which are consistent with National Cooperative Highway Research Program (NCHRP) Report 672 entitled "Roundabouts: An Information Guide, 2nd Edition" (Guide). The shared-use path conveys both pedestrian and bicycle traffic through the intersection. The path provides the opportunity for cyclists to exit the bicycle lane via a bicycle ramp and navigate the intersection on the shared-use path and through the crosswalks. As an alternative to taking the shared-use path, cyclists are also given an option to exit the bicycle lane and enter the roadway to ride with vehicle traffic through the roundabout. Crosswalks are split into two separate crossings through the provision of pedestrian refuges at the splitter islands. These two-stage crossings reduce the amount of sustained time a pedestrian is in

potential conflict with motorized vehicles by limiting the length of each crossing and limiting each crossing to one direction of vehicle travel at a time.

Reduced Speed Potential

Typically, the roundabout geometric design requires the driver to reduce the speed in the intersection to 15-25 MPH. Conversely, drivers can travel through a signalized intersection at speeds higher than posted speed limits due to lack of geometric constraints. Due to reduced travel speeds through the intersection and expected reduction in crashes, the roundabout alternative is likely to eliminate most severe crash types.

Right of Way

Additional right of way would be required at the southeast quadrant of SR 99 and Eaton Road. The affected properties include the Comcast Service Center, the Production Credit Association, and Precision Auto Repair. The acquisition would primarily affect landscaping and would not result in the removal of any buildings. The Comcast Service Center may have a net reduction in parking spaces.

Utilities

Adjustment of utility vaults to match the final pavement surface elevation would be required along Eaton Road. All other existing utilities would be protected in place, including the joint overhead line that crosses Eaton Road on the eastern end of the project.

Landscaping

The project will incorporate landscaping, including a landscape buffer on the southern side of the roundabout to separate the shared youth path. The center of the roundabout may also incorporate landscaping and/or public art. Landscaping features, including the type and location of replacement trees, will be finalized based on discussions with property owners adjacent to the project.

Construction

Construction is anticipated to begin in 2020. Construction would be phased in order to maintain local access to SR 99 and to the properties adjacent to Eaton Road and Hicks Lane. Staging would occur within the SR 99 right of way, west of the SR 99 NB Off-Ramp and/or the vacant City-owned parcel at the northeast corner of Hicks Lane and Eaton Road. A temporary access road may be located on the vacant parcel at Hicks Lane/Eaton Road.

Depth of Disturbance

Excavation would be required throughout the project in order to construct landscaping and drainage facilities, which require trenching, placement of pipe, drainage structures, landscaping, irrigation, and backfill totaling 6 feet in depth. A maximum excavation depth of 25 feet would be required to install overhead signing along the Off Ramp.

Avoidance and Minimization Efforts (AME)

The project specifications will include measures to ensure compliance with local, state, and federal environmental regulations during construction. The Avoidance and Minimization Efforts (AMEs) are listed below.

AME-1

If work activities are to be conducted during the nesting bird season (February 1 – August 31), a nesting bird survey will be completed by a qualified biologist no earlier than 2 weeks before construction to determine if any native birds are nesting within or in the vicinity of the project area (including a 200-foot buffer for raptors and a ½ mile buffer for Swainson's hawk). The survey will include a thorough search of all trees, power poles, cavities, buildings, and vegetation for active nests in the proposed disturbance area, while also noting any incidental avian sightings. Surveys shall not be conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather that individually or collectively reduces the likelihood of detection. If any passerine or large stick nests are discovered, it will be determined whether they are actively being used or not.

If any active nests are observed during surveys, a suitable avoidance buffer from the nests will be determined by the qualified biologist based on species, location, and extent and type of planned construction activity. These nests will be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Should an active Swainson's hawk nest occur in the vicinity of the project area, consultation with CDFW might be required to determine an appropriate buffer to avoid impacts to the nest.

AME-2

Per Caltrans policy, if previously unidentified cultural materials are unearthed, a qualified archaeologist will assess the significance of the find. It should be further noted, additional archaeological surveying would be needed if project limits were extended beyond the present survey limits.

AME-3

In the event human remains are discovered, work shall cease and the County Coroner will be notified immediately. No further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

3 INITIAL STUDY CHECKLIST

1. Project title:

SR 99 / Eaton Road Intersection Project

City of Chico Capital Project Number 13023

2. Lead agency name and address:

City of Chico
411 Main Street, 2nd Floor
Chico, California 95928

Mailing Address:

City of Chico
Public Works – Engineering
PO Box 3420
Chico, CA 95927

3. Contact person and phone number:

Tracy R. Bettencourt – MPA, AICP
Phone: (530) 879-6903

4. Project location:

SR 99 NB Ramps/Eaton Road and Eaton Road/Hicks Lane in northwestern Chico, California.

5. Project sponsor's name and address:

City of Chico
Public Works - Engineering
411 Main Street, 2nd Floor
Chico, California 95928

6. General plan designation:

The project site is an existing roadway. General Plan land use designations adjoining the project area include Commercial Services (CS), Public Facilities & Services (PF&S), Very Low Density Residential (VLDR), and Low Density Residential (LDR) land use designations.

7. Zoning:

The project site is an existing roadway. The proposed project area zoning is Public Quasi Public Facilities (PQ), Services Commercial (CS), Suburban Residential (RS-20), and Low Density Residential (R1).

8. Description of project:

The proposed project would address safety concerns at two intersections in the City of Chico (City): State Route 99 (SR 99) North Bound On-Off Ramps / Eaton Road and Eaton Road / Hicks Lane. The City proposes to convert these two intersections to a 5-leg roundabout. See Section 2.4 for further description of the project.

9. Surrounding land uses and setting (Briefly describe the project's surroundings):

Land uses surrounding the interchange include residential and service commercial. A Comcast service center is located in the southeast quadrant of the interchange with a large parking lot fronting Eaton Road. Other service commercial uses are located south of Comcast, between the NB Off-Ramp and Silverbell Road. Pacific Supply, in the northeast quadrant, has its main access point on Hicks Lane directly north of Eaton Road. Single-family residential development dominates the northeast quadrant, including a large vacant parcel adjacent to the Eaton Road / Hicks intersection, currently owned by the City. The land uses immediately west of SR 99 include office, service commercial, and residential uses.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

The project will require federal funding through the Highway Safety Improvement Program (HSIP). Approval of HSIP funds requires compliance with the National Environmental Policy Act (NEPA). The California Department of Transportation (Caltrans) is assigned to serve as the NEPA lead agency through a memorandum of

understanding with the Federal Highway Administration. Caltrans will also issue encroachment permits for work within the state right of way.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

The City contacted the Mechoopda Indian Tribe of Chico Rancheria (Tribe), per the 2008 Memorandum of Understanding between the Tribe and the City. The Tribe did not identify any potential tribal cultural resources or request consultation. No other California Native American tribes have requested notification of proposed projects per the requirements of Assembly Bill 52 (AB 52).

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 14 for additional information.

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

DETERMINATION:

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Tracy R Bettencourt 8/22/19

Tracy R. Bettencourt – MPA, AICP, Regulatory and Grants Manager Date
(for Brendan Vieg, Deputy Community Development Director)

EVALUATION OF ENVIRONMENTAL IMPACTS:

This checklist identifies environmental factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	AESTHETICS – Except as provided in Public Resources Code section 21099, would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1 Aesthetics

a) Would the project have a substantial adverse effect on a scenic vista?

The City of Chico does not identify any scenic vistas within the City. The project site is located in an urbanized area with existing roadways, ruderal vegetation, and residential and service commercial uses. There are no scenic vistas located in the vicinity of the proposed project. The project would convert Eaton Road/SR 99 NB Ramps/Hicks Lane into one multi-lane roundabout intersection. The project would not construct any buildings or structures that would block long-range views or interfere with scenic vistas. Therefore, impacts would be no impacts to scenic vistas.

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

There are no officially designated state scenic highways in Butte County (DOT 2019). Furthermore, SR 99 and Eaton Road are not identified in the 2011 City of Chico's General Plan, Community Design Element as being a scenic roadway (City of Chico 2017). As the project site is not located within a state scenic highway, and would not damage scenic resources within a state scenic highway, no impact would occur.

c) Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

A Visual Impact Assessment (VIA) memorandum was prepared for the proposed project on December 15, 2018 to identify potential visual impacts related to the project. The memorandum included a questionnaire that addresses the anticipated visual changes to the project area. Because the proposed project would involve a transportation improvement in an already disturbed, ruderal area to a freeway on- and off-ramp that is being used for similar purposes, the project is not anticipated to have a significant effect on the visual character or quality of the area. The proposed project would not conflict with applicable zoning or other regulations governing scenic quality. The project area is zoned Public Quasi Public Facilities (PQ), Services Commercial (CS), Suburban Residential (RS-20), and Low Density Residential (R1). These zoning districts do not have specific requirements regarding transportation infrastructure. As the proposed project would complement the visual character and quality desired by the community, there would be no impact.

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

The proposed project would involve construction of a multi-lane roundabout. New street lighting for the roundabout intersection may be installed. Any new or replacement lighting would be downward, shielded lighting fixtures that would be designed to enhance safety and minimize excess light or glare. Lighting and glare impacts would be less than significant.

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

3.2 Agriculture and Forestry Resources

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The California Department of Conservation (DOC) prepares maps that classify lands into categories based on their suitability for agriculture. The project site is designated by the DOC as Urban and Built-Up Land, which refers to land that is occupied by structures with a building density of at least one unit to 1.5 acres, or six structures to a 10-acre parcel, or

land zoned for urban uses. The nearest farmland to the project site is a parcel designated as Grazing Land by the DOC, located approximately 0.4 mile north of the project site near DeGarmo Park (DOC 2017). Because the project is located in an area designated as Urban and Built-Up Land, the project would not convert Farmland to non-agricultural use. No impact would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The California Land Conservation Act of 1965 (Williamson Act) covers parcels of land where agricultural lands are preserved and local guidance, such as general plans, further plans for the preservation and use of designated agricultural lands. The project site is located within an urbanized area that is not under active crop cultivation or used for livestock grazing. There are no lands zoned for agricultural use or under Williamson Act contract within the vicinity of the proposed project. As a result, no conflicts with existing zoning for an agricultural use or conflicts with a Williamson Act contract would result with project implementation, and no impact would occur.

c) Would the project 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))?

"Forest land" is defined in California PRC Section 12220(g) as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The project would be located in an urbanized area consisting of roadways and residential and service commercial uses. There are no lands zoned for forest land or timberland on or in the vicinity of the proposed project. Thus, there is no potential for conflict with California PRC, Section 12220(g) or Section 51104(g), and no impacts would result from proposed project construction or operation.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The proposed project would convert two intersections in a developed area into a multi-lane roundabout. There is no forest land on or within the vicinity of the project site. Therefore,

the proposed project would not result in the loss of forest land or conversion of forest land to a non-forest use. No impact would occur.

e) Would the project 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?

As previously discussed in Sections 3.2(a) and 3.2(b), the proposed project is not located on land used for agricultural purposes or zoned for agriculture purposes. The proposed project is not located on or adjacent to existing agricultural land or forest land. Thus, the proposed project would not result in a loss or conversion of agricultural land to non-agricultural use or forest land into non-forest use during construction or operation. No impact would occur.

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

3.3 Air Quality

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The proposed project is located within the Northern Sacramento Valley Air Basin (Air Basin), in the jurisdiction of the Butte County Air Quality Management District (BCAQMD). The project is included in the Regional Transportation Plan (RTP) and 2017 Federal Transportation Improvement Plan (FTIP). The RTP and FTIP must demonstrate conformity with the State Implementation Plan (SIP) per the Clean Air Act. The project would therefore not conflict with the SIP. Construction emissions resulting from the proposed project would not substantially increase air pollutant emissions within the Air Basin, and would not conflict with BCAQMD plans, as explained in further detail below. Based on the above considerations, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan during construction or operation, and no impact would occur.

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

As shown in Table 3.3-1, below, Butte County is designated as a nonattainment area for both federal and state ozone standards. The EPA has classified Butte County as a "marginal" nonattainment area for the 8-hour ozone standard. In addition, Butte County is designated as a nonattainment area for the state PM10 and PM2.5 standards. On August 10, 2018, Chico, was redesignated to maintenance status for the federal 24-hour PM2.5 standard. Butte County is in attainment or unclassified for all other criteria air pollutants.

Table 3.3-1. Project Area Attainment Status

Criteria Pollutant	State Designation	Federal Designation
1-hr ozone	Non-attainment	N/A
8-hr ozone	Non-attainment	Non-attainment
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Attainment
Sulfur dioxide	Attainment	Attainment
24-hr PM10	Non-attainment	Attainment
24-hr PM2.5	No Standard	Attainment/Maintenance
Annual PM10	Attainment	No Standard
Annual PM2.5	Non-attainment	Attainment

Source: Butte County AQMD, 2018.

The proposed project would replace two intersections with a 5-leg roundabout. The project would not substantially increase traffic volumes and is intended to improve operations, reduce delay, and enhance mobility. Therefore, the proposed project is not expected to result in a cumulatively considerable net increase of any criteria pollutant during project operation.

Fugitive dust emissions are primarily associated with site preparation during construction and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site. ROG and NO_x are primarily associated with off-road equipment and on-road vehicle exhaust. Short-term construction criteria air pollutant emissions were estimated using the California Emissions Estimator Model (CalEEMod). Table 3.3-2, below, presents daily construction-related emissions from the proposed project and compares them to the emission thresholds recommended by BCAQMD. Complete assumptions and calculations are presented in Appendix B.

Table 3.3-2. Daily Construction-Related Emissions

Year	ROG	NO_X	CO	SO_2	PM_{10} Total	$PM_{2.5}$ Total
	Pounds per Day					
2020	2.09	22.30	11.11	0.02	3.90	2.18
BCAQMD threshold (lbs/day)	*137*	*137*	*NA*	*NA*	*80*	*NA*
Exceedance of threshold?	*No*	*No*	*NA*	*NA*	*No*	*NA*

Source: See Appendix A for detailed results.
Notes: Values shown are the maximum summer or winter daily emissions results from CalEEMod. These estimates reflect implementation of BCAQMD fugitive dust best control practices. BCAQMD has adopted construction thresholds for ROG, NO_x, and PM_{10}.
CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SO_2 = sulfur dioxide

As can be seen in Table 3.3-2, project construction emissions would be well below the daily thresholds recommended by BCAQMD. Where recommended thresholds have not been established by BCAQMD, including CO, SO_2, and $PM_{2.5}$, the emission levels are minimal, and these pollutants are in attainment or maintenance status. In addition, the project must comply with BCAQMD Rule 205 for fugitive dust control. Therefore, the project would not contribute to a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment, and impacts would be less than significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as facilities or land uses that include people who are particularly susceptible to the effects of air pollution (e.g., children, the elderly, and people with illnesses). Schools, hospitals, and residential areas are examples of sensitive receptors. The land uses adjacent to the project site are primarily commercial. Sensitive receptors within 1,000 feet of the project site include single-family and multi-family residences. In addition, there is a medical office building within 100 feet of the project site (located on Independence Circle west of SR 99)

Emissions associated with the project would be limited to short-term emissions from on-site earthwork, entrained dust, and internal combustion engines used by on-site construction equipment and from off-site worker vehicles and truck trips during project construction. As shown in Table 3.3-2, the project emissions would not exceed any recommended thresholds for air pollutants. In addition, the project would comply with BCAQMD Rule 202, Particulate Matter Concentration, which sets forth limits on source particulate matter emissions, and BCAQMD Rule 205, Fugitive Dust Emissions, which limits fugitive emissions of PM_{10} from construction activities. Additionally, the project would comply with BCAQMD Rule 201, Visible Emissions, which regulates discharge of visible emissions, and BCAQMD Rule 200, Nuisance, which prohibits discharge of air contaminants that result in injury, detriment, nuisance, or annoyance to a considerable number of people, the public, or to a business or property. Emissions from project construction are temporary and neither construction nor operational emissions would reach a level of significance. Construction and operational emissions would not generate an ongoing, substantial source of emissions that could adversely affect surrounding receptors. As the project would adhere to all applicable policies and standards related to air pollutant emissions and would generate minimal air pollutants during project construction and operation, impacts would be less than significant.

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

Typical sources of odor include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. Typical odor nuisances are associated with hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. An additional potential source of project-related odor is diesel engine emissions. The proposed project would not include uses that are considered potential sources of objectionable odors. Asphalt paving may produce short-term odors during construction. The project would not cause an increase in the number of diesel-engine

trucks. As previously described, residences are located adjacent to most of the project routes. However, because few sources of odor would exist and activities would be short term, there would be less-than-significant impacts attributable to odor during construction or operation.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4 Biological Resources

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

A Natural Environment Study Minimal Impact (NES-MI) (Appendix B) was prepared for the proposed project in January 2019 to determine the potential for the project to impact biological resources. The study included an assessment of special-status species and their habitat within the project area. The California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) electronic database, and the official U.S. Fish and Wildlife Service species list were reviewed as part of the NES-MI to determine the occurrence or potential occurrence of special-status plant or wildlife species, and natural communities of special concern on or within the Richardson Springs USGS quadrangle and eight surrounding quadrangles. The NES-MI found that all but one of the special-status wildlife and plant species are not expected to occur in the project vicinity due to a lack of suitable habitat within the project area, or the project area is outside of the species known range. Swainson's hawk is the only special-status wildlife species that has some potential to occur within or adjacent to the project site. Mature trees within and adjacent to the project area provide suitable nesting habitat for Swainson's hawk, and/or nesting and foraging habitat for several common avian species such as red-tailed hawk and American robin. All native bird nests in California are protected by the federal Migratory Bird Treaty Act. No raptors or raptor nests were observed in mature trees within and adjacent to the project site during the biological survey. Although the NES-MI states that the probability of encountering Swainson's hawk is low, there is still the potential to impact this species due to project noise, tree removal, and increased levels of human disturbance and equipment that could lead to nest abandonment or take of individual eggs or chicks. Additionally, native migratory birds have the potential to utilize trees, shrubs, and man-made structures such as buildings and bridges near the project site for nesting and foraging. The project could potentially impact nesting birds in the form of take of eggs or chicks, destruction of active nests due to vegetation removal, or abandonment of nests due to increased noise in the vicinity of the project area during construction. Although this impact is unlikely, the potential effects could be significant if it resulted in unauthorized take of a protected bird species. The project specifications shall include a standard avoidance and minimization effort (AME) for nesting birds.

AME-1

If work activities are to be conducted during the nesting bird season (February 1 – August 31), a nesting bird survey will be completed by a qualified biologist no earlier than 2 weeks before construction to determine if any native birds are nesting within or in the vicinity of the project area (including a 200-foot buffer for raptors and a ½ mile buffer for Swainson's hawk). The survey will include a thorough search of all trees, power poles, cavities, buildings, and vegetation for active nests in the proposed disturbance area, while also noting any incidental avian sightings. Surveys shall not be conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather that individually or collectively reduces the likelihood of detection. If any passerine or large stick nests are discovered, it will be determined whether they are actively being used or not.

If any active nests are observed during surveys, a suitable avoidance buffer from the nests will be determined by the qualified biologist based on species, location, and extent and type of planned construction activity. These nests will be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Should an active Swainson's hawk nest occur in the vicinity of the project area, consultation with CDFW might be required to determine an appropriate buffer to avoid impacts to the nest.

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

The NES-MI prepared for the proposed project found that vegetation communities within the project area include annual grassland and developed/disturbed land. Non-native annual grassland is located between the on- and off-ramps and SR 99. These areas are regularly mowed and are scattered with mature trees, mostly valley oak (*Quercus lobata*), ornamental pines (*Pinus* sp.), and deciduous ornamental species such as Chinese pistache (*Pistacia chinensis*). The remainder of the project area contains developed/disturbed habitat subject to regular maintenance and high levels of human disturbance. Because the project area consists of a developed environment, with vegetation that consists of ornamental plantings, disturbed non-native grassland habitat, and ruderal vegetation that is regularly managed by mowing or influenced by human use, the project would not have a substantial effect on any sensitive natural community, and there would be no impact.

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

There are two drainage features in the project area. The drainage that runs parallel to the eastern side of the SR 99 NB off-ramp at Eaton Road, which lacks a defined bed and bank, drains surrounding upland habitat and terminates into a storm drain; therefore, it is unlikely that this feature is considered jurisdictional by ACOE, RWQCB or CDFW. The flood control drainage that runs along the east side of the SR 99 NB on-ramp and continues on the west side of Hicks Lane is also unlikely to qualify as jurisdictional because it: 1) lacks a defined bed and bank, 2) does not support riparian plant species, fish or other aquatic wildlife, 3) is generally dominated by weedy species, 4) only contains surface water during run-off events, and 5) does not flow into a natural waterway. Therefore, there are no state or federally protected wetlands that could be affected by the project.

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

Wildlife corridors are landscape features, usually linear in shape, that facilitate the movement of animals (or plants) over time between two or more patches of otherwise disjunct habitat. Corridors can be small and even man made (e.g., highway underpasses, culverts, bridges), narrow linear habitat areas (e.g., riparian strips, hedgerows), or wider landscape-level extensions of habitat that ultimately connect even larger core habitat areas. Depending on the size and extent, wildlife corridors can be used during animal migration, foraging events, and juvenile dispersal, and ultimately serve to facilitate genetic exchange between core populations, provide avenues for plant seed dispersal, enable increased biodiversity and maintenance of ecosystem integrity within habitat patches, and help offset the negative impacts of habitat fragmentation. The project area does not serve as a wildlife corridor because it does not act as a link between two or more patches of otherwise disjunct habitat, and the site and surrounding area is urbanized and developed. Therefore, the project would not interfere with the movement of wildlife or wildlife corridors or nursery sites. There would be no impact.

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

Chapter 14.40 of the City's Municipal Code (Tree Law) includes regulations governing the planting, removal, and maintenance of street trees within the City by private development.

The City's Tree Law requires that no City trees or shrubs be planted or removed unless a permit is acquired. Replanting of a tree or shrub in the place of that removed may be required as a condition for the permit. This policy only applies to private development, not public projects, and therefore does not apply to the proposed project. However, the City has also adopted a City-wide street tree plan that controls the planting of trees and shrubs in public planting areas. The project will include landscaping, including replacement trees for trees adjacent to the existing roadway that must be removed for construction. Up to 42 trees would require removal for the proposed project. The majority of these trees are located on the east side of the NB SR 99 off-ramp. Most of the trees to be removed are non-native species. However, eight (8) valley oaks (*Quercus lobata*), ranging in size from 7 inches diameter at breast height (dbh) to 30 inches dbh, would require removal. The trees would be replaced in appropriate locations. State and federal standards for clear zones for vehicle safety may limit tree-planting opportunities within state right of way. The City will work with adjacent property owners for replanting opportunities. The proposed project would not conflict with local policies and ordinances protecting biological resources. Therefore, impacts would be less than significant.

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

The proposed project site is located in an entirely urbanized area and is not subject to any habitat conservation plans or natural community conservation plans, nor is it adjacent to any properties that have an adopted plan. Development of the Butte Regional Conservation Plan, as being overseen by BCAG, is in progress and would include the project site if adopted. The project would not impact sensitive habitats and would not conflict with an adopted plan. Therefore, no impact related to conflicts with an adopted plan would result with implementation of the project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

3.5 Cultural Resources

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.?

A historical resource is defined by Public Resources Code Section 21084.1 and California Environmental Quality Act Guidelines Section 15064.5 as any resource listed or determined to be eligible for listing in the National Register of Historic Places as well as some California State Landmarks and Points of Historical Interest. In addition, historical resources are evaluated against the California Register of Historic Resources (CRHR) criteria prior to making a finding as to the project's impacts on historical resources. Generally, resources must be at least 50 years old to be considered for listing in the CRHR as a historical resource. The project site currently consists of existing roadways and does not contain any buildings or structures. The California Historical Resources Information System (CHRIS) records search and pedestrian survey completed for the project site did not identify any historical resources within the project boundaries. Therefore, no impact to historical resources would occur.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

An Archeological Survey Report (ASR) was produced for the proposed project in January 2019 to assess potential archeological resources within the project area (Appendix D). The ASR includes the results of a CHRIS records search, Native American coordination, and pedestrian survey conducted in support of the proposed project. No previously recorded resources were identified within the project area as a result of the CHRIS records search conducted at the Northeast Information Center (NEIC). The Native American Heritage Commission (NAHC) Sacred Lands File search indicated negative results for the project

area. Furthermore, a pedestrian survey of the project site did not identify any cultural resources.

The City contacted the Mechoopda Indian Tribe of Chico Rancheria (Tribe), per the 2008 Memorandum of Understanding (MOU) between the Tribe and the City (City of Chico 2008). The Tribe did not identify any potential tribal cultural resources or request consultation. Although no other California Native American tribes have requested notification of proposed projects per the requirements of Assembly Bill 52 (AB 52), an additional six Native American tribes were contacted, based on information provided by NAHC, and no issues were identified relative to the proposed project.

The entire project area is located along existing paved roadways and within extensively graded and disturbed sidewalks and shows considerable disturbance. Related disturbances include but are not limited to road paving and landscaping. The ASR concluded that such high levels of disturbance would very likely leave no subsurface archaeological resources intact. Excavation would be required throughout the project in order to construct landscaping and drainage facilities, which require trenching, placement of pipe, drainage structures, landscaping, irrigation, and backfill totaling 6 feet in depth. A maximum excavation depth of 25 feet would be required to install overhead signing along the Off Ramp. As the project area has been previously filled and disturbed to construct SR 99, the potential for inadvertent discovery of archeological resources is very low. Therefore, impacts to archeological resources would be less than significant. In the unlikely event of an archaeological discovery, AME-2 will be included in the project specifications. In addition, the conditions of the City's 2008 MOU remain in effect, which allows the Tribe to monitor ground-disturbing activities.

AME-2

Per Caltrans policy, if previously unidentified cultural materials are unearthed, a qualified archaeologist will assess the significance of the find. It should be further noted, additional archaeological surveying would be needed if project limits were extended beyond the present survey limits.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

No known human remains or burial sites were discovered through the CHRIS records search, pedestrian survey of the project site, or NAHC Sacred Lands File search and subsequent tribal outreach. Excavation would be necessary during project construction in

order to install landscaping and drainage facilities, which require trenching, placement of pipe, drainage structures, landscaping, irrigation, and backfill totaling 6 feet in depth. A maximum excavation depth of 25 feet would be required to install overhead signing (support foundations) along the Off Ramp. As the project area has been previously filled and disturbed to construct SR 99, the potential for inadvertent discovery of human remains is very low. However, the potential to encounter human remains during project construction still exists. The California Health and Safety Code includes procedures to be followed in the event human remains are discovered. This requirement is incorporated into AME-3.

AME-3

In the event human remains are discovered, work shall cease and the County Coroner will be notified immediately. No further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

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

3.6 Energy

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

The proposed project would replace two intersections with a 5-leg roundabout. Although two intersections would be combined, local circulation and access would not change, and the project would not substantially increase traffic volumes. Therefore, the proposed project is not expected to result in increased consumption of energy resources during project operation. Furthermore, the project would improve operations and enhance mobility by constructing a roundabout, which may decrease energy use associated with stopping and starting at stop controlled or signalized intersection. Energy consumption during project construction would primarily be related to use of off-road construction equipment and on-road construction vehicles. Construction activities would be temporary and account for minimal use of energy resources. Therefore, impacts would be less than significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As described in Section 3.6(a), the project would not increase use of energy resources during project operation. The project would involve converting two intersections into a roundabout, and would not construct buildings or structures that would use energy. Project construction would be temporary and would not account for substantial use of energy resources. Therefore, the proposed project would not conflict with a state or local plan for renewable energy or energy efficiency, and no impact would occur.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

3.7 Geology and Soils

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

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

A review of the most recent Alquist-Priolo Earthquake Fault Zoning Map indicates that the project site is not within an Alquist-Priolo Earthquake Fault Zone. The nearest mapped Fault-Rupture Hazard Zones are located approximately 70 miles from the site and are associated with the Dunnigan Hills Fault Zone. Therefore, there would be no impact.

ii) Strong seismic ground shaking?

The City's General Plan states that while there are no known or inferred active faults within the City, faults located outside of the City have the potential to cause strong ground shaking. The City enforces the California Building Code (CBC), which includes design measures and construction techniques to reduce seismic hazards (City of Chico 2017). Compliance with the CBC seismic standards would ensure maximum practicable protection from strong seismic ground shaking. With compliance with these requirements and recommendations, impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Several unnamed faults occur within the Chico vicinity. However, the Chico area does not have a history of major or severe seismic activity. Ground failure and liquefaction can potentially occur during an earthquake-induced ground-shaking event and can be a main cause of structure damage. Liquefaction occurs when ground shaking causes wet granular soils to change from a solid state to a liquid state, resulting in the collapse of buildings. People and structures are at risk when the ground begins to liquefy and can no longer support structures.

Potential for damage from liquefaction is low in the City. Therefore, it is unlikely that the project site would be susceptible to liquefaction. However, the project is required to comply with the CBC, which outlines specific design, engineering, and development standards for development proposed in areas with unstable soils. Compliance with the current regulations would ensure that the proposed project is designed and built to current standards to minimize impacts associated with seismic-related ground failure, including liquefaction. Therefore, impacts would be less than significant.

iv) Landslides?

Areas at risk from landslides include locations on or close to steep hills and steep road cuts or excavations, or areas where existing landslides have previously occurred. The project site is relatively flat and minimal changes in topography

would result from the proposed project. Based on the absence of significant slopes on or within the vicinity of the subject site, the potential for slope failure that could affect the project site is considered negligible. The flat nature of the project site and the distance between the project site and the surrounding hillsides would reduce the risk of landslide hazards. Further, the project is required to comply with the CBC, which outlines specific design, engineering, and development standards for development proposed in areas with unstable soils. Compliance with current regulations would ensure that all structures are designed and built to current standards to minimize impacts associated with seismic-related ground failure, including landslides. Therefore, impacts would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Preexisting urbanization and paving limits the susceptibility of underlying soil to erosion. Because the proposed project is predominantly in urbanized and paved areas, the erosion potential is low. However, construction of the proposed project, including excavation activities, would result in loose soil temporarily being exposed to the erosive forces of rainfall and high winds. In general, soil erosion can result in sedimentation of downstream water bodies, which in turn can result in adverse biological impacts. As described further in Section 3.10(a), the proposed project would be required to implement Best Management Practices (BMPs) to reduce water quality impacts related to erosion and sedimentation. These BMPs would be incorporated into a Storm Water Pollution Prevention Plan (for disturbance area of one acre or more) and a Water Pollution Control Program (for a disturbance area of less than one acre within State right of way) during project construction. As the proposed project would implement these soil erosion reduction measures, impacts would be less than significant.

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

As discussed above, the project site is not expected to be susceptible to geologic hazards such as landslides and liquefaction. In addition, the project is required to comply with the CBC, which outlines specific design, engineering, and development standards for development proposed in areas with unstable soils. Compliance with current regulations would ensure that buildings would be designed and engineered to withstand impacts of expansive and unstable soils. Therefore, impacts would be less than significant.

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

Expansive soils contain significant amounts of clay particles that have the ability to shrink and swell, depending on the water content. These soils are generally found in areas that were historically floodplains or lake areas, but such soils can also occur in hillside areas. When these soils swell, the change in volume can exert significant pressure on overlying or adjacent loads, such as buildings or underground utilities, and can result in structural distress and/or damage. When devoid of moisture, the soil will contract, often leaving fissures or cracks. Excessive drying and wetting of the soil can progressively deteriorate structures over the years by leading to differential settlement beneath or within buildings and other improvements. Review of U.S. Natural Resource Conservation Service soils data indicates that the majority of the project site contains soils classified as "Conejo clay loam, 0 to 1 percent slopes" (Hydrologic Soil Group: C) with a small area on the southern limit of the project classified as "Almendra loam, 0 to 1 percent slopes" (Hydrologic Soil Group: B). Both soil types are described as well drained with the depth to the water table being more than 80 inches. These soils have a moderate shrink-swell potential (NRCS 2006). The project is required to comply with the CBC, which outlines specific design, engineering, and development standards for development proposed in areas with expansive soils. Compliance with current regulations would ensure that all structures are designed and built to current standards to minimize impacts associated with expansive soils. Therefore, impacts would be less than significant.

e) Would the project 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 septic tanks or alternative wastewater disposal systems are included in the project, and there would be no impact.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project site is located within an urbanized area with existing paved roadways and extensively graded and disturbed sidewalks. The proposed project would involve an average excavation of 6 feet in depth, with a maximum excavation depth of 25 feet required to install overhead signing along the off ramp. Due to the disturbed nature of the project site and relatively shallow nature of the disturbance (except for a few limited areas for signage and lighting), there would be no impact.

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

3.8 Greenhouse Gas Emissions

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

The proposed project would convert two intersections in the City into a multi-lane roundabout. Local circulation and access would not change, and the project would not substantially increase traffic volumes. Therefore, the proposed project is not expected to result in increased GHG emissions during project operation. Furthermore, the project would improve operations and enhance mobility by constructing a roundabout, which would

decrease fossil fuel combustion required to stop and start vehicles at a stop-controlled or signalized intersection. The proposed project would not increase the capacity of existing roads or cause an increase in vehicles travelling on or within the vicinity of the project site. Therefore, the project would not increase GHG-generating activities during project operation.

The project would generate GHG emissions associated with short-term construction activities. GHG emissions generated by project construction would be temporary in nature and would cease upon completion of the construction phase. Construction-related emissions would primarily be associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles.

The BCAQMD has not established a significance threshold for GHG's (BCAQMD 2014). The BCAQMD considers project impacts less than significant if a project is implementing measures stipulated by an applicable climate action plan. The City has adopted the 2020 Climate Action Plan (CAP), which includes strategies to reduce greenhouse gas emissions in the City. The CAP guides the City to meet its GHG reduction goal of 25% below 2005 emissions by 2020 (City of Chico 2011). The CAP does not include specific thresholds related to construction of roadway projects.

The California Air Pollution Control Officers Association (CAPCOA) has published guidance on determining the significance of impacts from project greenhouse gas (GHG) emissions under CEQA in its white paper CEQA and Climate Change (CAPCOA 2008). This white paper includes screening thresholds that can be used to determine whether additional analysis and mitigation are required regarding GHG impacts. The CAPCOA recommended threshold of 1,100 metric tons of CO_2 equivalent (CO_2e) greenhouse gas emissions per year is therefore used as a threshold for construction activities.[1]

The California Emissions Estimator Model (CalEEMod) was used to estimate construction-related emissions from the proposed project. Table 3.8-1, Estimated Annual Construction GHG Emissions, presents estimated construction emissions compared to the threshold of significance. Complete assumptions and calculations are presented in Appendix B.

[1] CO_2e takes into consideration the variation in strengths of different greenhouse gases to create a single number that is the equivalent of all emissions compared to CO_2.

Table 3.8-1
Estimated Annual Construction GHG Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2020	122.58	0.04	0.00	123.47
			GHG Threshold	*1,100*
			Threshold Exceeded?	No

Source: See Appendix A for detailed results.
CO_2 = metric tons carbon dioxide; CH_4 = metric tons methane; N_2O = metric tons nitrous oxide; CO_2e = carbon dioxide equivalent

As shown in Table 3.8-1, estimated annual construction-related GHG emissions would be approximately 123.5 MT CO_2e per year. Therefore, construction impacts of the proposed project would not exceed the applied threshold of 1,100 MT CO_2e per year and impacts would be less than significant**.**

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

The Scoping Plan, approved by CARB in 2008 (CARB 2008) and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations. Relatedly, in the Final Statement of Reasons for the Amendments to the CEQA Guidelines, the California Natural Resources Agency (CNRA) observed that "the [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CARB 2008). However, under the Scoping Plan there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high Global Warming Potential GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., low-carbon fuel standard), among others. The project would comply with all applicable regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Regarding consistency with post-2020 statewide targets, specifically Senate Bill 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and Executive Order S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for that future-year analysis. However,

CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown. The Scoping Plan Second Update reaffirms that the state is on the path toward achieving the 2050 objective of reducing GHG emissions to 80% below 1990 after the adoption of Senate Bill 32 and Assembly Bill 197 in 2016.

Additionally, the City has adopted its 2020 Climate Action Plan (CAP), which includes strategies within a flexible ten-year framework, to achieve the City's goal of reducing GHG emissions to 25% below 2005 emission levels by the end of 2020. In order to accomplish this goal, the CAP includes implementing actions to reduce energy, water, fuel consumption, and solid waste disposal are included in the plan and estimates associated GHG emission reductions for each of these actions. These actions are divided into two phases, with the first phase ending in 2015. Implementation of this plan is intended to reduce GHG emissions resulting from local operations significantly (City of Chico 2011).

As discussed previously, the project would generate minimal short-term GHG emissions and would not increase GHG emissions during project operation. As such, construction and operation of the project would not conflict with the state's trajectory toward future GHG reductions and would not conflict with the City's CAP. With respect to future GHG targets under Senate Bill 32 and Executive Order S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the Assembly Bill 32 horizon year of 2020, to meet the reduction targets in 2030 and in 2050. This legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. Based on the preceding considerations, the project would not conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs, and impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

3.9 Hazards and Hazardous Materials

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

Construction of the proposed project would involve the use of hazardous materials, such as liquid concrete, vehicle fuels, lubricants and other vehicle-maintenance fluids, hydraulic fluid, liquid nitrogen, and cleaning solvents. When not in use, any hazardous material would be stored in designated construction staging areas in compliance with local, state, and federal requirements. The volume of stored materials in any one place would be small (i.e., generally less than 25 gallons) and the minimum necessary to carry out construction activities along the project alignment. Maintenance and servicing of construction vehicles would occur off site.

Any hazardous materials needed for construction would be stored and used in accordance with the product specifications and applicable regulations. Product specifications are described in detail on Material Safety Data Sheets (MSDS) that accompany every batch of

materials considered hazardous. Information in the MSDS includes instructions on proper use and application of the material, accidental release measures, and handling and storage requirements. Applicable regulations specify storage and handling requirements, such as proper container types and usage methods. Transportation of hazardous materials to be used during construction would be conducted in compliance with Department of Transportation requirements. After construction, all hazardous materials and waste would be removed from the site for reuse, recycling, or disposal at a properly licensed facility in accordance with state and federal regulations and requirements. With implementation of these actions, impacts associated with transport, use, and disposal of hazardous materials during construction of the proposed project would be less than significant.

b) Would the project 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?

As discussed in Section 3.9(a), project construction would require the limited use of hazardous materials, such as fuels, lubricants, and solvents. Storage and use of hazardous materials during construction could result in the accidental release of small quantities of hazardous materials typically associated with minor spills or leaks. Spills and leaks could degrade soil and groundwater quality, and/or surface water quality in nearby creeks or downstream water bodies.

Although spills and leaks during construction could occur, implementation of construction water quality BMPs required by the Regional Water Quality Control Board through its review and approval of the SWPPP, would reduce the potential for accidental releases and ensure quick response to any spills to minimize impacts to the environment. As discussed in Section 3.9(a), hazardous materials would be stored, handled, and used in accordance with applicable regulations. All equipment and materials storage would be routinely inspected for leaks, and records would be maintained for documenting compliance with the storage and handling of hazardous materials. Therefore, impacts would be less than significant.

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

The nearest school to the proposed project is Shasta Elementary School, located 0.4 mile northwest of the project site. Construction would involve limited quantities of liquid concrete, vehicle fuels, lubricants and other vehicle maintenance fluids, hydraulic fluid,

and cleaning solvents. However, no acutely hazardous materials, substances, or waste listed in Section 25532 of the Health and Safety Code or 40 CFR Part 355 would be used or generated by the proposed project. Given the temporary and short-term nature of construction, relatively small quantity of hazardous materials to be used, and distance to the nearest school, impacts on schools from potential hazardous substance emissions would be less than significant.

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

A Phase I Environmental Site Assessment (ESA) and Aerially Deposited Lead (ADL) Assessment was prepared for the proposed project in February 2019 (Appendix E). This report identifies Recognized Environmental Conditions resulting from the improper use, manufacture, storage, and/or disposal of hazardous or toxic substances on the project site, as well as concentrations of ADL in surface soils along the roadway shoulders. As part of the Phase I ESA, a records search of readily available environmental databases maintained by federal, state, and local agencies was conducted by EDR. The EDR report gives a listing of sites within an approximately 1-mile radius of the project site that are known to be chemical handlers, hazardous waste generators, or polluters.

The project site was not found on a list of hazardous material/waste sites pursuant to Government Code Section 65962.5. Chico Plating Works, located at 172 Commercial Avenue, approximately 0.24 miles south of the site, was listed on one regulatory database searched by EDR, ENVIROSTOR. Information for the facility indicated that the facility was reported to have potential contaminants of concern in 2011 that could have affected soils and a well. The facility does not appear to be currently active, and the report concluded that based on the distance of this facility from the site and the cross gradient location, the potential for environmental impacts from this facility to the site is low.

Forty-three sites were identified within the ASTM-specified search distances of the project site. These sites were listed in one or more databases, including RCRA-SQG, ENVIROSTOR, LUST, UST, CERS HAZ WASTE, SWEEPS UST, HIST UST, CA FID UST, CERS TANKS, FINDS, CUPA, HAZNET, and HIST CORTESE. The definitions of these databases can be found in the Phase I ESA prepared for the proposed project (Appendix E). Information provided did not indicate that the project site has been impacted by contamination from any of these nearby sites.

Based on the results from EDR Report for the project site and identified addresses within the ASTM-specified search distances of the project site, construction and operational activities on the site would not create a significant hazard to the public or environment. 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 result in a safety hazard or excessive noise for people residing or working in the project area?

The proposed project would be located within two miles of the Chico Municipal Airport. However, the proposed project would only construct transportation improvements to two intersections in the City by converting these intersections into a multi-lane roundabout. Therefore, the proposed project would not result in a safety hazard for people residing or working in the project site during construction or operation, and no impact would occur.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Upon completion of the project, there would be no impact to an emergency response or evacuation plan. Work would occur in roadways during project construction. In places where project construction may require a temporary road closure, closures and detours would be implemented consistent with Caltrans policies and standards. Construction activities would be coordinated with local emergency service providers so as not to cause closure of any emergency access route. Flaggers may briefly hold traffic back for construction equipment, but emergency vehicles would be provided access even in the event of temporary road closures. Because streets would remain open to emergency vehicles at all times, construction of the proposed project would not substantially impact emergency access and would minimally and temporarily impact emergency evacuation. The proposed project would not impair the implementation of or physically interfere with an adopted emergency response or emergency evacuation plan; therefore, the impact is less than significant during construction.

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

The proposed project would be located in an urbanized area that is not designated as a Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire

Protection (CAL FIRE 2008). Therefore, the proposed project would not expose people or structures to a significant risk involving wildland fires. There would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.10 Hydrology and Water Quality

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

The National Pollution Discharge Elimination System (NPDES) Storm Water Program mandates that owners or operators of municipal small separate storm sewer systems (MS4s) require detention and other pretreatment facilities for all storm drainage runoff prior to discharge (SWRCB 2013). The City is considered a Small MS4 (a service population of less than 100,000 people) and is covered by the State Water Resources Control Board Phase II MS4 permit (WQ Order No. 2013-001DWQ). Section E.12.c of the MS4 Order specifies that activities that create and/or replace 5,000 square feet or more of impervious surface are considered regulated projects. The proposed project would therefore be considered a regulated project and would be required to control pollutant sources, runoff volumes, rates and durations, and to treat runoff before discharge from the site. The project's post-construction water quality obligations will be set by jurisdiction, with the City's MS4 permit controlling in the City's right of way, and Caltrans' MS4 permit (Order No. 2012-0011-DWQ) controlling in the State right of way. Implementation of post-construction water quality measures will be based on the City's *Storm Water Resource Plan* for the City right of way and Caltrans' *Stormwater Quality Handbooks: Project Planning and Design Guide* for the State right of way. In addition, a Storm Water Pollution Prevention Plan (SWPPP), which would include required Best Management Practices (BMPs) to reduce construction-related water quality impacts, would be prepared prior to construction in compliance with the Regional Water Quality Control Board Construction General Permit. Due to the relatively small change in the total impervious area (and therefore the amount of site runoff) and the implementation of MS4 and SWPPP requirements, the project would not result in a substantial impact. The project would comply with all applicable local, state, and federal regulations and policies related to the protection of water quality. As a result, impacts to water quality would be less than significant.

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

Because the majority of the project site is currently paved, the proposed project does not involve appreciable increases in impervious surfaces, which means it would have negligible impact with regard to groundwater recharge. Groundwater is expected to be encountered at a depth of approximately 50 feet below the ground surface at the site. Depth

of project disturbance would not exceed 25 feet, and for the most part would not exceed 6 feet. The project does not include any uses that would require groundwater and would not impact groundwater recharge within the project site. For these reasons, the project impact on groundwater supplies would be less than significant.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which:

i) Would result in substantial erosion or siltation on- or off-site;

See impact discussion (a).

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

There are no streams or rivers located on or immediately adjacent to the project site. Sycamore/Mud Creek is located approximately 0.5 miles north of the site and flows west across northern Chico and terminates into the Sacramento River to the southwest. The proposed project would reconfigure two intersections into one roundabout controlled intersection. A Shasta Union Drainage Assessment District ditch begins at the intersection of Eaton Road and Hicks Lane and would be modified for the new intersection geometry. The project would install Low Impact Development (LID) Best Management Practices within the City's right of way to improve water quality and meet Regional Water Quality Control Board, City of Chico, Butte County, Caltrans, and Federal standards. Water quality improvements include amended vegetative swales and on-site infiltration basins.

Surface water at the site is generally constrained by the raised and paved surfaces. Currently there are no paved surfaces on roadway shoulders, and the median area created by SR99 On/off-Ramps. Surface water on the paved surfaces within the Site tends to sheet flow directly into low areas within the roadway shoulders and the SR99 medians, or into drop inlets on the edge of roadways.

The proposed project will result in an overall increase of 0.16 acres of impervious area due to widening of existing sidewalks, and addition of new shared use paths. Although there is a minor increase in impervious area, incorporation of infiltration basins and vegetative swales will negate any additional flow due to the increased runoff response time and will result in an overall reduction in stormwater runoff for the project site. The project would not substantially change the drainage pattern on

site or increase the rate or amount of surface runoff such that flooding would result on or off site; therefore, a less than significant impact would occur.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

As described previously, construction of the proposed project would not significantly increase the amount of impervious surface area on the project site and would not substantially change the drainage pattern on site or increase the rate or amount of surface runoff**.** Therefore, the project would not 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. There would be no impact.

iv) Impede or redirect flood flows?

The proposed project would not substantially change the drainage pattern on site or increase the amount of impervious surface area on the site. Therefore, the project would not impede or redirect flood flows, and no impact would occur.

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

There are no significant water bodies in the vicinity of the project site. Therefore, there is no potential for inundation by a seiche or a tsunami. The project site has less than 1% slope, and therefore, a mudflow is not possible. The proposed project would have no impact on inundation by a seiche, tsunami, or mudflow.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The amount of impervious surfaces subsequent to construction would generally be the same as existing conditions. The project would not significantly change the amount of impervious surface area on the project site, and the project would not substantially increase the volume of stormwater runoff from the project site. The project would implement BMPs to reduce stormwater pollutants from the site in accordance with Regional Water Quality Control Board requirements and the City's *Storm Water Resource Plan* (August 2018). Because the amount of runoff from the project site would not significantly change as a result of the project, and stormwater quality protection measures would be implemented

during project construction and operation, the project would not obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

3.11 Land Use and Planning

a) Would the project physically divide an established community?

The proposed project would address safety concerns at two intersections in the northwestern portion of the City. The City proposes to convert these two intersections to a 5-leg roundabout. Although the two intersections would be combined, the local circulation and access would remain unchanged. No structures other than the roadways are proposed.

Land uses surrounding the project site consist of commercial and vacant land uses in proximity to SR 99, with low-density residential beyond. To the west are on- and off-ramps to SR 99; to the northwest (west of Hicks Lane) is Pacific Supply (commercial building materials company) which includes one-story buildings/warehouses and a large paved parking lot fronting Eaton Road, to the northeast (east of Hicks Lane) is a vacant parcel owned by the City of Chico that is partially paved with some intermittent trees, with single-family residential parcel beyond; and to the south (of Eaton Road) are one-story commercial land uses including buildings and parking lots for Xfinity/Comcast, Action News Now (television station, east of Silverbell Road), Production Credit Association, and Precision Auto Repair. South of the commercial land uses along Silverbell Road are single-family residential dwellings with backyards facing the SR 99 NB Off ramp.

The proposed project consists of roadway improvements on an existing local street. The project would not introduce a new land use or change or limit the existing land use on adjacent parcels but would instead improve the existing transportation land use. This would not create a barrier to circulation within an established community. Therefore, there would be no impact.

b) Would the project cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

Eaton Road is identified in the City of Chico General Plan as an arterial street. The proposed project would meet the General Plan Level of Service (LOS) standard of "D" (under the roundabout alternative, LOS is not anticipated to exceed LOS C during the AM or PM Peak Hour in 2040) and improve bicycle and pedestrian circulation in the project area. The proposed project would be consistent with General Plan goals and policies, including Policy CIRC-2.1, which requires the City to develop an integrated, multimodal circulation system, Policy CIRC-2.2, which requires the City to provide greater street connectivity and efficiency for all transportation modes, Policy CIRC-3.4, which requires the City to improve safety conditions, efficiency, and comfort for bicyclists, and Policy CIRC-4.2, which requires the City to provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.

As discussed previously, in question (a), the project would not introduce incompatible land uses. The proposed project would not conflict with any applicable land use plan, policy, or regulation. Therefore, there would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.12 Mineral Resources

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

The proposed project is located in a developed area with existing roadways, and service commercial and residential uses. Existing development in the project area precludes development of a quarry or extraction of aggregate or other minerals within this area. Because the proposed project would be located within a developed area that is not expected to contain significant mineral deposits, loss of availability of a known mineral resource of value to the region and state is unlikely to occur. Therefore, no construction or operation impacts would occur.

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

The City of Chico does not identify any mineral resources areas or locally important mineral resource recovery sites within the City. The project site is located in a developed area that is not used as a mineral resource recovery site. Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource recovery site, and no construction or operation impact would occur.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☐	☒

3.13 Noise

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

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. The City of Chico General Plan Noise Element specifies maximum allowable exterior noise levels from non-transportation sources. This includes an average-hourly daytime noise level of 55 dBA and an average intermittent noise level of 75 dBA. However, construction noise is exempt from these noise standards, as specified in the City's Municipal Code Chapter 9.38.

The proposed project would consist of converting two intersections within the City to a five-leg roundabout. This would not change local access or circulation, and would not increase traffic volumes on the project site or vicinity. Therefore, increases in noise levels during project operation are not expected.

According to the Noise Technical Memorandum (Appendix F) prepared for the proposed project, the project is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dBA per doubling of distance. The construction area is approximately 215 feet from the nearest residence, located to the northeast of the project site. At this distance, noise levels would be reduced by 12 to 15 dBA. The equipment with the potential to produce the loudest noise levels, the pavement scarifier, would result in noise levels of approximately 75 dBA maximum at the closest residence. This level would not exceed the maximum allowable daytime noise level specified in the City's General Plan Noise Element.

Additionally, construction efforts are expected to only occur during daytime hours. As specified in the Chico Municipal Code, construction shall be exempt between the hours of ten a.m. and six p.m. on Sundays and holidays, and seven a.m. and nine p.m. on other days. Project construction would only occur during these hours. Considering the construction exemption and the temporary nature of project construction, noise impacts from construction of the proposed project are considered less than significant.

b) Would the project result generation of excessive groundborne vibration or groundborne noise levels?

Major groundborne vibration or groundborne noise-generating activities would not occur during project construction or operation. Pile driving or blasting would not be necessary during project construction. The proposed project would replace two intersections with a multi-lane roundabout. This would not result in generation of excessive groundborne vibration or groundborne noise levels. Therefore, no impact would occur.

c) Would the project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The proposed project is located within two miles of the Chico Municipal Airport. However, the proposed project would only construct transportation improvements to two intersections in the City by converting these intersections into a multi-lane roundabout. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels, and no impact would occur.

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

3.14 Population and Housing

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project would not construct new homes or businesses or extend new power lines or other infrastructure into areas not already served. The proposed project is designed to improve safety, improve operations, reduce delay, and enhance mobility for all travel modes at the study intersections. The project would accommodate growth in the region, but would not induce growth or remove a barrier to unplanned growth by increasing roadway capacity. Therefore, the proposed project would not facilitate population growth in the City of Chico. The proposed project would result in no change in zoning or land use on the project site but would ensure system reliability and adequate system capacity to accommodate the existing population, and the population growth planned for in the City's General Plan. The proposed project would not induce growth in population beyond that anticipated and allowable under existing adopted plans and land use regulations. Accordingly, the proposed project would not indirectly induce population growth, and no impact would occur.

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

The proposed project would not result in the displacement of existing dwelling units. The project would convert two intersections into a 5-leg roundabout. Although the two intersections would be combined, the local circulation and access would remain unchanged. Minor right-of-way takes associated with the project would affect only the commercial land uses in the southeast quadrant of the intersection. The proposed project would have no impact associated with the displacement of people or the construction of replacement housing.

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

3.15 Public Services

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

Fire protection?

The nearest fire station to the proposed project is Butte County Fire Station 42, located at 10 Frontier Circle, approximately 1.5 miles west of the project site. As with any roadway construction project, construction related vehicles and activities have the potential to temporarily interfere with safe access during construction. Interference with access along the project alignment could impact access to or from community services in the project area, such as fire department vehicle access to adjacent sites during a medical emergency or fire. The City would coordinate any road closures with emergency service providers so that response times would not be affected.

Once construction is complete, the proposed project would improve circulation and decrease safety concerns at the project site. This would improve circulation for emergency vehicles. The proposed project would not increase the resident population in the project area and is not expected to result in a substantial increase in demand for any community facilities or services. Therefore, impacts to fire protection would be less than significant during project construction and operation.

Police protection?

The nearest police station to the proposed project is the Chico Police Department police station, located at 1460 Humboldt Road, 4.1 miles southwest of the project site. The proposed project would result in no permanent increase in population and would introduce no new uses to the project site that would generate increased long-term demand for police protection services. During project construction, the City would coordinate any road closures with emergency service providers so that response times would not be affected. Therefore, the proposed project would have a less than significant impact on police protection services in the City.

Schools?

The nearest school to the proposed project is Shasta Elementary School, located 0.4 mile northwest of the project site. Increased demand for public school services are typically associated with increases in the local population or demand for housing. The proposed project would not directly or indirectly result in an increase in population. Therefore, no impact would occur.

Parks?

See Section 3.16 for a discussion of potential impacts on recreational facilities, including parks.

Other public facilities?

The proposed project would not result in substantial adverse impacts related to other types of public facilities (e.g., public libraries, hospitals, or other civic uses) because the proposed project would not result in a significant increase of local population or housing, which is typically associated with increased demand for public facilities. The proposed project would involve transportation improvements to two intersections in the City and would not directly or indirectly induce growth or create a need for additional public services. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.16 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?

The nearest parks to the project site include DeGarmo Park, located approximately 0.3 mile northwest of the site, and Peterson Park, located approximately 0.6 mile southwest of the site. DeGarmo Park is a 36-acre newly constructed community park with youth softball fields, multi-use turf fields, a playground, dog park, picnic shelters, restrooms, and a walking path. An additional sports field, aquatic facility, community center, gymnasium, and other recreation amenities and improvements are proposed at this park in the future (Chico Area Recreation and Park District 2019a). Peterson Park is a 4.1-acre neighborhood park with a multi-use turf playfield, basketball court, playground, picnic tables, and a walking path (Chico Area Recreation and Park District 2019b). The project would involve converting Eaton Road/SR 99 NB Ramps/Hicks Lane into one multi-lane roundabout intersection to increase safety and improve operations for two intersections in the City. Although the two intersections would be combined, local circulation and access would not be changed. Therefore, the proposed project would not increase access to parks such that use of existing recreational facilities in the vicinity of the proposed project would increase. 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?

The project would replace two intersections in the City with a multi-lane roundabout intersection. No recreational facilities would be constructed, the project would not require the construction or expansion of recreational facilities, and there are no recreational facilities adjacent to the project site. Therefore, no impact would occur.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION– Would the project:				
a) Conflict with program plan, ordinance or policy adressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)??	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

3.17 Transportation and Traffic

a) Would the project conflict with program plan, ordinance or policy addressing the performance of the circulation system, including transit, roadway, bicycle and pedestrian facilities?

An Intersection Control Evaluation (ICE) Report was prepared for the proposed project in June 2018 to assess changes in intersection operating conditions and traffic volumes in the project area with and without the proposed project (Appendix G). The project design alternatives were analyzed for Existing Year conditions (Year 2017), Interim Design Year Conditions (Year 2030), and Ultimate Design Year Conditions (Year 2040). The study

intersections that were selected for analysis are the Eaton Road/SR 99 NB Ramps intersection and the Eaton Road/Hicks Lane intersection. The analysis was conducted for both the AM and PM peak hour time periods.

Operations at intersections are typically described in terms of level of service (LOS). LOS is a qualitative measure of operations with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. LOS definitions for different types of intersection controls are outlined in Table 3.17-1.

Table 3.17-1
Intersection Level of Service Definitions

Level of Service (LOS)	Description	Signalized Intersections Avg. Delay	Unsignalized Intersections
A	Free Flow/Insignificant Delays: No approach phase is fully utilized by traffic and no vehicle waits longer than one red signal indication.	≤ 10.0 sec/ veh	≤ 10.0 sec/ veh
B	Stable Operation/Minimal Delays: An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles.	10.1 to 20.0 sec/ veh	10.1 to 15.0 sec/ veh
C	Stable Operation/Acceptable Delays: Major approach phases fully utilized. Most drivers feel somewhat restricted.	20.1 to 35.0 sec/ veh	15.1 to 25.0 sec/ veh
D	Approaching Unstable/Tolerable Delays: Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.	35.1 to 55.0 sec/ veh	25.1 to 35.0 sec/ veh
E	Unstable Operation/Significant Delays: Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.	55.1 to 80.0 sec/ veh	35.0 to 50.0 sec/ veh
F	Forced Flow/Excessive Delays: Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.	>80.0 sec/ veh	>50.0 sec/ veh

Source: Transportation Research Board, 2010

The ICE Report calculated intersection LOS using the methods documented in the Transportation Research Board publication Highway Capacity Manual (HCM) 6th Edition. The HCM method takes into account existing signal timing, minimum green times, vehicle volumes, pedestrian and bike movements, user defined saturation flow rates, and storage bay lengths. The resulting intersection delay (in seconds) is then used to identify an LOS value. The output for this method is a delay value (in seconds) and an LOS for the intersection as a whole. Table 3.17-2 provides Existing Year (2017), Opening Year (2020), and Ultimate Design Year (2040) delay and LOS at the study intersections without the proposed project.

Table 3.17-2
Peak Hour Intersection Levels of Service – No-Build Alternative

Intersection	Existing Year (2017)				Opening Year (2020)				Ultimate Design Year (2040)			
	Delay (sec)		LOS		Delay (sec)		LOS		Delay (sec)		LOS	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eaton Road/SR 99 NB Ramps	58.5	68.6	F	F	72.3	85.5	F	F	200.3	237.8	F	F
Eastbound Left/Thru	35.7	94.8	E	F	44.4	118.8	E	F	190.0	OVR	F	F
Westbound Thru (2 Lanes)	26.5	25.5	D	D	30.3	28.8	D	D	101.1	80.5	F	F
Westbound Right	8.7	9.2	B	A	91.0	9.4	A	A	11.7	9.4	B	A
Northbound Left/Thru	135.4	138.1	F	F	173.6	177.8	F	F	OVR	OVR	F	F
Northbound Right	13.0	23.0	B	C	14.1	27.1	B	D	21.1	133.8	C	F
Eaton Road/Hicks Lane	13.8	16.0	B	C	14.2	15.6	C	C	23.6	41.5	C	E
Eastbound Left/Thru	9.0	9.4	A	A	9.1	9.2	A	A	10.5	11.0	B	B
Eastbound Thru	0.3	0.7	A	A	0.3	0.5	A	A	0.6	1.4	A	A
Westbound Thru	0.0	0.0	A	A	0.0	0.0	A	A	0.0	0.0	A	A
Westbound Thru/Right	0.0	0.0	A	A	0.0	0.0	A	A	0.0	0.0	A	A
Southbound Left	11.7	11.6	B	B	12.1	12.1	B	C	17.8	17.4	C	C
Southbound Right	22.1	36.6	C	E	22.8	31.4	C	C	53.9	152.1	F	F

Source: ICE Report, Appendix G

Although Caltrans has not designated a LOS standard, Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002) indicates that Caltrans endeavors to maintain a target LOS at the transition between "C" and "D". However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For the ICE Report, LOS "C" was assumed to represent the appropriate target.

Using this target threshold, the Eaton Road/SR 99 NB Ramps intersection does not currently operate at an acceptable level of service, with an LOS of F during both the a.m. and p.m. peak hours. The Eaton Road/Hicks Lane intersection operates at an acceptable LOS under existing conditions, although the southbound right turn lane currently operates at LOS E. Intersection LOS generally worsens or stays the same at different turning movements at the Eaton Road/SR 99 NB Ramps intersection during the Opening Year (2020) and Ultimate Design Year (2040) conditions, as shown in Table 3.17-2. The Eaton Road/Hicks Lane intersection continues to operate at an acceptable LOS until Ultimate Design Year conditions, when the intersection has an LOS E during the p.m. peak hour. The southbound right turn lane at this intersection has an LOS F during the a.m. and p.m. peak hours under Ultimate Design Year conditions.

Table 3.17-3 shows intersection operations during the Opening Year (2020), Interim Design Year (2030) and Ultimate Design Year (2040) conditions with the proposed project.

Table 3.17-3
Peak Hour Intersection Levels of Service – Roundabout Alternative

Intersection	Opening Year (2020)				Interim Design Year (2030)				Ultimate Design Year (2040)			
	Delay (sec)		LOS		Delay (sec)		LOS		Delay (sec)		LOS	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eaton Road/SR 99 NB Ramps/Hicks Lane	9.5	10.3	A	B	11.2	14.6	B	B	10.3	15.3	B	B
Eastbound Left/Thru	5.7	-	A	-	6.3	-	A	-	6.7	6.7	A	A
Eastbound Left	-	6.4	-	A	-	-	-	-				
Westbound Thru	-	-	-	-	-	-	-	-	10.5	19.2	B	B
Westbound Thru/Right	9.8	-	A	-	13.1	-	B	-	9.4	-	A	-
Westbound Left/Thru	-	13.0	-	B	-	24.9	-	C	-	13.9	-	B
Northbound Left	12.2	12.6	B	B	12.5	14.0	B	B	13.3	15.3	B	B
Northbound Left/Thru/Right	9.1	7.0	A	A	9.3	8.6	A	A	10.0	10.3	A	B
Southbound Left/Thru/Right	11.4	10.0	B	B	14.7	13.4	B	B	13.6	34.7	B	C

Source: ICE Report, Appendix G

As shown in Table 3.17-3, the proposed project would improve existing and future operations at the Eaton Road/SR 99 NB Ramps intersection and the Eaton Road/Hicks Lane intersection. The project would not cause the Eaton Road/SR 99 NB Ramps/Hicks Lane intersections to exceed LOS C. Therefore, the project would not conflict with policies addressing performance of the roadway system.

The ICE Report prepared for the proposed project also collected and analyzed volumes of pedestrians and bicyclists currently using the project site. The report states that approximately 5-10 cyclists and less than five pedestrians use the two study intersections during peak hours. This is likely due to minimal existing bike and pedestrian infrastructure at the intersections. The proposed project would incorporate a 10-foot shared-use path on the southern side of the roundabout intersection buffered by at least 2 feet of landscaping from the roadway or by a barrier at the overcrossing. Additionally, the project would include a pedestrian and bicycle connection from the roundabout intersection at Silverbell Road in order to match the City's current bicycle master plan (Chico Bicycle Plan 2019 Update). Pedestrian crossings would be a minimum of one car length from the circulatory roadway, and pedestrian refuges at the splitter islands would be at least 6 feet wide, which are consistent with National Cooperative Highway Research Program (NCHRP) Report

672 entitled "Roundabouts: An Information Guide, 2nd Edition". The shared-use path would convey both pedestrian and bicycle traffic through the intersection. The path provides the opportunity for cyclists to exit the bicycle lane via a bicycle ramp and navigate the intersection on the shared-use path and through the crosswalks. As an alternative to taking the shared-use path, cyclists would also be given an option to exit the bicycle lane and enter the roadway to ride with vehicle traffic through the roundabout. Crosswalks would be split into two separate crossings through the provision of pedestrian refuges at the splitter islands. These two-stage crossings reduce the amount of sustained time a pedestrian is in potential conflict with motorized vehicles by limiting the length of each crossing and limiting each crossing to one direction of vehicle travel at a time. Because the project would improve operations at existing intersections and would support adequate pedestrian and bicycle circulation, impacts would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?

Section 15064.3(b) requires that a lead agency shall rely upon vehicle miles travelled (VMT) as the means of analyzing transportation impacts, no later than July 1, 2020. The City has not yet adopted VMT standards for assessing transportation impacts. Therefore, this section is not applicable to the proposed project. There would be no impact.

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

The proposed project would convert Eaton Road/SR 99 NB Ramps/Hicks Lane into one multi-lane roundabout intersection to improve safety conditions at the two existing intersections. The proposed project would reduce existing hazards associated with the intersections and would accommodate Ultimate Design Year traffic forecast volumes. Proposed roundabout geometrics and pedestrian crossings would be consistent with the National Cooperative Highway Research Program (NCHRP) Report 672 entitled "Roundabouts: An Information Guide, 2nd Edition". The roundabout geometric design typically requires the driver to reduce the speed in the intersection to 15-25 MPH. This potential for reduced travel speeds through the intersection would reduce crashes. As the proposed project is located in a developed area surrounded by residential and service commercial uses, the project would not increase hazards due to incompatible uses. Therefore, impacts would be less than significant.

d) Would the project result in inadequate emergency access?

Work would occur in roadways during project construction. In places where project construction may require a temporary road closure, construction activities would be coordinated with the City so as not to cause closure of any emergency access route. Flaggers may briefly hold traffic back for construction equipment, but emergency vehicles would be provided access even in the event of temporary road closures. Because streets would remain open to emergency vehicles at all times, construction of the proposed project would not impact emergency access and would minimally and temporarily impact emergency evacuation. The proposed project would not impair the implementation of or physically interfere with emergency access; therefore, the impact is less than significant during construction. There would be no operational impact following completion of the project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☐	☐	☒

3.18 Tribal Cultural Resources

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

See item (ii) below.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

An archaeological survey report (ASR) was prepared for the proposed project (Appendix D of this Initial Study). No tribal cultural resources were identified through the records search and field survey.

The City contacted the Mechoopda Indian Tribe of Chico Rancheria (Tribe), per the 2008 Memorandum of Understanding between the Tribe and the City. A letter requesting early consultation was sent to the Tribe on March 25, 2019 with a request to respond by April 24, 2019. No request for consultation or information regarding tribal cultural resources was received. No other California Native American tribes have requested notification of proposed projects per the requirements of Assembly Bill 52 (AB 52). Therefore, the project would not have an impact to tribal cultural resources. See Section 3.5 for additional discussion.

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

3.19 Utilities and Service Systems

a) Would the project require or result in the relocation or construction of new or expanded water, or wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities or expansion of existing facilities, the construction or relocation of which could cause significant environmental effects?

The project would combine the SR 99 NB Ramps/Eaton Road and Eaton Road/Hicks Lane intersections into a five-leg roundabout. This would require earthwork and adjustment of utility vaults along Eaton Road. All other existing utilities would be protected in place, including the joint overhead line that crosses Eaton Road on the eastern end of the project. The adjustment of utility vaults along Eaton Road would not result in significant environmental effects, because the area of impact would be minimal. The project would not require construction of new or expanded water or wastewater treatment, storm water

drainage, electric power, natural gas or telecommunications facilities. Therefore, impacts would be less than significant.

b) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, and reasonably foreseeable future development during normal, dry and multiple dry years or are new or expanded entitlements needed?

The proposed project would convert two intersections into a 5-leg roundabout. The proposed project would generate no permanent change in water demand that could result in a need for new or expanded water entitlements. Project construction would require water for dust control and worker needs. The amount of water required for project construction is expected to be minimal. Water supplies would not be required during project operation. Therefore, existing water supplies are sufficient to serve the project and reasonably foreseeable future development, and no impact would occur.

c) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The proposed project would convert Eaton Road/SR 99 NB Ramps/Hicks Lane into one multi-lane roundabout intersection. The project would result not in a permanent increase in population that would generate additional wastewater that would cause or exacerbate a capacity issue. Portable toilets would be used for the construction phase. Portable toilets would be maintained and serviced by an outside contractor, who would dispose of effluent in accordance with applicable regulations for wastewater disposal. Because the proposed project would not directly or indirectly increase sanitary wastewater generation, no impact would occur with regard to wastewater treatment capacity.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

The project would reconstruct and realign the SR 99 NB off-ramp and restripe the westbound approach to ultimately convert Eaton Road/SR 99 NB Ramps/Hicks Lane into one multi-lane roundabout intersection. Project construction would generate solid waste associated with excavation and removal of existing materials. All forms of refuse and waste produced during construction would be collected and disposed of in an appropriately licensed facility or hauled to a commercial soil recycling facility. State regulations (i.e., Integrated Waste Management Act) require diversion of at least 50% of construction and

demolition debris. The project would dispose solid waste in accordance with federal, state, and local statutes and regulations related to solid waste. The State construction and demolition requirement would substantially reduce solid waste associated with the proposed project's construction activities. The remaining construction material would be disposed of at a solid waste facility with available capacity. Therefore, there would be no impact.

g) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

See the discussion in Section 3.19(d). All solid waste generated by the proposed project during and following construction would be handled in accordance with federal, state, and local statutes and regulations and hauled to an approved solid waste facility with permitted capacity to accept the waste materials. Implementation of the proposed project would have no impact regarding solid waste statutes and regulations.

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

3.20 Wildfire

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

As discussed in the Section 3.9(f), work would occur in roadways during project construction. However, all improvements associated with the roundabout alternative have been designed to allow for construction staging that maintains traffic flow during construction. In places where project construction may require a temporary road closure, construction activities would be coordinated with the City so as not to cause closure of any emergency access route. Flaggers may briefly hold traffic back for construction equipment, but emergency vehicles would be provided access even in the event of temporary road closures. Because streets would remain open to emergency vehicles at all times, construction of the proposed project would not impact emergency access and would minimally and temporarily impact emergency evacuation. The proposed project would not impair the implementation of or physically interfere with an adopted emergency response or emergency evacuation plan; therefore, the impact is less than significant during construction; during operation, no impact would occur.

b-d) Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

As discussed in Section 3.9(g), the project site is located in an urbanized area that is not designated as a Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CAL FIRE 2008). Therefore, the project is not located in an area that is at substantial risk from wildland fires. The project would involve transportation improvements to two intersections in the City and would not construct any buildings or structures. The project site is located on flat land that would not exacerbate wildfire risks or expose people or structures to significant risks such as downslope or downstream flooding or landslides. Therefore, no impact related to wildfire hazards would occur.

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

3.21 Mandatory Findings of Significance

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

As discussed above in Section 3.4, the proposed project would not adversely affect habitat or restrict the range or population levels of a plant or animal community. The project site does not contain significant historical resources that would be impacted by project implementation. Therefore, impacts would be less than significant.

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)?

No other transportation or land development projects are proposed in or near the project site. The cumulative context for the proposed project is the continued buildout of the City's General Plan. As discussed in Sections 3.1 through 3.18, with implementation of applicable General Plan policies and required regulation and ordinances the proposed project would not substantially contribute to cumulative impacts. The proposed project would improve operations at two intersections in the City, and would reduce delay and improve Level of Service to meet existing standards. The proposed project would be consistent with General Plan goals and policies, including Policy CIRC-2.1, which requires the City to develop an integrated, multimodal circulation system, Policy CIRC-2.2, which requires the City to provide greater street connectivity and efficiency for all transportation modes, Policy CIRC-3.4, which requires the City to improve safety conditions, efficiency, and comfort for bicyclists, and Policy CIRC-4.2, which requires the City to provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles. The proposed project is consistent with the City's General Plan and would not result in new or increased cumulative impacts or result in additional significant effects and impacts are less than significant.

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

The preceding sections of this IS discuss the various types of impacts that could have adverse effects on human beings, including air quality, noise, environmental hazards, and wildfire. These effects would either have no impact or would result in a less-than-significant impact. Therefore, impacts to human health would be less than significant.

4 REFERENCES AND PREPARERS

4.1 References Cited

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4.2 List of Preparers

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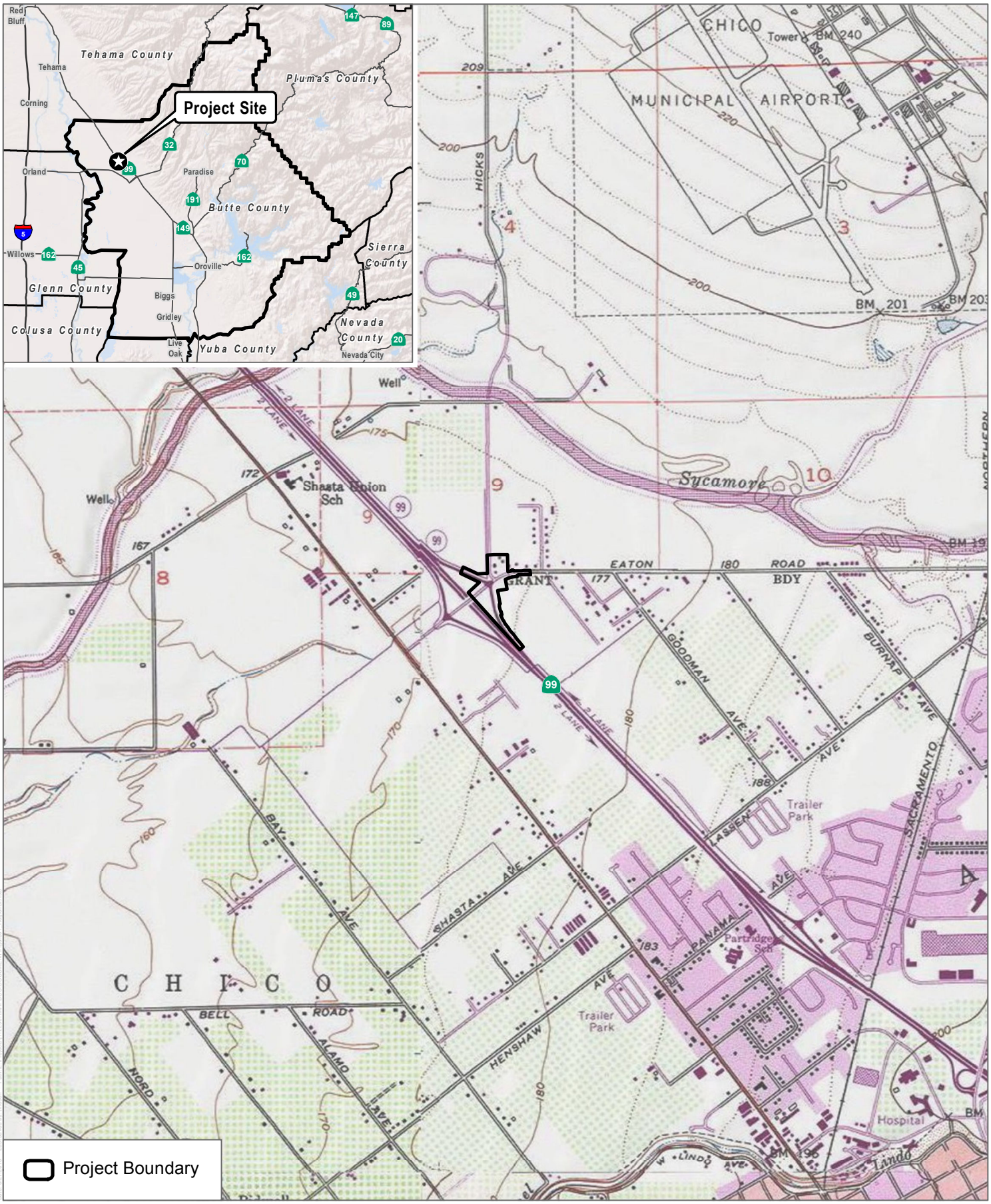

SOURCE: USGS 7.5 minute Richardson Springs & Nord Quadrangles

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Regional Location

SR 99 & Eaton Road Interchange

INTENTIONALLY LEFT BLANK

SOURCE: Bing Maps 2018, County of Butte 2018

DUDEK

0 150 300 Feet

FIGURE 2

Project Location

SR 99 & Eaton Road Interchange

INTENTIONALLY LEFT BLANK

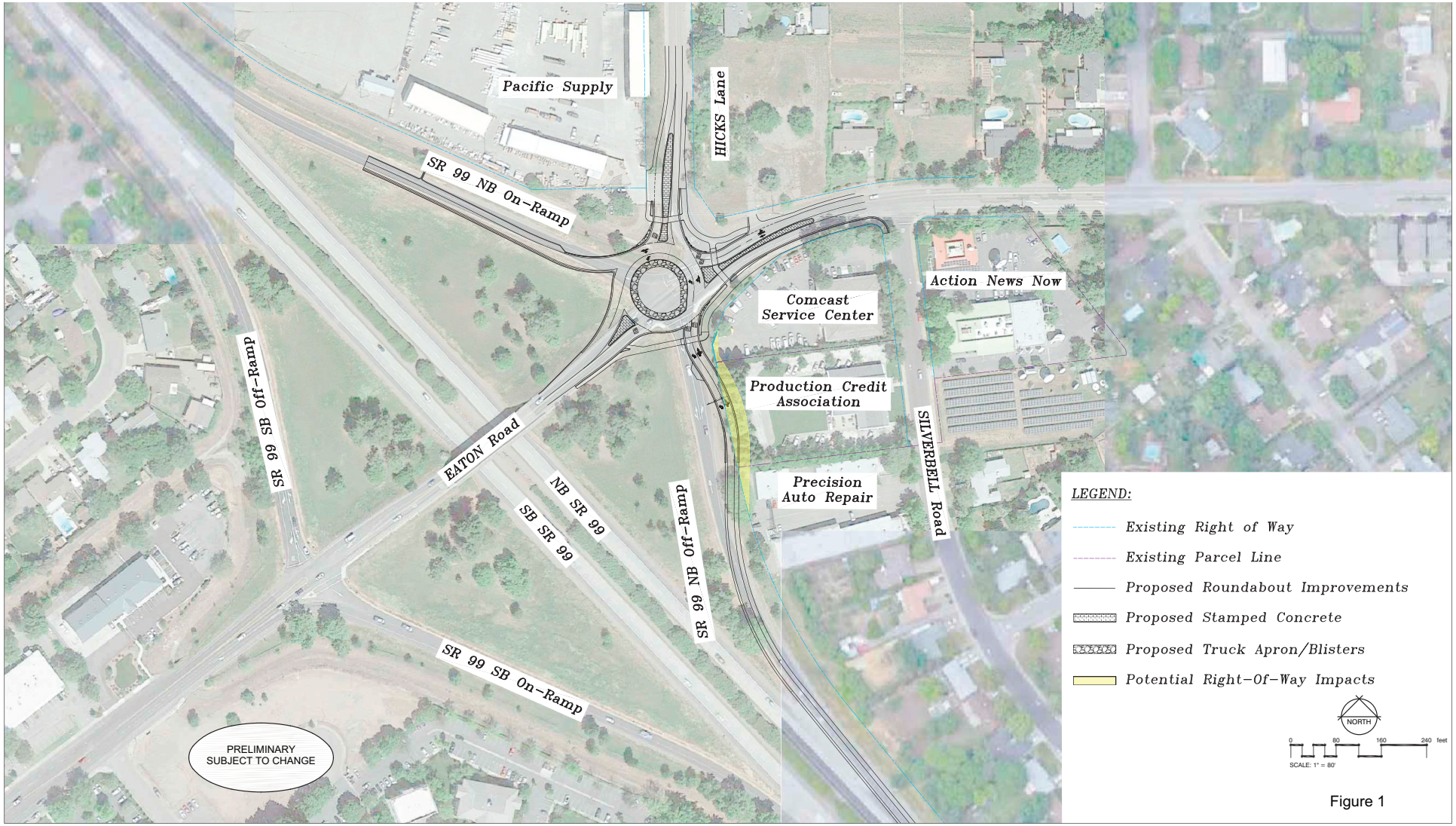

Figure 1

SOURCE: OmniMeans GHD 2019

DUDEK

FIGURE 3

Project Footprint

SR 99 & Eaton Road Interchange

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