

BUT-32 Intersection Improvements Project

BUTTE COUNTY, CA
DISTRICT 3 – BUT – 32 (PM 7.6/7.9)
EA: 2H240 / EFIS: 0317000084

Initial Study with Proposed Negative Declaration



Prepared by the
State of California, Department of Transportation



May 2019

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of the proposed project located in Butte County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document are available for review at the following locations:
 - <http://www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm>
 - Library Address: 1108 Sherman Avenue, Chico CA 95926
- This document is available for review on weekdays between 8:00 a.m. and 4:00 p.m. at the Caltrans District 3 office at 703 B Street, Marysville, CA 95901. Technical studies are available upon request.
- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
- Send comments via postal mail to:
California Department of Transportation
Environmental Management M2 Branch
Attn: Maggie Ritter
703 B Street
Marysville, CA 95901
- Send comments via email to: maggie.ritter@dot.ca.gov
- Be sure to send comments by the deadline: June 1, 2019.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans may: (1) give environmental approval to the proposed project; (2) do additional environmental studies; or (3) abandon the project. If the project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the project.

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to California Department of Transportation, Attn: Gilbert Montes-Chan, Public Information Officer, 703 B Street, Marysville, CA 95901; (530) 741-4572 Voice, or use the California Relay Service TTY number, 1 (800) 735-2929.

Intersection Improvements between post miles 7.6 to 7.9 in Butte County in the City of Chico

INITIAL STUDY with Proposed Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

4/29/19
Date of Approval

Suzanne Melim
Suzanne Melim, Office Chief
North Region Office of Environmental Management
California Department of Transportation

PROPOSED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation proposes to improve the intersections on SR 32 (Nord Ave) at West Sacramento Ave (west) and West Sacramento (east) between post miles (PM) 6.7 and 6.9. The proposed project would improve the intersections on SR 32 (Nord Avenue) at West Sacramento Avenue (East) and West Sacramento (West) by replacing these two signalized intersections with roundabouts and/or making intersection improvements. Three alternatives and a No Build are being consider for this project. Major elements of this project include, consolidation of driveways between the two intersections, and fencing between the two intersections to prevent mid-block crossing.

Determination

This proposed Negative Declaration (ND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a ND for this project. This does not mean that Caltrans' decision regarding the project is final. This ND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on aesthetics, agricultural and forest resources, biological resources, cultural resources, geology and soils, land use and planning, mineral resources, population and housing, recreation, and tribal cultural resources.

In addition, the proposed project would have less than significant effects to air quality, hazards and hazardous materials, hydrology and water quality, noise, public services, utilities and service systems, and transportation/traffic/bicycles and pedestrians.

Suzanne Melim, Office Chief
North Region Office of Environmental Management
California Department of Transportation

Date

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Section 1: Proposed Project

Project Title

BUT-32 Intersection Improvements Project

Lead Agency Name and Address

California Department of Transportation
703 B Street
Marysville, CA 95901

Contact Person and Phone Number

Maggie Ritter
Environmental Management M3 Branch
Phone: 530.741.4535
Email: maggie.ritter@dot.ca.gov

Project Location

The proposed project is located on State Route 32 between post miles 6.7 to 6.9 in Butte County in the City of Chico. The total length of the proposed project is approximately 0.2 miles.

Purpose

The purpose of this project is to reduce collisions and collision severity on State Route 32 (Nord Avenue) in Butte County, post mile 7.6 to 7.9, at West Sacramento Avenue (East) and West Sacramento Avenue (West).

Need

This project is needed because this location has experienced a high number of accidents from January 1, 2012 to December 31, 2017. Improvements to this area like improving the intersection and reducing the number of conflict points through the installation of a raised curb median and consolidating private business driveways would help reduce the severity and number of accidents in this area.

BUT-32 Accident Data (From Jan.1, 2012 to Dec.31, 2017)

No. of Accidents/Significance				
TOTAL	FAT	INJ	F+I	PDO
29	1	14	15	15

From January 1, 2012 to December 31, 2017, the total number accidents that occurred within the project limits is 29 accidents. Of the 29 accidents, 12 were rear end collision, 5 were broadsides and 5 were sideswipes and 7 are other types of accidents. Of the 29 accidents 5 of the accidents involved vehicles and pedestrian resulting in 4 injuries and 1 fatality; another 4 accidents involved vehicles and bicyclist resulting in 4 injuries and 0 fatalities. Collision data was provided by the City of Chico, in addition to Caltrans collision data, and was used to initiate this project.

Project Description

The State of California Department of Transportation proposes to improve the intersections on SR 32 (Nord Ave) at West Sacramento Ave (west) and West Sacramento (east). Three alternatives and a No Build are being consider for this project. Major elements of this project include, the consolidation of driveways between the two intersections and fencing between the two intersections to prevent mid-block crossing.

For all alternatives, construction staging will be up to the contractor. During construction, one-way traffic control will be allowed in accordance with the Standard Plans, but may be restricted during daytime peak hours, and weekends due to higher traffic volumes. Access to businesses, cross streets, driveways and residences will be maintained during construction. In addition, pedestrian access and bicycle traffic will be maintained during construction. See Construction Impacts - Section 5 for more details.

Construction is anticipated to begin in 2022 and would last approximately 150 working days. Project features, including design elements of the project and standardized measures that are applied to all or most Caltrans projects are considered an integral part of the project and would be implemented, as applicable. This includes best management practices as well as the methods and measures in Caltrans Standard Plans, Caltrans Standard Specifications, and Caltrans Special Provisions.

Common Design features of Roundabouts

- Replace curbs, buffers, and sidewalks in the project limits;
- Potentially install rapid flashing beacons at select pedestrian crosswalks;
- Improve street lighting throughout the project limits;
- Construct crosswalk refuge areas within the roundabout splitter islands to assist pedestrians with crossing the roadway;
- Add architectural features between the sidewalks and the roadway to separate pedestrians from vehicular traffic;
- Reconstruct and maintain existing bike access throughout the project limits;

Alternatives

From the initial public open house, two alternatives were rejected, and two additional alternatives was developed. The current viable alternatives are Alternative 3, Alternative 4, Alternative 5, and the No Build alternative.

Alternative 3

This alternative will construct a roundabout at each intersection. The roundabout at West Sacramento Ave. (west) will be elliptical with an ICD of 125 feet at the curves while having direct exit from the Safeway parking lot. Entrance into Safeway would be from driveways before or after the roundabout. The roundabout at West Sacramento Ave. (east) will have an ICD of 110 feet with direct access to the strip mall located on the south side of Nord Avenue. This alternative also featured an east bound circulating lane at the West Sacramento (east) roundabout. This additional lane will help facilitate traffic heading east bound. This alternative will also feature a median island and a chain link fence between the two roundabouts to prevent mid-block crossing; sidewalks at the roundabout will be 10 feet wide to accommodate a shared use facility and 5 feet in between the two roundabouts. The fence installed, used to prevent mid-block crossing, shall be aesthetically pleasing, at pedestrian scale (which is up to 4'), and the design shall be in collaboration with the City of Chico.

Right-of-Way requirements for Alternative 3 will require acquisition of land from the Safeway parking lot and the Shell gas station on the north side of Nord Avenue and the entrance into the strip mall on the south side of Nord Avenue. The construction of the roundabouts will also cause the closure of several driveways on both sides of Nord Avenue. Driveways that are not directly affected by the ICD of the roundabout will need to be either reconfigured or eliminated because of the approaches to the roundabout.

Utilities within the project limits are all underground. Utility relocations will consist of sewer lines, other utility covers, manholes, and the California Water Service's water main pressure relief valve. Existing utilities, which are not in conflict, would be protected in place.

Alternative 4

This alternative would build a roundabout at West Sacramento (west) with signal improvements at West Sacramento (east). The roundabout would have an ICD of 125 feet at the curves and a direct access to the Safeway parking lot. Like Alternative 3, the sidewalks at the roundabout will be 10 feet wide to accommodate a shared use facility but, will conform back to the existing sidewalk once the roundabout is cleared. The second intersection will not have any geometric changes rather the signal timing will be adjusted, overlay the pavement from the roundabout to PM7.9, and remove redundant driveways.

Right-of-Way requirements for Alternative 4 will require acquisition of property from the Safeway parking lot only. Also, to reduce the number of conflict points for pedestrians and cyclist between the two intersections, like Alternative 3, several mid-block driveways will need to be eliminated (see attachment). Even if the recommended driveways are eliminated, there will still be access points at or near each intersection.

Within the project limits, all utilities are underground. Utility relocations will consist of sewer lines, other utility covers, manholes, and the California Water Service's water main pressure relief valve. Existing utilities, which are not in conflict, would be protected in place.

Alternative 5

This alternative would provide intersection improvement to West Sacramento Avenue (west) and signal improvements to both West Sacramento Avenue intersections. The intersection improvement consists of widening West Sacramento Ave (West) intersection to include a right

turn lane by reducing the size of the existing island that separated the main intersection from the stop controlled right turn. The stop controlled right turn will be converted into an entrance for the strip mall. The existing West Sacramento Ave. (west) sidewalk will be widened to accommodate a Class I multi-use route and overlay SR 32 between PM 7.6 and 7.9.

If Alternative 5 is chosen, no additional Right-of-Way is required. All work can be completed within State Right-of-Way. Some drainage inlets will need to be relocated, otherwise there is no utility conflict for this alternative.

Alternatives Considered but Rejected

Alternative 1

This alternative proposes to construct two roundabouts with no direct entrance into either the Safeway parking lot or the strip mall on the south side of SR 32. This alternative would require potential customers to use existing driveways outside of the roundabout to enter the shopping center. This alternative was rejected based on public input.

Alternative 2

This alternative proposes to construct two roundabouts with a direct entrance into the Safeway parking lot from the roundabout at West Sacramento (west) and no direct entrance to the strip mall from the roundabout at West Sacramento (east). This alternative would require the west bound traffic to maneuver around the West Sacramento (west) roundabout to gain entrance into the strip mall. The same maneuver is required around the West Sacramento (east) roundabout to head west bound again. The West Sacramento (east) roundabout also feature slip right lanes for traffic coming onto and leaving West Sacramento Avenue, from SR 32 (Nord Avenue). This option was also rejected due to public input.

No Build Alternative

The No Build Alternative was initially rejected in the PID phase because it does not satisfy the purpose and need for the project. This alternative will not reduce the number of collisions nor improve traffic operations.

Surrounding Land Uses and Setting

The project is in Butte County within the city of Chico. Compared to other areas in Butte County, the study area contains higher density and mixed land uses, as well as existing infrastructure for transit and non-motorized transportation. The existing land uses surrounding the proposed project area are developed and mainly consist of multi-family housing units and commercial shopping centers. The California State University (CSU) –Chico campus is located within the study area, approximately one block from the project limits but separated from the study area by the Union Pacific Railroad (UPRR) track.

North of Nord Avenue, there are several automotive businesses, apartment complexes and single-family homes. There is also a Shell gas station, a shopping center containing several small businesses including a Subway, a smoke shop, and a laundromat, and a Safeway and Walgreens. South of Nord Avenue, there are apartment complexes and a string of small commercial businesses, including a liquor store, various restaurants, and a Chevron station. Figure 9 in the Appendix identifies the businesses in the project area.

The land surrounding the project limits is designated in the Chico 2030 General Plan (General Plan) as commercial mixed-use (CMU), commercial services (CS), medium-high density residential (MHDR), and medium density residential (MDR) (City of Chico 2017a). Much of the surrounding land is designated as low density residential (LDR). The CSU campus, located southeast of the project site, is designated as public facilities and services (PFS). General Plan land use designations are shown in Figure 5 (see appendix).

General Plan Designation and Zoning

The land surrounding the project limits is zoned for community commercial (CC), services commercial (SC), MHDR, and MDR (City of Chico 2017b). Zoning Designations are shown in Figure 5 (see appendix).

Native American Consultation

Native American coordination was conducted with several local tribes, which may have an interest in the project area. Consultation letters were sent on January 4, 2018 to the tribes and individuals on the list. To date, only the Enterprise rancheria responded on January 8, 2018, stating that the project is outside their territory, so they have no concerns.

Permits and Approvals Needed

The proposed project would not require any special permits or approvals.

Figure 1: Project Vicinity Map



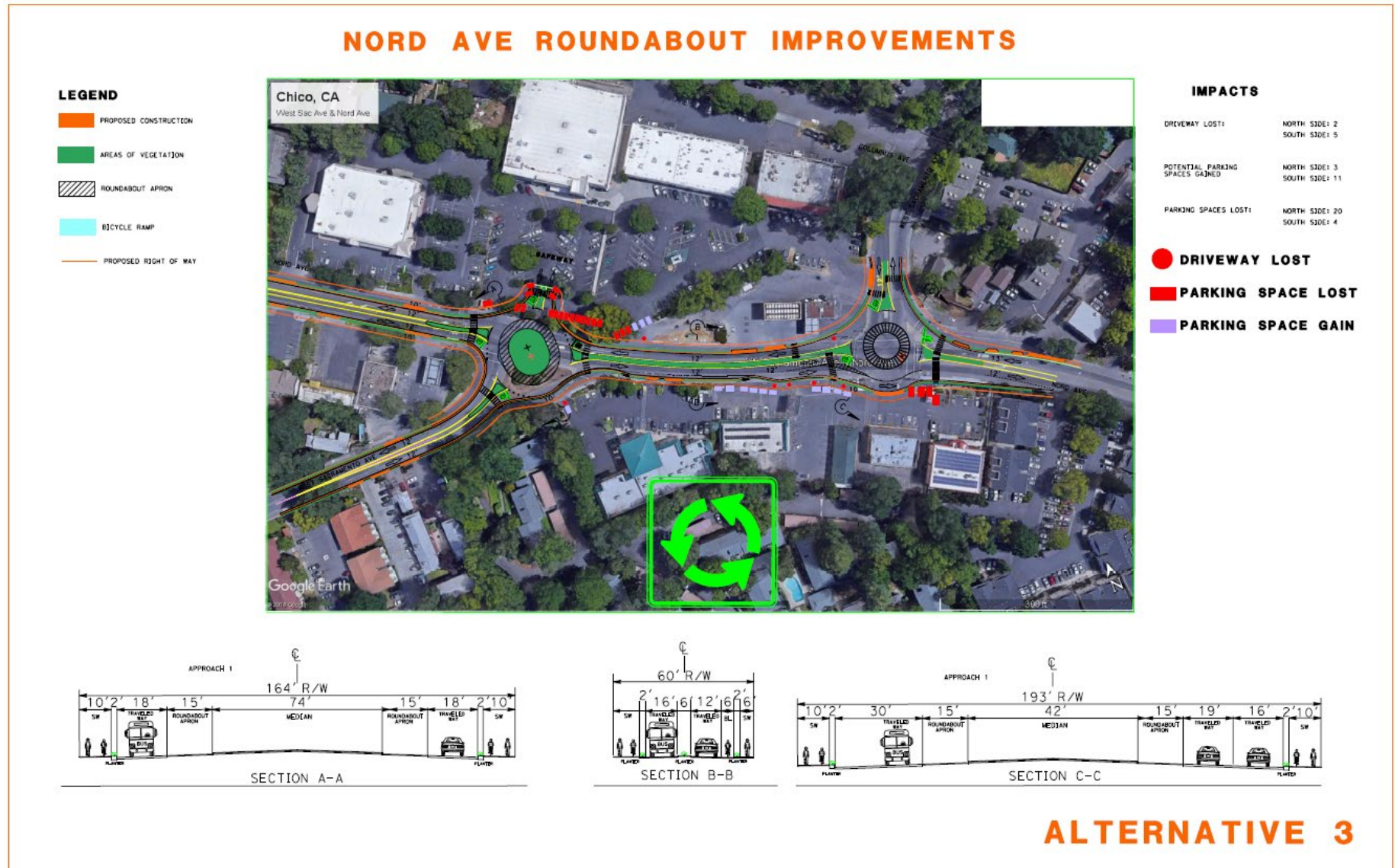
Figure 1
Project Vicinity

Figure 2: Project Location Map



Figure 2
Project Location

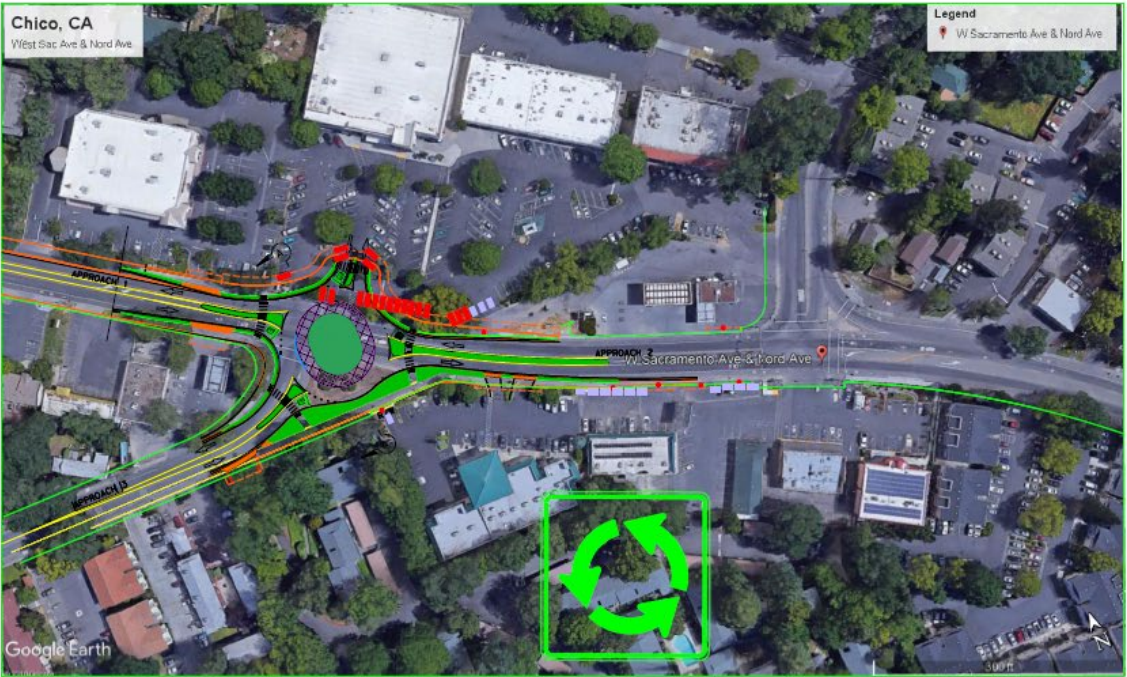
Figure 3: Project Layouts – Alternative 3



Alternative 4

NORD AVE ROUNDABOUT IMPROVEMENTS

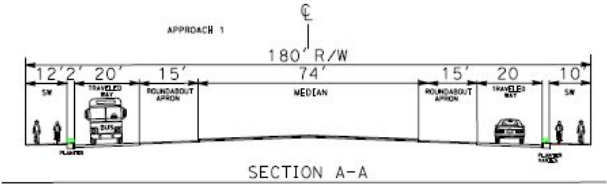
- LEGEND**
- PROPOSED CONSTRUCTION
 - AREAS OF VEGETATION
 - ROUNDABOUT APRON
 - BICYCLE RAMP
 - PROPOSED RIGHT OF WAY



IMPACTS

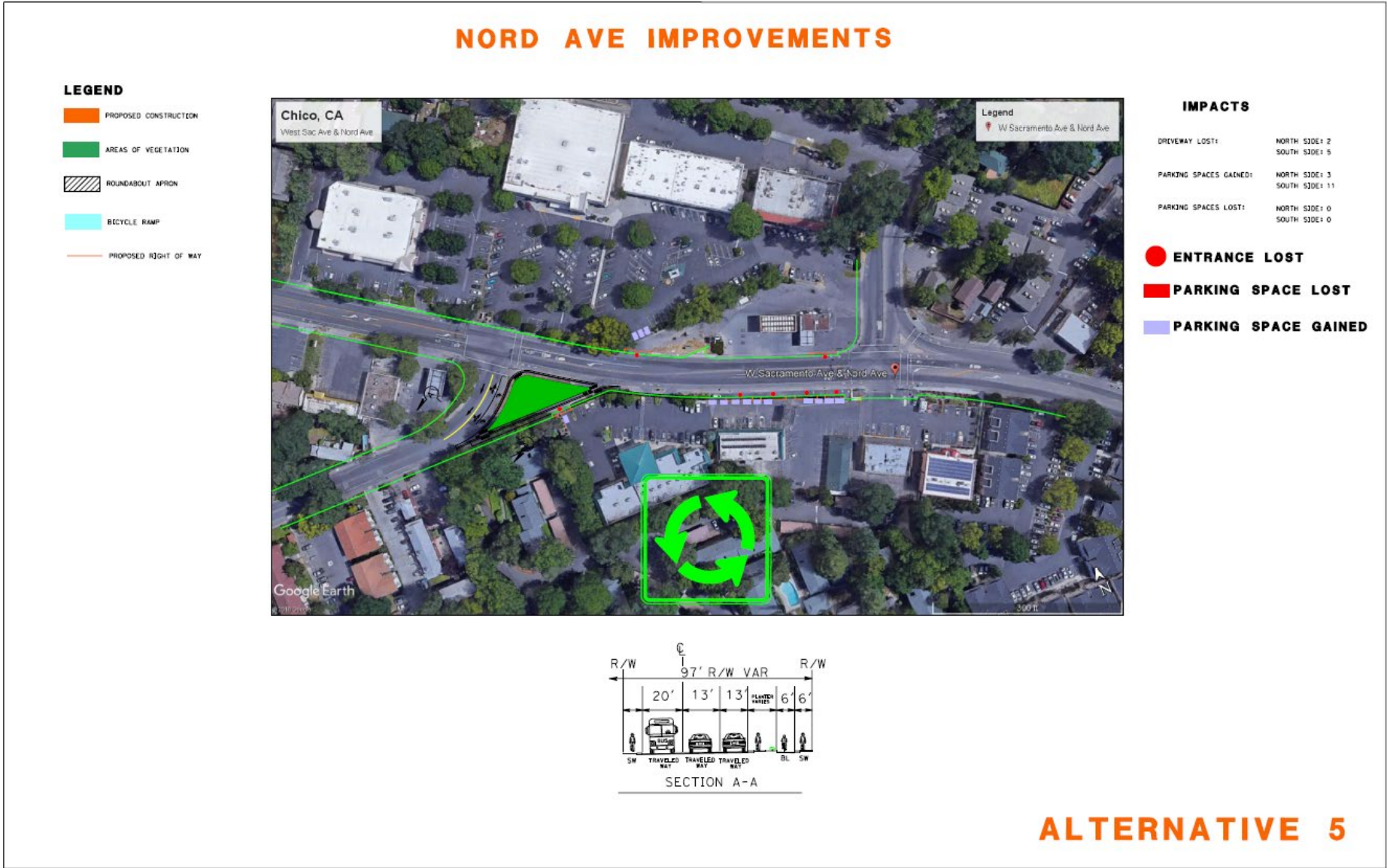
DRIVEWAY LOST:	NORTH SIDE:2 SOUTH SIDE:5
PARKING SPACES GAINED:	NORTH SIDE:3 SOUTH SIDE:11
PARKING SPACES LOST:	NORTH SIDE:20 SOUTH SIDE:10

● DRIVEWAY LOST
■ PARKING SPACE LOST
■ PARKING SPACE GAINED



ALTERNATIVE 4

Alternative 5



Section 2: Environmental Factors Potentially Affected/ CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance. The environmental factors checked below would be potentially affected by this project. See the checklist in Section 2 for additional information.

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

AESTHETICS

Explanation: “No Impact” determinations in this section are based on information provided in the Visual Impact Assessment (VIA) prepared December 12, 2018. **a)** No. Scenic vistas are often panoramic views that have a highly compositional and picturesque value. Within the project corridor, scenic vistas or views are blocked by existing buildings and mature trees. The proposed project features (roundabout and increased paved road) will have a low impact on the project corridor's scenic vistas. As such, the project will not have an adverse effect on scenic vistas. **b)** No. This project corridor is not an Eligible State Scenic Highway or Officially Designated State Scenic Highway. The proposed project will not substantially damage any scenic resources along the highway. The removal of existing trees along this corridor will have a low to moderate adverse impact on the visual quality but not result in significant visual impact. **c)**

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

No. The proposed project will create a low adverse effect on the visual character of the project corridor and its surroundings. The proposed roundabout will be noticeable visual change, but it will not alter the existing visual quality of the site. The loss of trees because of the project will not affect views that is not already seen to or from the roadway. No new sources of light or glare are anticipated.

AGRICULTURE AND FOREST RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" determinations in this section are based on California Department of Conservation and Natural Resources Conservation Service Farmland Maps as well as the description and location of the proposed project. No Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Williamson Act Land, forest land or timberland was identified within the project limits. Therefore, the proposed project would have no impact on farmland, Williamson Act land, timberland or forest land.

AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Air Quality and Noise Analysis prepared November 8, 2018. This project is exempt from all air quality conformity analysis requirements per Table 2 of 40 Code of Federal Regulations (CFR) 83.126, subsection “Safety – Safety improvement project. The proposed project would not change traffic volume, fleet mix, speed, or any other factor that would cause an increase in emissions relative to the no build alternative; therefore, this project would not cause an increase in operational emissions. The proposed project may result in the generation of short-term construction related emissions. The proposed project would comply with the Caltrans Standard Specifications Section 14-9 “Air Pollution Control” which requires compliance by the contractor with all applicable laws and regulations related to air quality, including the Butte County Air Quality Management District regulations and local ordinances. The proposed project would also comply with Caltrans Standard Specifications Section 18-1 “Dust Palliatives” which requires that water or a dust palliative be applied to the site and equipment as often as necessary to control fugitive dust emissions; consistent with their dust control plan. Construction equipment and vehicles would be properly tuned and maintained. Track out reduction measures would be used to minimize dust and mud deposits on roads affected by construction traffic. Refer to Section 5 - Construction Impacts for additional information about temporary construction emissions.

BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on information provided in the Biological Resources Evaluation Memo prepared 4/10/18 and project location and project scope. This project is not expected to result in direct or indirect impacts to biological resources due to the existing condition of the landscape within the project location. The project is set to occur in a highly disturbed, urbanized area with ornamental landscaping. Site visits conclude that there is no suitable habitat within the ESL that could support special status species. There will be no effect to and State and Federally listed species.

CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on information provided in the Cultural Resource Compliance Memo prepared October 15, 2018. The proposed project does not have the potential to affect any archaeological sites or other cultural resources due to its scope. No archeological properties listed within the National Register of Historic Places, California Historical Landmarks, California Inventory of Historic Resources, California Points of Historical Interest, or California Register of Historical Resources are present within the proposed project limits.

Although no indications of human remains were identified on the surface, applicable procedures would be followed upon the unanticipated discovery of human remains, in accordance with provisions of the California Health and Safety Code Sections 7052 and 7050.5 and the State Public Resources Code Sections 5097.9 to 5097.99. The proposed project would also comply with Caltrans Standard Specifications Section 14-7.03 “Discovery of Unanticipated Paleontological Resources” which sets forth procedures to secure unanticipated paleontological resources that may be discovered within or near the project area.

GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" and determinations in this section are based on project location and scope.

GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans' determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows the CEQA checklist and related discussions.			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				

Explanation: Refer to Section 4- Climate Change for additional information.

HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Initial Site Assessment provided February 16, 2017. Aerially Deposited Lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. If encountered, soil with elevated concentrations of lead would be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met. Since the project will likely involve excavation of soil potentially contaminated with ADL, a site investigation (SI) will be required to investigate in the anticipated disturbed areas. Appropriate specifications will be used to safely address lead in soil and traffic striping. Emergency services would be minimally impacted

HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Water Quality Assessment Exemption prepared November 20, 2018 and the project’s scope and location.

The project is located within an urbanized area containing streetscapes, sidewalks, gutters and drainage inlets. Big Chico Creek is the closest receiving waterbody to the project site. It is probable what highway

stormwater runoff would be conveyed to this creek, due to proximity. However, the general topography indicates that flow could be in the north-west direction. If so, drainage could be conveyed to the Lindo/Gulch Channel.

Urban MS4 Permit:

Per the Butte County's website: "Butte County's Storm Water Management Program is a requirement of Phase II of the National Pollutant Discharge Elimination System (NPDES) Program as ordered by the United States Environmental Protection Agency. The County's Program was required by federal law to be fully implemented by April 30, 2008."

<https://www.buttecounty.net/publicworks/Services/Stormwater-Program>

Per Caltrans' MS4 Permit:

a) The Department is expected to comply with the lawful requirements of municipalities and other local, regional, and/or other State agencies regarding discharges of storm water to separate storm sewer systems or other watercourses under the agencies' jurisdictions.

b) The Department shall include a *MUNICIPAL COORDINATION PLAN* in the SWMP. The plan shall describe the specific steps that the Department will take in establishing communication, coordination, cooperation, and collaboration with other MS4 storm water management agencies and their programs including establishing agreements with municipalities, flood control departments, or districts as necessary or appropriate.

Domestic Water Reservoir:

Per the 2014 – 2015 Storm Water Management Program's District 3 Work Plan, the project does not appear to be near a municipal or domestic water supply reservoir.

High Risk Watershed

The project is located within a "High Risk Receiving Watershed". High risk receiving watersheds are watersheds that drain to water bodies that are either listed on the CWA 303(d) List for sedimentation/siltation or turbidity, have a USEPA-approved Total Maximum Daily Load Implementation Plan for sediment; or have beneficial uses of Cold, Spawn, and Migratory. A project that meets at least one of the three criteria has a high receiving water risk.

The discharge of storm water runoff from construction sites has the potential to affect water quality standards, water quality objectives, and beneficial uses. Pollutants and sources typically encountered during construction includes sediment and non-storm water including: groundwater, water from cofferdams, dewatering, and water diversions; discharges from vehicle and equipment cleaning agents, fueling, and maintenance; waste materials and materials handling and storage activities.

Floodplain

The project is located within an urbanized area containing streetscapes, sidewalks, gutters, and drainage inlets. The proposed project is in Zone X of the most recent Federal Emergency Management Agency (FEMA) maps, indicating the area is outside of the 0.2% annual chance floodplain; the project will not have any impacts to floodplain given the project's location.

LAND USE AND PLANNING

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

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project. The proposed project would not divide an established community, conflict with any applicable land use plan, policy, or regulation, or conflict with any habitat conservation plan or natural community conservation plan. See the “Human Environment” section for more discussion.

MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on consultation with the hazardous waste specialist as well as the description and location of the proposed project. No mineral resources were identified within the project limits or would be affected by the proposed project.

NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on information provided in the Air Quality and Noise Analysis prepared November 8, 2018. The proposed project does not construct a new highway in a new location or substantially change the vertical or horizontal alignments. The existing roadway traffic volumes, composition, and speeds after construction of the proposed project would remain the same; therefore, permanent traffic noise impacts are not anticipated.

Noise from construction activities may intermittently dominate the environment in the immediate area of construction. The project would comply with Caltrans Standard Specifications Section 14-18.02 “Noise Control” which includes provisions for controlling and monitoring noise resulting from work activities. Refer to Section 5- Construction Impacts for additional information about construction noise.

POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project. The project is not anticipated to induce population growth or displace housing, businesses, or people. Minor permanent right-of-way acquisition would be required from various parcels, depending on the preferred Alternative chosen. Alternative 3 would require minor acquisition of land from the Safeway parking lot, the Shell gas station, and the south side of the entrance to the strip mall on the south side of Nord Ave. Alternative 4 would only require minor acquisition at the Safeway parking lot entrance. Alternative 5 would not require any new right of way all work can be completed within Caltrans right of way. Right-of-way acquisition would be limited to only the amount necessary to construct the project and property owners would be compensated according to fair market value.

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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” and “Less Than Significant Impact” determinations in this section are based on the description and location of the proposed project. The proposed project would not require new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives. The build alternatives would not result in direct impacts on medical facilities or fire or police stations; these minor impacts would be temporary. During construction, lane closures may be required. Any required closures would be coordinated with emergency service providers as to not hinder emergency response times. A traffic management plan (TMP) would be developed to ensure emergency vehicles and school bus routes are not impeded. See Utilities/Emergency Services section for more detail.

RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the description and location of the proposed project. No neighborhood parks, regional parks, or other recreational facilities would be affected by the proposed project, as there is no use to those resources.

TRANSPORTATION/TRAFFIC

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

Explanation: “No Impact” and “Less Than Significant Impact” determinations are based on information provided in the Transportation Management Plan (TMP) Data Sheet prepared December 20, 2018, the Community Impact Assessment (CIA) prepared January 2019, and the Traffic Operations Analysis Report prepared December 2018.

For all alternatives, construction staging will be up to the contractor. During construction, one-way traffic control will be allowed in accordance with the Standard Plans, but may be restricted during daytime peak hours, and weekends due to higher traffic volumes. The project would comply with Caltrans Standard Specifications 7-1.03 “Public Convenience”. Access to driveways, houses, and cross streets would be maintained. Emergency service vehicles, pedestrians, and bicyclists would be accommodated through the work zone.

TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" determinations in this section are based on information provided in the Cultural Resource Compliance Memo prepared October 15, 2018. No tribal cultural resources were identified within the project limits or would be affected by the proposed project.

UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" and "Less Than Significant Impact" determinations in this section are based on the description and location of the proposed project and coordination with the Project Engineer. Utilities within the project limits are all underground. Utility relocations will consist of sewer lines, other utility covers, manholes, and the California Water Service's water main pressure relief valve. Existing utilities, which are not in conflict, would be protected in place.

MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" and "Less Than Significant Incorporated" determinations in this section are based on the technical analysis of the proposed project.

Section 3: Affected Environment, Environmental Impacts, and Avoidance, Minimization, and/or Mitigation Measures

Human Environment

LAND USE

Existing and Future Land Use

The project is located in the city of Chico in Butte County. Compared to other areas in Butte County, the study area contains higher density and mixed land uses, as well as existing infrastructure for transit and non-motorized transportation. The existing land uses surrounding the proposed project area are developed and mainly consist of multi-family housing units and commercial shopping centers. The California State University (CSU) –Chico campus is located within the study area, approximately one block from the project limits but separated from the study area by the Union Pacific Railroad (UPRR) track.

According to the Butte County Association of Governments' (BCAG's) 2016 Regional Transportation Plan/Sustainable Communities Strategy for Butte County (RTP/SCS), future growth within the study area consists of compact infill developments on underutilized lands, or redevelopment of existing developed lands (Butte County Association of Governments 2016).

North of Nord Avenue, there are several automotive businesses, apartment complexes and single-family homes. There is also a Shell gas station, a shopping center containing several small businesses including a Subway, a smoke shop, and a laundromat, and a Safeway and Walgreens. South of Nord Avenue, there are apartment complexes and a string of small commercial businesses, including a liquor store, various restaurants, and a Chevron station.

The land surrounding the project limits is designated in the Chico 2030 General Plan (General Plan) as commercial mixed-use (CMU), commercial services (CS), medium-high density residential (MHDR), and medium density residential (MDR) (City of Chico 2017a). Much of the surrounding land is designated as low density residential (LDR). The CSU campus, located southeast of the project site, is designated as public facilities and services (PFS). General Plan land use designations are shown in Figure 5.

The land surrounding the project limits is zoned for community commercial (CC), services commercial (SC), MHDR, and MDR (City of Chico 2017b). Current zoning is shown in Figure 5.

BCAG's Butte County 2016 Regional Transportation Improvement Program (RTIP) identifies five projects in the county, two of which are in Chico but not within the vicinity of the proposed project (Butte County Association of Governments 2015). BCAG's RTP/SCS—which identifies long-term policies, programs, and projects that are needed to improve the regional transportation system—identifies several projects on or near SR 32, but none are in the vicinity of the proposed project.

The City of Chico (City) has identified several development projects along Nord Avenue:

- Westside Place 1—Nord Avenue/Purcell Lane
- Westside Place 2—Nord Avenue
- Student Apartments—1118 Nord Avenue

- Nord Avenue Apartments—330 Nord Avenue

Westside Place 1 has been approved but is not yet under construction. Westside Place 2 has not yet been approved. Both the Student Apartments and the Nord Avenue Apartments are currently under construction (City of Chico 2018).

No other relevant projects are identified by Caltrans within Chico (California Department of Transportation 2018a).

Consistency with State, Regional, and Local Plans and Programs

This section discusses the affected environment, environmental consequences, and avoidance and/or minimization measures for consistency with state, regional, and local plans that are applicable to the proposed project.

Butte County Association of Governments

Butte County is part of BCAG, which is responsible for releasing the region's regional transportation plan. BCAG adopted the RTP/SCS in December 2016 (Butte County Association of Governments 2016). The proposed project is not listed in the RTP/SCS as a regionally significant project.

Nord Avenue Corridor Plan

The Nord Avenue Corridor Plan (Glatting et al. 2006) contains a summary of concepts to improve the Nord Avenue corridor for motorists, public transit users, bicyclists, and pedestrians. This plan includes the vision of shifting vehicle traffic to other modes by 15–20 percent, improving bicycle and pedestrian facilities, increasing connectivity, and increasing intersection safety.

Chico Urban Area Bicycle Plan

The Chico Urban Area Bicycle Plan (City of Chico 2012) describes the City's strong commitment to bicycle transportation. The plan assesses the needs of bicyclists in the community and plans for the provision of facilities in the future. The plan describes land uses in the City and maps the

existing and planned bike facilities. The overall goals of the plan that are relevant to the proposed project are as follows:

Goal 1: Provide safe and direct routes for cyclists between and through residential neighborhoods, commercial areas, schools, and other major destinations within the Chico Urban Area.

Goal 2: Improve safety, efficiency, and comfort for bicyclists and pedestrians through traffic engineering and law enforcement efforts and provide for shaded through-routes, where possible.

Goal 6: Improve bicycling safety through driver and cyclist education programs.

Goal 7: Develop a bikeway system that encourages and facilitates recreational use.

City of Chico 2030 General Plan

Land use planning in the study area is governed by the General Plan (City of Chico 2017). The following General Plan policies from the circulation element are relevant to the proposed project.

Goal CIRC-1: Provide a comprehensive multimodal circulation system that serves the build-out of the Land Use Diagram and provides for the safe and effective movement of people and goods.

Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.

Goal CIRC-3: Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.

Goal CIRC-4: Design a safe, convenient, and integrated pedestrian system that promotes walking.

Goal CIRC-5: Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.

Goal CIRC-8: Provide parking that supports the City-wide goals for economic development, livable neighborhoods, sustainability, and public safety.

Environmental Consequences

The No Build Alternative would not affect existing land uses because the proposed project would not be constructed and there would be no change in land use.

The proposed project would improve safety for all modes of transportation as well as reduce delay in the study area. Land acquisitions would be required for all alternatives; however, they would not change the land use designations or zoning in the study area. Overall land use patterns in the study area would remain the same, and the project would improve the traffic flow and safety throughout the study area.

The build alternatives do not conflict with BCAG'S RTP/SCS. The build alternatives are also consistent with the vision of the Nord Avenue Corridor Plan and the 2012 Chico Urban Area Bicycle Plan by enhancing bicyclist and pedestrian safety and constructing intersection

improvements that would increase safety and reduce conflicts in the study area. See Table 1 below for more information.

Table 1. Consistency with State, Regional, and Local Plans and Programs

Plan/Element/Goal/Objective/Policy	Build Alternatives (Alternatives 1–3)	Alternative 4	Alternative 5	No Build Alternative
BCAG 2016 RTP/SCS	Consistent. The proposed project is not listed in the RTP/SCS and would complement—not prohibit—other regionally significant projects in Chico by improving safety and operations.	Consistent. The proposed project is not listed in the RTP/SCS and would complement—not prohibit—other regionally significant projects in Chico by improving safety and operations.	Consistent. The proposed project is not listed in the RTP/SCS and would complement—not prohibit—other regionally significant projects in Chico by improving safety and operations.	Consistent. The proposed project is not listed in the RTP/SCS.
Chico Urban Area Bicycle Plan Goals 1, 2, 6, 7	Consistent. The proposed project would improve safety and would provide a more direct route for bicyclists by eliminating conflict points and constructing roundabouts, which would reduce collisions and improve traffic flow. Intersection improvements would also encourage bicycle use and safety.	Consistent. The proposed project would improve safety and would provide a more direct route for bicyclists by eliminating conflict points, which would reduce collisions. Intersection improvements would also encourage bicycle use and safety.	Consistent. The proposed project would improve safety and would provide a more direct route for bicyclists by eliminating conflict points, which would reduce collisions. Intersection improvements would also encourage bicycle use and safety.	Inconsistent. Under the No Build Alternative, no safety improvements would occur. Future growth would continue to exacerbate conflicts between motorists, bicyclists, and pedestrians.
Chico General Plan Goal CIRC-1, Policies CIRC 1.1, 1.4, 1.7, 1.8, and Actions CIRC 1.1.1, 1.7.1, and 1.8.3	Consistent. Alternatives 1–3 would improve the operations throughout the study area by reducing collisions. This would help accommodate future growth, maintain LOS, and provide clear transportation routes. Coordination between the City, BCAG, and Caltrans is ongoing.	Consistent. Alternative 4 would convert one intersection to a roundabout as well as make intersection improvements. These changes would improve the operations throughout the study area by reducing collisions, although not as effectively as Alternatives 1–3. This alternative would help accommodate future growth, maintain LOS, and provide clear transportation routes. Coordination between the City, BCAG, and Caltrans is ongoing.	Consistent. Alternative 5 involves intersection improvements at both intersections and would reduce conflict points. This alternative would help accommodate future growth, maintain LOS, and provide clear transportation routes. Coordination between the City, BCAG, and Caltrans is ongoing.	Inconsistent. Under the No Build Alternative, no safety or operational improvements would occur. Collision rates would not be addressed, and traffic operations would not be improved. Both of these issues would continue to be a problem as growth increases in the future.
Chico General Plan Goal CIRC 2, Policies CIRC	Consistent. Alternatives 1–3 would enhance safety and mobility for all modes of transportation,	Consistent. Alternative 4 would enhance safety and mobility for all modes of	Consistent. Alternative 5 would enhance safety and mobility for all modes	Inconsistent. Under the No Build Alternative, no safety

2.1, 2.2, and Actions CIRC 2.1.1, 2.1.2, 2.1.3, 2.2.2, and 2.2.3	including bicycling and pedestrian travel. The roundabouts would provide greater connectivity by improving traffic flow and reducing conflict points. Eliminating driveways would improve safety for all modes of transportation.	transportation, including bicycling and pedestrian travel. The roundabout and intersection improvements would provide greater connectivity by improving traffic flow and reducing conflict points. Eliminating driveways would improve safety for all modes of transportation.	of transportation, including bicycling and pedestrian travel. The intersection improvements would improve traffic flow and reduce conflict points. Eliminating driveways would improve safety for all modes of transportation.	improvements would occur. Future growth would continue to exacerbate conflicts between motorists, bicyclists, and pedestrians.
Chico General Plan Goal CIRC-3, Policies CIRC 3.1, 3.2, 3.4, and Actions CIRC 3.1.1 and 3.1.2	Consistent. Alternatives 1–3 would enhance safety and mobility for bicyclists by eliminating driveways and conflict points and improving traffic flow in the study area. The existing Class 1 bicycle facilities would be maintained, which is also consistent with the <i>2012 Chico Urban Area Bicycle Plan</i> .	Consistent. Alternative 4 would enhance safety and mobility for bicyclists by eliminating driveways and conflict points and providing intersection improvements, which would improve traffic flow in the study area. The existing Class 1 bicycle facilities would be maintained, which is also consistent with the <i>2012 Chico Urban Area Bicycle Plan</i> .	Consistent. Alternative 5 consists of intersection improvements that would improve traffic flow in the study area and reduce conflict points on both sides of SR 32. The existing Class 1 bicycle facilities would be maintained, which is also consistent with the <i>2012 Chico Urban Area Bicycle Plan</i> .	Inconsistent. Under the No Build Alternative, no improvements to safety or traffic flow would occur, and there would continue to be conflicts between motorists and bicyclists, particularly as growth increases in the future.
Chico General Plan Goal CIRC-4, Policies CIRC 4.1, 4.2, 4.3, and Actions CIRC 4.3.1 and 4.3.2	Consistent. Alternatives 1–3 would enhance safety and mobility for pedestrians by eliminating driveways and conflict points and improving traffic flow in the study area, which would reduce hazards for pedestrians. Sidewalks would be replaced and roundabouts would include refuge areas for pedestrians. Rapid flashing beacons may be installed at select crosswalks, and street lighting would be improved.	Consistent. Alternative 4 would enhance safety and mobility for pedestrians by eliminating driveways and conflict points and providing intersection improvements, which would improve traffic flow in the study area and reduce hazards for pedestrians. Sidewalks would be replaced and roundabouts would include refuge areas for pedestrians. Rapid flashing beacons may be installed at select crosswalks, and street lighting would be improved.	Consistent. Alternative 5 consists of intersection improvements that would improve traffic flow in the study area and reduce conflict points on both sides of SR 32. Curb, gutter, and sidewalks would be improved to meet ADA standards. Rapid flashing beacons may be installed at select crosswalks, and street lighting would be improved.	Inconsistent. Under the No Build Alternative, no improvements to safety or traffic flow would occur, and there would continue to be conflicts between motorists and pedestrians, particularly as growth increases in the future.

Chico General Plan Goal CIRC-5	Consistent. Alternatives 1–3 are consistent with this policy because improving traffic flow and operations are supportive of a functional transportation system.	Consistent. Alternative 4 is consistent with this policy because improving traffic flow and operations are supportive of a functional transportation system.	Consistent. Alternative 5 is consistent with this policy because improving traffic flow and operations are supportive of a functional transportation system.	Inconsistent. Under the No Build Alternative, no improvements to roadway operations and traffic flow would occur. This could impede all modes of transportation, including public transit, particularly as population growth continues to increase.
Chico General Plan Goal CIRC-8, and Policies CIRC 8.1, 8.2 and 8.3	Consistent. Although several parking spaces would be removed under Alternatives 1–3, parking supply would be within the guidelines of the City's municipal code.	Consistent. Although several parking spaces would be removed under Alternative 4, parking supply would be within the guidelines of the City's municipal code.	Consistent. Although several parking spaces would be removed under Alternative 5, parking supply would be within the guidelines of the City's municipal code.	Consistent. Under the No Build Alternative, there would be no change in parking.

Source: City of Chico 2017c.

ADA = Americans with Disabilities Act.

BCAG = Butte County Association of Governments. Caltrans = California Department of Transportation.

CEQA/NEPA = California Environmental Quality Act/National Environmental Policy Act. City = City of Chico.

LOS = level of service.

RTP/SCS = 2016 *Regional Transportation Plan/Sustainable Communities Strategy for Butte County*. SR = State Route.

Avoidance and/or Minimization Measures

No potential conflicts with current or planned land uses in the study area are anticipated because the proposed project would improve existing safety and operational conditions rather than accommodate future planned or proposed development projects. Therefore, no avoidance, or minimization measures are required.

The proposed project will have no affect related to land use.

GROWTH

Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA guidelines (Section 15126.2[d]) require that environmental documents "...discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment..."

Environmental Consequences

This analysis is based on the Community Impact Assessment (CIA) prepared January 2019. In that CIA, a first cut screening analysis was used to analyze the project's potential to induce growth; the analysis concluded that the project would not influence growth, therefore no further analysis is needed. Below is the first cut screening analysis for all build alternatives.

The analysis of growth-related, indirect impacts follows the first-cut screening guidelines provided in Caltrans' Guidelines for Preparers of Growth-Related, Indirect Impact Analyses (California Department of Transportation 2006). The first-cut screening analysis focused on addressing the following questions for all build alternatives.

- To what extent would travel times, travel cost, or accessibility to employment, shopping, or other destinations be changed? Would this change affect travel behavior, trip patterns, or the attractiveness of some areas to development over others?

Implementing Alternatives 1–3 would involve converting two signalized intersections on SR 32/Nord Avenue at West Sacramento Avenue (East) and at West Sacramento Avenue (West) and replacing them roundabouts. Alternative 4 entails constructing one roundabout at the West Sacramento Avenue (West) intersection and implementing intersection improvements at the West Sacramento Avenue (East) intersection. Both intersections would be improved under Alternative 5.

Under Alternative 1, both roundabouts would be three-legged and would not provide access to business parking lots. Two driveways would be removed from the north side of SR 32, and five would be removed from the south side. New driveways would be constructed on both sides of SR 32 between the intersections.

Under Alternative 2, the roundabout at the West Sacramento Avenue (West) intersection would be four-legged and would provide direct access to the Safeway/Walgreens parking lot. Two driveways would be removed from the north side of SR 32, and five would be removed from the

south side. New driveways would also be constructed on both sides of SR 32 between the intersections.

Under Alternative 3, both roundabouts would be four-legged and would provide access to business parking lots on both sides of SR 32, as well as provide a bypass lane eastbound on West Sacramento Avenue and new driveways on both sides of SR 32. Two driveways would be removed from the north side of SR 32, and five would be removed from the south side. New driveways are proposed on both sides of SR 32 as well as West Sacramento Avenue.

The roundabout proposed under Alternative 4 would provide direct access to the Safeway/Walgreens parking lot. Five driveways would be removed from the south side of SR 32 with this alternative, but new driveways would be constructed in front of the Bulldog Taqueria.

Under Alternative 5, driveways would be removed from the south side of SR 32, and two would be removed from the north side. Although access points would be reduced, access would still be maintained through the other existing entrances on both sides of SR 32.

Accessibility to these businesses would be modified under each of the alternatives; however, modifications would not prohibit access to businesses on either side of SR 32. Access would be provided either by a new roundabout entrance, new driveways, or existing driveways. Although the proposed project would improve traffic flow, it is not capacity-increasing. There would be no changes to land use, and no new trips would be generated.

Furthermore, because SR 32/Nord Avenue is an existing roadway in the City of Chico, the proposed project would not provide additional access to undeveloped areas. Therefore, access to employment, shopping, or other destinations is not expected to change.

- To what extent would change in accessibility affect growth or land use change—its location, rate, type, or amount?

As detailed above, the build alternatives involve changing the access points to local businesses on SR 32 between the West Sacramento Avenue (East) and West Sacramento Avenue (West) intersections to reduce conflict points and improve safety and traffic flow. Additional capacity would not be created. Constructing roundabouts and intersection improvements in this area would not provide access to new areas or change accessibility in a way that would exert growth pressure. In addition, because this is an urban area with relatively strict land use controls laid out in the City's General Plan, the proposed modifications would not lead to additional planned or unplanned development.

- To what extent would resources of concern be affected by this growth or land use change?

Project-related growth is not reasonably foreseeable because the build alternatives would not increase capacity. While some access points would be removed, access will be maintained under all of the alternatives either through a new roundabout connection, a new driveway, or existing driveways. The only land use changes under Alternatives 1, 3, 4, and 5 would be the incorporation of slivers of ROW, while Alternative 2 would require one full property acquisition to construct the West Sacramento Avenue (East) roundabout. Project-related growth is not anticipated to occur. Based on the above first-cut screening, no additional analysis related to growth is required for the build alternatives.

The proposed project is expected to have no impacts related to growth.

COMMUNITY IMPACTS

Environmental Justice

REGULATORY SETTING

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2019, this was \$25,750, per year, for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

AFFECTED ENVIRONMENT

Analysis of environmental justice impacts is a two-step process; the first is determining the presence of protected populations (minority or low-income populations), and the second is determining if the project has a disproportionate adverse impact on those protected populations. According to the guidance provided in Caltrans Standard Environmental Reference, Chapter 4, Community Impact Assessment, environmental justice and equity is determined based on the comparison of impacts on minority and low-income groups and impacts on non-minority or higher income populations. Impacts are considered disproportionate if they are more severe or greater in magnitude for minority and low-income populations. Impacts can include noise, air quality, water quality, hazardous waste, community cohesion, aesthetics, economic vitality, accessibility, safety, and construction impacts.

The study area for the environmental justice analysis consists of the census block groups within 0.5 mile of the proposed ROW. Block groups were used instead of census tracts to provide a more detailed look at the area to determine if environmental justice populations are present. To determine if environmental justice populations exist within the study area, a demographic profile of the study area block groups was developed to identify low-income and minority populations present in the study area. For the purposes of this analysis, a block group was considered to contain an environmental justice population if:

- The total minority population of the block group is more than 50 percent of the total population or is substantially higher than the city or county where it is located; or
- The proportion of the block group population that is below the federal poverty level exceeds that of the city or county where it is located.

Demographic data for the study area indicates that the proportion of the population composed of Hispanic or Latino and Asian residents is notably larger than the city or county as a whole, particularly in Census Tract 5.02, Block Groups 1 and 2 and Census Tract 6.04, Block Groups 1 and 3 (Figure 4 – see appendix).

The median household income in several census tracts is lower than the rest of the city or county and is lower than the U.S. Census–defined poverty level for a household of four. In addition, data from the study area indicate that the percentage of individuals living below the poverty threshold is higher than it is for the county as a whole (see Table 2).

Table 2. Existing Regional and Local Employment and Income Characteristics

Area	Total Labor Force	% Unemployment Rate	Median Household Income (\$)	% Families below Poverty Level	% All People below Poverty Level
Butte County	102,069	10.7	44,366	12.4	21.3
City of Chico	54,004	0.7	45,290	12.4	23.9
Census Tract 5.01	1,932	9.5	48,929	2.2	23.3
Census Tract 5.02	2,245	16.9	18,766	49.5	60.4
Census Tract 11	2,001	12.2	27,222	18.9	47.5
Census Tract 10	2,369	14.5	32,841	24.6	34.5
Census Tract 6.03	1,571	8.1	25,809	13.3	49.6
Census Tract 6.04	2,731	11.9	16,971	57.1	65.0

Source: U.S. Census Bureau 2018.

Given the high percentage of minority populations and low-income populations found in the study area, environmental justice populations are present within the study area, and analysis of effects related to environmental justice populations is warranted. The project is subject to the provisions of EO 12898.

ENVIRONMENTAL CONSEQUENCES

NO BUILD ALTERNATIVES

The No Build Alternative would not affect environmental justice populations because the proposed project would not be implemented.

BUILD ALTERNATIVES

Minority and low-income groups are present within the study area; therefore, environmental justice populations are considered to be present. Potential effects of a proposed project are typically experienced in the area adjacent to and immediately surrounding the location of the project. Summarized below are the impacts related to air quality, noise, traffic and transportation, community cohesion, aesthetics, and displacements and relocations on environmental justice populations and the measures designed to avoid or reduce impacts.

Air Quality

As discussed in the air quality and noise analysis prepared for the project (California Department of Transportation 2018b), short-term degradation of air quality may occur due to the release of fugitive dust generated by excavation, grading, hauling, and other construction-

related activities. Exhaust emissions from construction equipment are also expected. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions. These emissions would be temporary and transitory in nature and would be limited to the immediate area surrounding the construction site. Caltrans Standard Specifications, required for all construction contracts, would reduce construction emissions.

The build alternatives would not change traffic volume, fleet mix, or any other factor that would cause an increase in emissions, and air quality impacts are not anticipated. Construction impacts would be experienced equally throughout the study area, not just in areas with environmental justice populations. Minimization measures are included to reduce these impacts. Therefore, the build alternatives would not result in disproportionately high and adverse air quality effects on environmental justice communities.

Noise

As discussed in the air quality and noise analysis prepared for the project (California Department of Transportation 2018b), noise from construction activities would result in the operation of heavy construction equipment and arrival and departure of heavy trucks. Construction noise levels will vary on a day-to-day basis during each phase of construction depending on the specific task being completed. Mitigation measures and adherence to Caltrans Standard Specifications would reduce temporary noise impacts. Long-term impacts on noise are not anticipated. Noise impacts would be temporary, and minimization measures are included to reduce these impacts. Noise impacts would be experienced equally throughout the study area, not just in areas with environmental justice populations. The build alternatives would not result in disproportionately high and adverse noise effects on environmental justice communities.

Traffic/Transportation

Temporary impacts on circulation and access would result from construction activities. Work that requires partial roadway closures would occur mostly during non-peak commute hours, at night, or on weekends. While the impacts would be experienced by the environmental justice communities adjacent to the project, these temporary construction impacts would affect all populations equally along proposed alignment, not solely or disproportionately environmental justice communities. In addition, a TMP would be implemented to address impacts related to traffic and transportation, reducing potential impacts. Construction of the build alternatives would comply with all appropriate, necessary, and required construction safety measures.

The project would benefit a large and diverse population, including motorists, residents, and businesses by improving safety and circulation in the study area. Implementation of the build alternatives would improve the connectivity of the roadway network for all users of the transportation system, including environmental justice populations. Construction of the build alternatives would have a beneficial effect on safety for all groups in the study area, including environmental justice communities. Therefore, neither construction nor operation of the build alternatives would result in a disproportionately high and adverse traffic/transportation effects on environmental justice communities.

Community Cohesion

The build alternatives would not reduce community cohesion because it would not introduce a barrier that would divide the community, separate residences from community facilities, or result in substantial growth. Access would be maintained at all businesses in the study area. Therefore, neither construction nor operation of the build alternatives would result in disproportionately high and adverse effects related to community cohesion on environmental justice communities.

Aesthetics

The build alternatives would change the aesthetic character of the study area by introducing roundabouts under Alternatives 1–4. No major aesthetic changes would occur under Alternative 5. The elements that would result in the greatest visual impacts would be the new roundabouts, the ROW acquisitions that would affect residential site features, parking, and landscaping. Alternative 2 would entail the greatest visual changes, with the acquisition of one commercial property. The visual changes would be beneficial, as they would entail more facilities for bicyclists and pedestrians. Construction of the build alternatives would introduce construction equipment and staging areas that would not be compatible with the existing aesthetic character in the study area; however, the effects would be short-term and limited to the construction period. Therefore, the build alternatives would not result in disproportionately high and adverse effects related to aesthetics on environmental justice communities.

Displacements/Relocations

No residential properties or business properties would be displaced as a result of the build Alternatives 3, 4 and 5. Therefore, the build alternatives would not result in disproportionately high and adverse effects related to displacements and relocations on environmental justice communities.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Based on the above discussion and analysis, the build alternatives would not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

The proposed project would no effect towards environmental justice populations.

UTILITIES/EMERGENCY SERVICES

Regulatory Setting

Affected Environment

Discussions in this section are based on the Community Impact Assessment (CIA) prepared January 2019. Utilities and emergency services are described below.

Water service in the study area is provided by the California Water Service Company (Cal Water). Cal Water has 25 separate water systems that serve 63 communities in California. The study area is in Cal Water's Chico-Hamilton City District, which serves the City of Chico, Hamilton City, and the surrounding areas in unincorporated Butte County (City of Chico 2010).

The City of Chico maintains facilities to convey, treat, and dispose of municipal wastewater generated within city limits. Wastewater in the city is either discharged to septic systems or routed to the sanitary sewer system. Wastewater that is discharged to septic systems eventually percolates into the aquifer underlying the city (City of Chico 2010).

Solid waste services for the City of Chico are provided by North Valley Waste Management and Norcal Waste Systems, and electric and natural gas service in Butte County, including the Planning Area, is provided by Pacific Gas and Electric (PG&E).

The City of Chico Police Department provides police services in the study area. It comprises over 140 full-time employees, with an additional 100 police volunteers, including Volunteers in Police Service, Explorers, Chaplains, and Interns. In 2017, most calls were dispatched to the downtown area near the CSU campus (City of Chico 2017e). The police department is located at 1460 Humboldt Road, approximately 2.4 miles east of the project limits.

The City of Chico Fire Department (CDF) provides fire protection and emergency medical services in the study area. The CFD has mutual aid agreements with the California Department of Forestry and Fire Protection (Cal-Fire) and the Butte County Fire Department (City of Chico 2010). The project site is approximately 2 miles from three different fire stations: Station 2 at 182 E 5th Street, the South Chico Station at 842 Salem Street, and Station 6 at 5244 SR 32.

Environmental Consequences

Any required utility coordination and service disruptions would be minimized to the extent feasible and would be communicated with customers in advance of any disruption to allow for alternative service arrangements.

The build alternatives would not result in direct impacts on medical facilities or fire or police stations. During construction, lane closures may be required. Any required closures would be coordinated with emergency service providers so as not to hinder emergency responses.

The build alternatives are not anticipated to adversely affect response time for emergency services associated with fire station or police department personnel. The build alternatives may improve response times of emergency services by improving traffic flow and reducing delay. In addition, the build alternatives are intended to reduce conflicts in the study area, which would result in fewer emergency service calls.

Avoidance and/or Minimization Measures

The proposed project would have minimal effect on utilities and emergency services during construction; however, they would be temporary and minimized.

Caltrans will coordinate utility relocation work with the affected utility companies to minimize disruption of services to customers in the area during construction. If previously unknown underground utilities are encountered, Caltrans will coordinate with the utility provider to develop plans to address the utility conflict, protect the utility if needed, and limit service interruptions. Any short-term, limited service interruptions of known utilities will be scheduled well in advance, and appropriate notification will be provided to users.

Any required closures would be coordinated with emergency service providers so as not to hinder emergency responses. As part of construction, the project proponents will prepare and implement a traffic management plan (TMP) to avoid and minimize potential impacts. The TMP

would ensure emergency vehicles and school bus routes are not impeded. The TMP would reduce impacts of the proposed project on temporary access and circulation caused by potential traffic delays during construction.

TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Regulatory Setting

The Department, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

Discussions in this section are based on the Community Impact Assessment (CIA) prepared January 2019 and the Traffic Operations Analysis Report prepared December 2018 and the Butte County SR 32 Roundabout at Sacramento Avenue – Pedestrian Travel Technical Report prepared December 2018.

Bicycles and Pedestrians

In the City of Chico, about 1,570 people, or approximately 5.5 percent of the workforce bike to work according to the 2010 Census. Based on this, it is estimated that approximately 1930 people bicycle to work in the overall urban area.

Estimates of numbers of bicycle to school commuters are more difficult to calculate, because there are no official sources of this type of data. A major source of bicycle to school commuters is CSUC, where Traffic Engineering estimates that 7,000 persons bicycle to the University on a daily basis. Elementary, junior high, and high schools also generate bicycle traffic. A Caltrans' Statewide Travel Survey estimates that 3.4 percent of Butte County students bicycle to school on a regular basis. Based on total public-school enrollment of 15,000, it is estimated that this adds an additional 510 bicycle commuters per school day. Combined with bicycle-to-work figures, the current total of bicycle commuters in the Chico Urban Area is estimated at 9,440, or about 9 percent.

According to the City of Chico General Plan, the population of the urban area is expected to increase to approximately 127,000 people within the next 15 - 25 years. With the implementation of the policies for bikeways included in the General Plan, as well as the safe, well-marked routes planned herein, the cycle commute patterns are forecasted to be up to 9 percent of the new population. Bicycle to school commuting is also expected to increase. Total public-school enrollment is expected to grow to 22,820 in FY 2013-14, thus adding another 780 bicyclists. CSUC, on the other hand, is close to its capped enrollment level, so no significant growth in enrollment or bicycle commuters is anticipated. Combined with existing numbers, the total amount of bicycle commuters is expected to reach approximately 12,210 at buildout.

Existing pedestrian and bicycle movements were collected along existing pedestrian facilities in the Project area as documented in the Traffic Operational Analysis Report prepared for the Project. Results of the existing pedestrian and bicycle counts in the Project area indicate that approximately 463 pedestrians and 245 bicyclists traverse the West Sacramento Avenue (East) intersection at SR 32 (Nord Avenue) on a daily basis. Results also show that approximately 752 pedestrians and 412 bicyclists traverse the West Sacramento Avenue (West) intersection at SR 32.

Circulation and Parking

SR 32 is an east-west state highway that begins to the west in Glenn County and terminates to the east at its junction with SR 89 in Tehama County. In the city of Chico, SR 32 is a two-lane roadway with a 2-mile section through downtown separated into a one-way couplet—East 8th Street heading westbound and East 9th Street heading eastbound. SR 32 then reverts to an undivided road and is designated as Nord Avenue until it exits the city of Chico to the north. SR 32 is generally a two-lane facility, except where it is a one-way couplet, where each direction has two lanes (City of Chico 2010).

In the study area, both SR 32/Nord Avenue and West Sacramento Avenue contain Class II bicycle lanes (City of Chico 2017c). A “Class II” bicycle lane, as defined, provides a restricted ROW designated for the exclusive or semi-exclusive use of bicycles with through-travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross flows by pedestrians and motorists permitted. Class II bicycle lanes are typically a 5-foot striped and signed lane.

According to the Nord Avenue Corridor Plan, the Nord Avenue corridor is home to more than 11,000 people, many of which leave the corridor area at least two times per day. In addition, Nord Avenue is used by thousands of bicyclists and pedestrians each day. Pedestrian and bicycle conditions along Nord Avenue are unpleasant due to high traffic volumes, speeding along some segments, missing or broken sidewalks, numerous curb cuts, and difficult crossings (Glatting et al. 2006).

SR 32/Nord Avenue is parallel to and separated from many land uses to the northeast by the UPRR. There are only four at-grade crossings of these tracks in the corridor, and over 24 trains travel along these tracks every day, some at very slow speeds (Glatting et al. 2006).

Parking within the study areas is typically provided within designated parking lots. On-street parking is not permitted.

Traffic and Transportation

The West Sacramento Avenue offset intersections often experience long queues and have developed a history of collisions. The area has a heavy presence of bicycles and pedestrians as mentioned.

The table 3 below are the traffic volumes for the project area. The traffic volumes in the table for SR 32 were taken from the 2016 All Traffic Volumes on California State Highway System provided online through the Traffic Census Program:

<http://www.dot.ca.gov/trafficops/census/volumes2016/Route22-33.html>

Table 3. Traffic Volumes – Peak Hour and Annual Average Daily Traffic

Route County PM	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
32 BUT 7.79	W Sac Ave	2,150	22,600	21,500	1,850	21,600	20,500

Miovision cameras were set up for counting vehicles, bicycles, and pedestrians; they were set up on April 26, 2018 and later on September 20, 2018 to get a more accurate pedestrian count. The 12-hour volumes in September were about 2.8% less than they were in April. In September, the AM peak hour volumes were about 4% lower and the PM peak hour volumes were about 4% higher in April. The Office of System Planning Analysis, Modeling and Forecasting recommended that Highway Operations use the April counts for analysis. The PM peak hour volumes were increased by 4% to reflect the higher afternoon volumes in September.

The Highway Capacity Manual states that intersections with delays greater than 80 sec/veh operate at LOS F, which means the intersections are often congested and the queues fail to clear. Table 4 shows the existing 2018 Level of Service (LOS) at the project's intersections.

Table 4. Existing 2018 Levels of Service

Location	AM		PM	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
SR 32/W Sac Ave – WEST	29	C	67	E
SR 32/W Sac Ave – EAST	132	F	338	F

Although the W Sac Ave WEST intersection operates at an average overall acceptable level of service in the PM peak hour, the delay for westbound left-turn movement is more than 200 sec/veh. The queues are long and often back up in the W Sac Ave – EAST intersection. The stop controlled northbound right turn lane at the W Sac Ave – WEST intersection experiences

long queues due to the congestion on SR 32. Long queues can lead to driver frustration and an increase in collisions.

The W Sac Ave – EAST intersection currently operates with a LOS F in both the AM peak hour and the PM peak hour, well above the 80 seconds of delay per vehicle threshold for LOS F. Eastbound queues back up in the W Sac Ave – WEST intersection creating additional delay at that intersection. The frequent pedestrian calls at the intersection contribute to the delays.

From January 1, 2012 to December 31, 2017, the total number accidents that occurred within the project limits is 29 accidents. Of the 29 accidents, 12 were rear end collision, 5 were broadsides and 5 were sideswipes and 7 are other types of accidents. Of the 29 accidents 5 of the accidents involved vehicles and pedestrian resulting in 4 injuries and 1 fatality; another 4 accidents involved vehicles and bicyclist resulting in 4 injuries and 0 fatalities. Collision data was provided by the City of Chico, in addition to Caltrans collision data, and was used to initiate this project.

BUT-32 Accident Data (From Jan.1, 2012 to Dec.31, 2017)

No. of Accidents/Significance				
TOTAL	FAT	INJ	F+I	PDO
29	1	14	15	15

Public Transportation

Public transportation in the city of Chico is provided by Butte County, Plumas County, Glenn County, Amtrak, and Greyhound Lines, Inc. These entities offer local bus service, regional motor coach service, and passenger rail service in Chico. The B-Line, which is operated by Butte Regional Transit, operates two routes in the study area. Route 3 runs along Nord Avenue and Route 8 runs along West Sacramento Avenue.

Environmental Consequences

Bicycles and Pedestrians

The overall pedestrian access and circulation patterns in the Project area will remain the same given the location of housing in the study area and the location of CSUC and local schools. The limited number of crossings along SR 32 (Nord Avenue) also prevent a radical change in pedestrian access and circulation patterns regardless of the improvements that are ultimately developed in the Project area.

Alternative 3 will likely generate similar travel patterns for pedestrians and bicyclists since each of these alternatives include roundabouts at both of the SR 32 (Nord Avenue) intersections at West Sacramento Avenue. The SR 32 (Nord Avenue) crossing adjacent to the Timbers Apartments (south of the study area) could experience an increase in pedestrian crossings should pedestrians choose to cross at the signal, rather than the roundabout.

An increase in pedestrian traffic at the SR 32 (Nord Avenue) and West Sacramento Avenue (East) intersection for Alternative 4 is plausible if pedestrians choose not to frequent the roundabout at the West Sacramento Avenue (West) intersection. Pedestrian movements in the Project area would remain relatively the same for Alternative 5 since the improvements to the intersections would be relatively minor.

Circulation and Parking

- Alternative 3

On the south side of SR 32/Nord Avenue, Alternative 3 would result in the loss of four parking spaces in front of the parcel that houses the China House and Everyday Vietnamese Cuisine restaurants. Ten new parking spaces would be gained between the roundabouts, and an additional space would be added near Mondo's Café.

On the north side of SR 32/Nord Avenue, 20 parking spaces would be removed from the Safeway parking lot to construct the West Sacramento Avenue (West) roundabout, and three new spots would be added.

Circulation would be improved under this alternative by converting both intersections to roundabouts, which would reduce the number of collisions by reducing vehicle speed and conflict points. Implementation of Alternative 3 would remove some parking in the study area, but parking would be provided in accordance with the City's municipal code and impacts on businesses are not anticipated.

Access to business would be slightly altered with Alternative 3. Four driveways would be removed on the south side of SR 32/Nord Avenue between the Everyday Vietnamese Cuisine restaurant and the Kona's Sandwiches shop, and one driveway would be removed in front of Mondo's Café. Two new driveways would be constructed between the roundabouts, which would provide ample access to all businesses in this shopping center in addition to the new access point at the West Sacramento Avenue (East) roundabout.

On the north side of SR 32/Nord Avenue, two driveways would be removed. Access to businesses would be provided through four new driveways, plus the roundabout at West Sacramento Avenue (West). Under this alternative, there would be ample entrance points to access all businesses on the south side of SR 32/Nord Avenue. Table 6 shows the driveways that would be removed and their associated APN.

Table 6. Alternative 3 Access Changes

Assessor's Parcel Number	Parcel Description	Number of Driveways Removed
043-290-069	Nord Retail	1
043-290-114	Advali	2
043-290-068	Casperson	2
043-210-050	Lee	1
043-210-052	Singh	1

Alternative 3 is not anticipated to adversely affect local businesses and impacts on the regional economy are not anticipated. All build alternatives would comply with ADA standards.

- **Alternative 4**

On the south side of SR 32/Nord Avenue, no parking spaces would be removed because the West Sacramento Avenue (East) roundabout would not be constructed. Ten new parking spaces would be gained, and an additional space would be added near Mondo's Café.

On the north side of SR 32/Nord Avenue, 20 parking spaces would be removed from the Safeway parking lot in order to construct the West Sacramento Avenue (West) roundabout, and three new spots would be added.

Circulation would be improved under this alternative by constructing a roundabout at West Sacramento Avenue (West) and improving the intersection at West Sacramento Avenue (East), which would reduce the number of collisions by reducing vehicle speed and conflict points. Implementation of Alternative 4 would remove some parking from the Safeway parking lot, but parking would be provided in accordance with the City's municipal code and impacts on businesses are not anticipated.

Four driveways would be removed on the south side of SR 32/Nord Avenue, between the Everyday Vietnamese Cuisine restaurant and the Kona's Sandwiches shop. One driveway would be removed in front of Mondo's Café. Two new driveways would be constructed in front of Bulldog Taqueria that would provide ample access to all businesses in this shopping center with the existing access point at the West Sacramento Avenue (East) intersection.

On the north side of SR 32/Nord Avenue, two driveways would be removed. Access to businesses would be provided through other existing driveways between the intersections, as well as five the new access point at the roundabout at West Sacramento Avenue (West). Under this alternative, there would be ample entrance points to access all businesses on the south side of SR 32/Nord Avenue. Table 7 shows the driveways that would be removed and their associated APN.

Table 7. Alternatives 4 and 5 Access Changes

Assessor's Parcel Number	Parcel Description	Number of Driveways Removed
043-290-069	Nord Retail	-1
043-290-114	Advali	2
043-290-068	Casperson	2
043-210-050 & 043-210-052	Lee	1

Alternative 4 is not anticipated to adversely affect local businesses and impacts on the regional economy are not anticipated. All build alternatives would comply with ADA standards.

- **Alternative 5**

No parking would be removed under Alternative 5 because the roundabouts would not be constructed. Eleven parking spaces would be gained on the south side of SR 32/Nord Avenue.

Circulation would be improved under this alternative by implementing intersection improvements and reducing conflict points, which would reduce the number of collisions. All build alternatives would comply with ADA standards.

Four driveways would be removed on the south side of SR 32/Nord Avenue, between the Everyday Vietnamese Cuisine restaurant and the Kona's Sandwiches shop. One driveway would be removed in front of Mondo's Café. No new driveways would be constructed. Access to these businesses would be maintained through other existing driveways, including the intersection at West Sacramento Avenue (East) and existing driveways in front of Bulldog Taqueria.

On the north side of SR 32/Nord Avenue, two driveways would be eliminated. Access would be maintained through other existing driveways in front of the Shell gas station, at the intersection of West Sacramento Avenue (West), and in front of the Walgreens. Under this alternative, there would be ample entrance points to access all businesses on the south side of SR 32/Nord Avenue. Table 7 shows the driveways that would be removed and their associated APN.

Alternative 5 is not anticipated to adversely affect local businesses and impacts on the regional economy are not anticipated.

Figure 9 in the Appendix identifies the businesses in the project area.

Traffic and Transportation

- Alternative 3

Converting both signalized intersections to single lane roundabouts improves the level of service at both intersections. The W Sac Ave– West intersection will operate at LOS C in the AM peak hour and LOS D in the PM peak hour in the Design Year 2037. The W Sac Ave– East intersection is expected to operate at LOS E in the AM peak hour and LOS F in the PM peak hour in the Design Year 2037. Converting the signalized intersections to roundabouts can result in an 80% savings in delay in the PM peak hour at the W Sac Ave– West intersection. If a second eastbound circulating lane was added to the W Sac Ave– East intersection, the roundabout would operate at LOS E in the Design Year 2037 during the PM peak hour resulting in even more delay savings.

- Alternative 4

Alternative 4 proposes to convert the W Sac Ave– West intersection to a roundabout and modify the signal at the W Sac Ave– East intersection. A roundabout at W Sac Ave– West intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour through the Design Year 2037. The delay is reduced in the AM and PM peak hours by more than 50% when compared to the No Build alternative. The optimized signal at W Sac Ave– East will operate at LOS F during the AM and PM peak hours in the Design Year 2037, however there will be a delay savings of almost 20%.

- Alternative 5

Signal modification includes upgrading the signal hardware, removing the stop-controlled right turn lane at the W Sac Ave– West intersection, and optimizing the signal timing. The W Sac Ave– West intersection is expected to operate at LOS C in the AM peak hour and LOS F in the PM peak hour in the Design Year 2037. Although the W Sac Ave– East intersection will still operate at LOS F during both the AM and PM peak hour in the Design Year 2037, there will be a delay savings of almost 20% in the AM and over 80% in the PM peak hour.

Table 8. Level of Service (LOS) – Construction Year 2022 and Design Year 2037

Level of Service Construction Year 2022

Alternative	SR 99/W Sac Ave - West				SR 99/W Sac Ave - East			
	AM		PM		AM		PM	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
No Build	32	C	70	E	138	F	353	F
2 Single-Lane Roundabouts	13	B	17	C	30	D	48	E
Signal Modification	31	C	55	D	113	F	285	F
Roundabout and Signal	13	B	17	C	113	F	285	F

Level of Service Design Year 2037

Alternative	SR 99/W Sac Ave - West				SR 99/W Sac Ave - East			
	AM		PM		AM		PM	
	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
No Build	46	D	102	F	158	F	402	F
2 Single-Lane Roundabouts	17	C	34	D	48	E	81	F
Signal Modification	34	C	92	F	135	F	338	F
Roundabout and Signal	17	C	34	D	135	F	338	F

Public Transportation

Potential closures or detours on SR 32/Nord Avenue and West Sacramento Avenue could impact the B-Line route that runs through the study area. However, this potential delay would be only temporary, during construction.

Avoidance and/or Minimization Measures

A Traffic Management Plan (TMP) and their required measures would be implemented to reduce impacts on public transportation and circulation during construction. There would be no adverse effect to traffic and transportation and bicycles with the implementation of the following measures:

- The intersections of SR32 (Nord Ave) and West Sac. Ave (East & West), shall be placed in an all-way stop configuration. Portable light plants shall be used for lighting the intersections.
- One-way traffic control (reversing control) will be allowed in accordance with the Standard Plans sheet T13, but may be restricted during daytime peak hours, and weekends due to the higher traffic volumes.
- A minimum of one paved traffic lane, not less than 11 feet wide, shall be open for use by public traffic at all times. Two lanes shall remain open when construction operations are not actively in progress.
- The use of K-rail is recommended to separate the work zone from the public traffic. Widening work performed behind K-rail and gawk screens will be allowed at any time.
- Advance flaggers are recommended during (reversing control) because of the inadequate approaching sight distance.
- Access to businesses, cross streets, driveways, and residences must be maintained during construction in accordance with traffic control standard plans or traffic handling plans.
- When closures occur within 200 feet of an intersection, flaggers will be used to control all legs of the intersection. When traffic queues extend through an intersection, additional traffic control will be required at the intersection.
- Pedestrian access must be maintained during construction, with at least one sidewalk open on one side of the roadway at all times. Additional signs will be required to detour pedestrians when sidewalks are closed for contractor work.
- Bicycle traffic must be maintained during construction. Additional signs, and possibly striping, will be required to direct bicycle traffic when bikeways are closed for contract work.
- Shoulder closures will be allowed during hours of lane closure.
- No lane closures, shoulder closures, or other traffic restrictions will be allowed on Special Days, designated legal holidays and the day preceding designated legal holidays; and when construction operations are not actively in progress.
- For traffic handling purposes, coordination with projects nearby will be required to avoid conflicts during construction and to minimize any interference among the various projects.
- Work at these locations may require assistance of COZEEL, but full time COZEEL presence is not anticipated.

- Portable changeable message signs will be required in each direction of travel during construction for all lane and shoulder closures.

CLIMATE CHANGE

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.¹ In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of GHG emissions.² The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.”

Regulatory Setting

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

Federal

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

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

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.³ This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.”⁴ Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote

¹ <https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014>

² <https://www.arb.ca.gov/cc/inventory/data/data.htm>

³ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

⁴ <https://www.sustainablehighways.dot.gov/overview.aspx>

energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

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

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010⁵ and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in

⁵ <https://one.nhtsa.gov/Laws-&-Regulations/CAFE-%E2%80%93-Fuel-Economy>

the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.⁶

NHTSA and EPA issued a Final Rule for “Phase 2” for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO₂ emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

State

With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing GHG emissions and climate change.

Assembly Bill 1493, Pavley Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

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

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

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

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires the Governor’s Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

⁶ <https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse>

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

Senate Bill 391 (SB 391), Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

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

Executive Order B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO_{2e}). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the updated Scoping Plan, ARB released the GHG inventory for California.⁷ ARB is responsible for maintaining and updating California's GHG Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

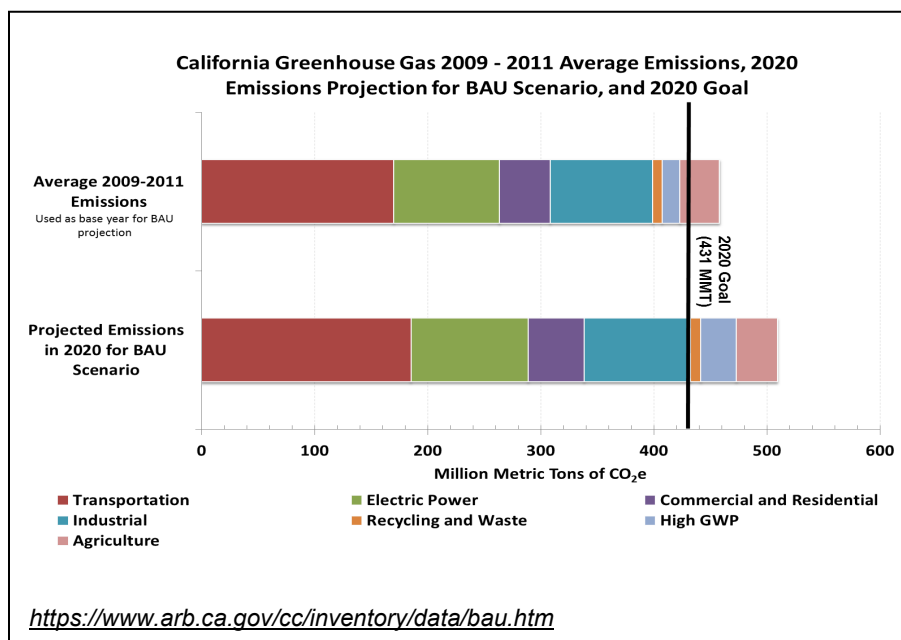
An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns.

⁷ 2018 Edition of the GHG Emission Inventory (July 2018).
<https://www.arb.ca.gov/cc/inventory/data/data.htm>

The projected 2020 emissions provided in Figure 7 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMTCO₂e⁸. The 2018 edition of the GHG emissions inventory found total California emissions of 429 MMTCO₂e for 2016.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 MMTCO₂e total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMTCO₂e.

Figure 7: 2020 Business as Usual (BAU) Emissions Projection 2014 Edition



Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.⁹ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental

⁸ The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)

⁹ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

impacts of the project must be compared with the effects of past, current, and probable future projects.

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential GHG emissions related to the proposed project.

Operational Emissions

The proposed project would improve the intersections on SR 32 (Nord Avenue) at West Sacramento Avenue (East) and West Sacramento (West) by replacing these two signalized intersections with roundabouts and/or making intersection improvements. The project would not increase capacity on the SR 32 corridor. Additionally, the project will reduce traffic delays and improve safety by providing a safe movement of traffic flow.

The proposed project would not result in changes to traffic volume, fleet mix, vehicle speed, location of the existing facility or any other factor that would cause an increase in emissions; therefore, this project would not cause an increase in operational emissions.

Construction Emissions

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

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

Construction is anticipated to begin in 2022 and would last approximately 150 working days. The Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model 8.1.0 was used to estimate CO₂, methane (CH₄), and nitrous oxide (N₂O) emissions from construction activities. Table 9 shows the estimated GHG emissions generated by on-site equipment by project phase. The total CO₂e produced during construction is estimated to be approximately 268 metric tons.

Table 9. GHG Construction Emissions (metric tons)

Project Phase	CO ₂	CH ₄	N ₂ O	CO ₂ e
Grubbing/Land Clearing (lbs/day)	2283.71	0.58	0.03	2307.07
Grading/Excavation (lbs/day)	3958.39	0.91	0.05	3996.51
Drainage/Utilities/Sub-Grade (lbs/day)	1091.24	0.11	0.02	1099.85
Paving (lbs/day)	2314.28	0.54	0.03	2336.91

Total: Tons (metric/construction project)	265.73	0.06	0	268.25
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A transportation management plan would be developed and implemented during construction to reduce delays. One-way traffic control (reversing control) will be allowed in accordance with the standard plans sheet T1, but may be restricted during daytime peak hours and weekends due to the higher traffic volumes. A minimum of one paved traffic lane shall always be open for public traffic; two lanes shall remain open when construction operations are not actively in progress. Pedestrian and bicycle traffic will be maintained during construction.

Caltrans Standard Specifications Section 7-1.02 “Emissions Reduction”, requires contractors to be aware of and comply with emissions reduction regulations mandated by the California Air Resources Board. Section 14-9.02 “Air Pollution Control”, requires contractors to comply with all air-pollution-control rules, regulations, ordinances, and statutes, including those of the Butte County Air Quality Management District. Air-quality regulations that reduce vehicle emissions also help reduce GHG emissions.

CEQA Conclusion

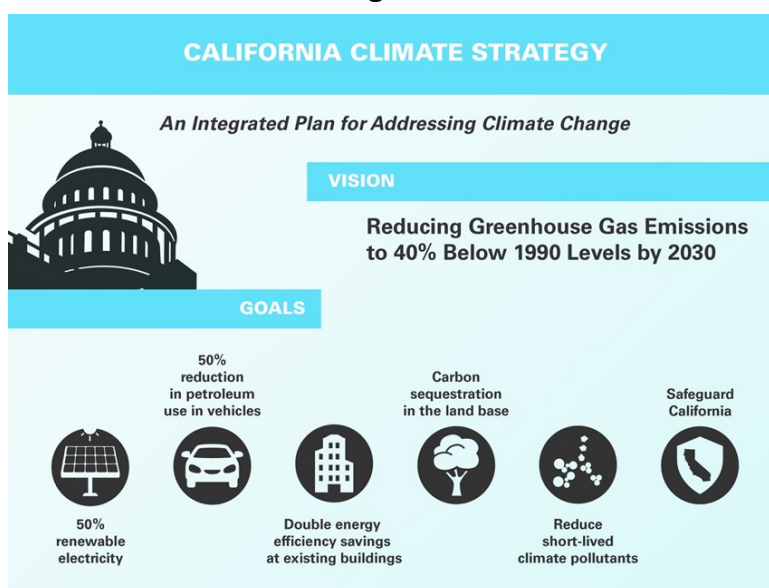
While the project would result in a slight increase in GHG emissions during construction, the project would not result in any increase in operational GHG emissions. While it is Caltrans’ determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project’s direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing project features to help reduce GHG emissions. These project features are outlined in the following section.

Greenhouse Gas Reduction Strategies

Statewide Efforts

To further the vision of California’s GHG reduction targets outlined in AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts). These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 GHG emissions target. These pillars are (1) reducing today’s petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state’s climate adaptation strategy, *Safeguarding California*.

Figure 8: The Governor's Climate Change Pillars: 2030 Greenhouse Gas



Reduction Goals

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT per capita
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (2013).

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

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

Project-Level GHG Reduction Strategies

The following project features would also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project:

- The project would comply with Caltrans Standard Specifications Section 14-9 "Air Pollution Control". Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including the Butte County Air Quality Management District regulations and local ordinances.
- The project would comply with Title 13 of the California Code of Regulations, which includes restrictions on idling of construction vehicles and equipment to no more than 5 minutes.
- The project would comply with Caltrans Standard Specification 7-1.02C "Emissions Reduction" which ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.
- The project would utilize a traffic management plan to minimize vehicle delays.

- To the extent feasible, construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- The project is designed to improve traffic flow and reduce delays, which will reduce traffic idling that contributes GHG emissions.

Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage—or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the CEQ, the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011¹⁰, outlining the federal government’s progress in expanding and strengthening the nation’s capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of federal adaptation, including building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions.”¹¹

To further the DOT Policy Statement, on December 15, 2014, FHWA issued order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).¹² This directive established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs in order to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation’s transportation systems.

¹⁰ <https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience>

¹¹ https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm

¹² <https://www.fhwa.dot.gov/legisregs/directives/orders/5520.cfm>

FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.¹³

State Efforts

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea-level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea-level rise and directed all state agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea-level rise. Sea-level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high-water levels, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report)¹⁴ was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided a synthesis of existing information on projected sea-level rise impacts to state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems; and a discussion of future research needs regarding sea-level rise.

In response to EO S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed *The California Climate Adaptation Strategy* (Dec 2009),¹⁵ which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring state agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how state agencies are implementing EO B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

¹³ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

¹⁴ *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

¹⁵ <http://www.climatechange.ca.gov/adaptation/strategy/index.html>

¹⁶ <http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/>

EO S-13-08 also gave rise to the State of California Sea-Level Rise Interim Guidance Document (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided “guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California,” specifically, “information and recommendations to enhance consistency across agencies in their development of approaches to SLR.”¹⁶

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation, and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is actively engaged in working towards identifying these risks throughout the state and will work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

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

Section 4: Construction Impacts

AIR QUALITY

Construction is anticipated to begin in 2022 and would last approximately 150 working days. During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), directly-emitted particulate matter (PM₁₀ and PM_{2.5}), and toxic air contaminants such as diesel exhaust particulate matter. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Fugitive dust would be generated during grading and construction operations. Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM₁₀ emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM₁₀ emissions depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

NOISE

Noise from construction activities may intermittently dominate the environment in the immediate area of construction. Noise generated by construction activities would be a function of the noise levels generated by individual pieces of construction equipment, the type and amount of equipment operating at any given time, the timing and duration of construction activities, and the proximity of nearby sensitive receptors.

Construction noise would primarily result from the operation of heavy construction equipment and arrival and departure of heavy-duty trucks. Construction noise levels would vary on a day-to-day basis during each phase of construction depending on the specific task being completed. Table 10 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 89 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 10: Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Grader	85
Bulldozers	85
Heavy Trucks	88
Dump Truck	84
Backhoe	80

Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration, 2006.

http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm

Figure 9 lists the noise levels of common activities to enable readers to compare the construction equipment noise levels discussed in this section with common activities.

Figure 9: Noise Levels of Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

The proposed project is located within the City of Chico on SR 32 in Butte County. Several businesses are adjacent to the proposed project area and several residences are near by the project area. Construction impacts are temporary and sensitive receptors would not be exposed to construction noise for any longer than necessary to complete the project. Some measures to minimize noise will be applied during construction.

During construction, "Noise Control" Caltrans Standard Specification is applied to all projects:

- Control and monitor noise resulting from work activities
- Do not exceed 86dBA Lmax at 50 feet from the job site activities from 9pm to 6am.

In addition to the Standard Specifications, construction noise can be minimized through the following measures:

- Limit operation of pile driver, jackhammer, concrete saw, pneumatic tools and demolition equipment to daytime hours.
- Unnecessary idling of internal combustion engines should be prohibited.
- Stationary equipment, such as compressors and generators, should be shielded and located as far away from residential and park uses as practical.
- Locate equipment and materials storage sites as far away from residential and park uses as practicable.
- Notify residents within 100 feet of the project area at least two prior to the start of nighttime construction.

Section 5: List of Preparers

The following Caltrans staff contributed to the preparation of this Initial Study:

Maggie Ritter, Associate Environmental Planner (Coordinator). Contribution: Initial Study.

Kevin Lee, Transportation Engineer. Contribution: Project Design.

Joan Fine, Associate Environmental Planner (Architectural History). Contribution: Built Environment Correspondence.

Rajive Chadha, National Pollution Discharge Elimination System Coordinator. Contribution: Water Quality Assessment Memorandum, November 2018.

William Larson, Associate Environmental Planner (Archaeology). Contribution: Cultural Resources and Tribal Consultation, September 2018.

Sydney Eto, Environmental Planner (Natural Sciences). Contribution: No Effects Memorandum, April 2018.

Maher Dabbagh, Transportation Engineer. Contribution: Traffic Management Plan (TMP), December 2018.

Arron Rambach, Hazardous Waste Specialist. Contribution: Initial Site Assessment, January 2019.

Saeid Zandian, Noise Specialist. Contribution: Traffic Noise Impact, January 2018.

Jason Lee, Air Specialist. Contribution: Air Quality Analysis, November 2018.

Michelle Parkinson, Rural Highway Operations Analyst. Contribution: Traffic Operations Analysis Report, December 2018.

Lindsay Christenson at ICF, Consultant, Contribution: Final Community Impact Assessment (CIA), January 2019.

VRPA Technologies, Inc., Consultant, Contribution: Butte County SR 32 Roundabouts at W. Sacramento Avenue – Pedestrian Travel Technical Report, December 2018.

Suzanne Melim, Supervising Environmental Planner. Contribution: Environmental Office Chief.

Kathryn Lugo, Landscape Architect. Contribution: Visual Impact Assessment December 2018.

Mike Bartlett, Senior Environmental Planner. Contribution: Environmental Branch Chief.

Appendices

Figure 4 – Study Area Census Block Map

Figure 5 – Land Use Designation Map

Figure 6 – Zoning Designation Map

Table 2 – Race and Ethnicity Data

Table 3 – Housing Characteristics

Figure 9 – Business Names, Reference Map

BUT-32 Roundabout Project (EA: 03-2H240)



Figure 5. Land Use

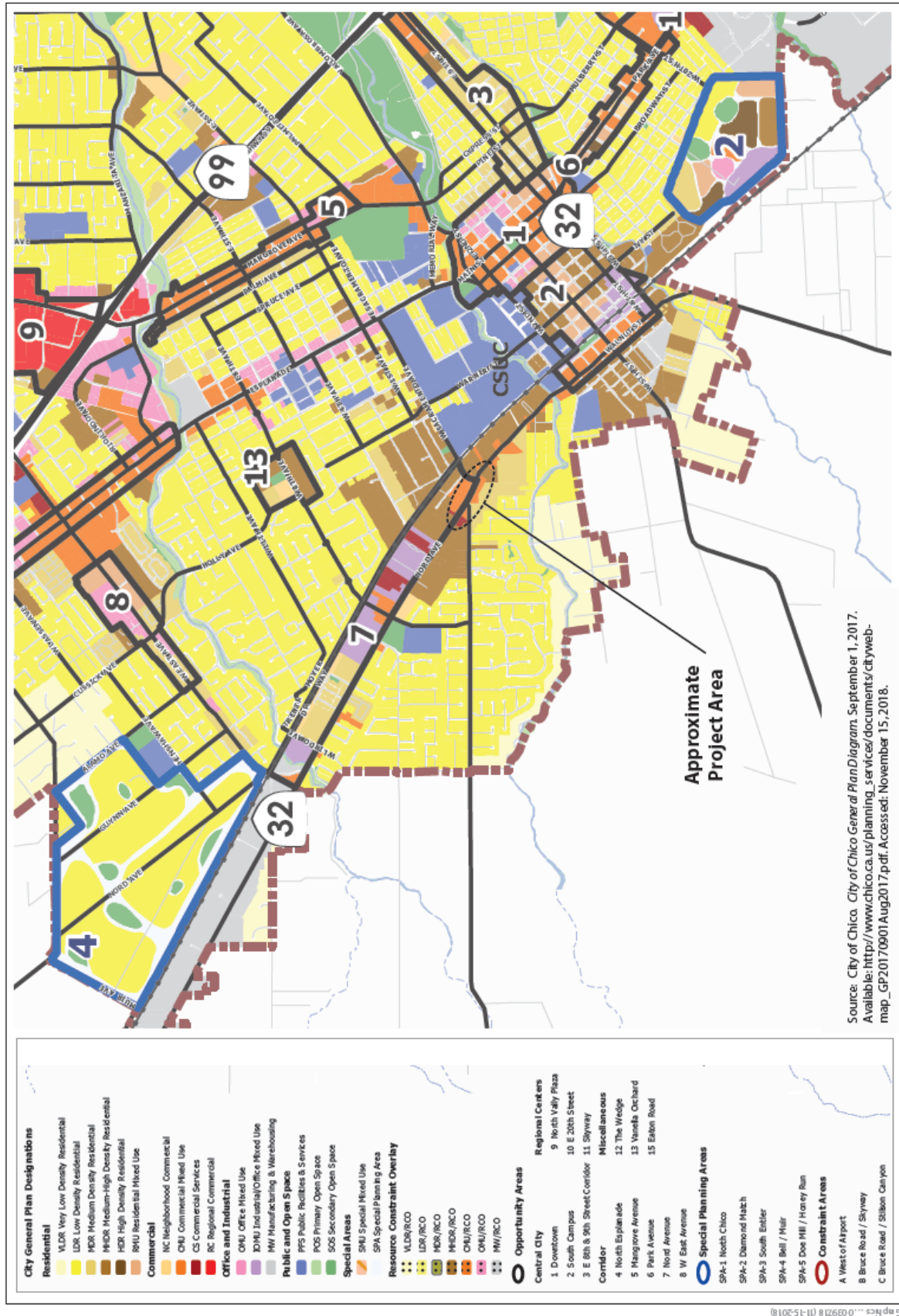


Figure 4
Land Use Designations

Figure 6. Zoning

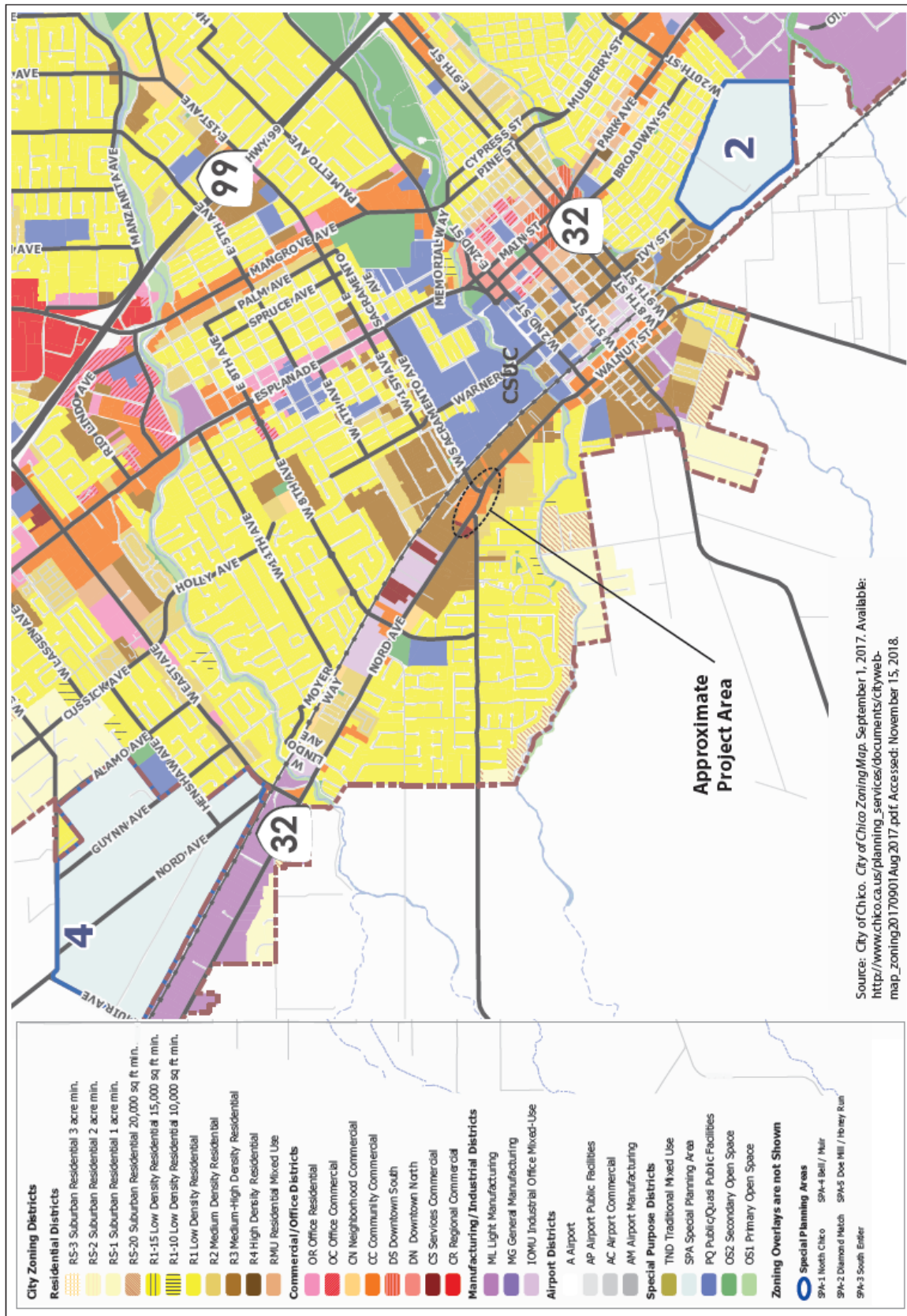


Figure 5
Zoning Map

Table 2. Race and Ethnicity Data

Table 2. Race and Ethnicity Data

Area	Hispanic or Latino (of any race)		White		Black or African American		Native American		Asian		Native Hawaiian/ Pacific Islander		Other Race		Two or More Races		Total
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
Butte County	31,116	14.1	165,416	75.2	3,133	1.4	3,395	1.5	8,921	4.1	401	0.2	318	0.1	7,300	3.3	220,000
City of Chico	15,283	15.2	75,130	74.5	1,766	1.8	946	0.9	4,040	4.0	206	0.2	187	0.2	3,268	3.2	100,826
Census Tract 5.01 Block Group 2	52	8.0	550	85.1	0	0.0	2	0.3	22	3.4	0	0.0	4	0.6	16	2.5	646
Census Tract 5.01 Block Group 3	9	10.7	74	88.1	0	0.0	0	0.0	0	0.0	0	0.0	1	1.2	0	0.0	84
Census Tract 5.01 Block Group 4	357	20.7	1,128	65.5	59	3.4	10	0.6	80	4.6	2	0.1	6	0.3	81	4.7	1,723
Census Tract 5.02 Block Group 1	34	30.6	61	55.0	0	0.0	0	0.0	11	9.9	0	0.0	0	0.0	5	4.5	111
Census Tract 5.02 Block Group 2	272	27.1	431	42.9	47	4.7	12	1.2	202	20.1	8	0.8	0	0.0	32	3.2	1,004
Census Tract 5.02 Block Group 3	192	16.0	787	65.5	61	5.1	5	0.4	75	6.2	12	1.0	3	0.2	67	5.6	1,202
Census Tract 5.02 Block Group 4	157	16.9	625	67.2	29	3.1	6	0.6	70	7.5	2	0.2	2	0.2	39	4.2	930
Census Tract 11 Block Group 4	111	13.4	586	70.5	31	3.7	5	0.6	65	7.8	4	0.5	5	0.6	24	2.9	831
Census Tract 11 Block Group 5	73	12.7	436	76.0	14	2.4	4	0.7	13	2.3	5	0.9	2	0.3	27	4.7	574
Census Tract 10 Block Group 2	43	7.8	480	87.4	2	0.4	2	0.4	5	0.9	2	0.4	2	0.4	13	2.4	549
Census Tract 10 Block Group 4	88	11.9	610	82.3	9	1.2	3	0.4	8	1.1	0	0.0	2	0.3	21	2.8	741
Census Tract 6.03 Block Group 1	67	12.0	441	79.2	4	0.7	6	1.1	11	2.0	1	0.2	3	0.5	24	4.3	557
Census Tract 6.03 Block Group 2	89	11.6	608	79.5	23	3.0	2	0.3	13	1.7	1	0.1	1	0.1	28	3.7	765
Census Tract 6.03 Block Group 3	125	12.1	826	80.2	15	1.5	1	0.1	11	1.1	2	0.2	1	0.1	49	4.8	1,030
Census Tract 6.03 Block Group 4	101	13.0	590	75.8	11	1.4	4	0.5	24	3.1	2	0.3	1	0.1	45	5.8	778

Area	Hispanic or Latino (of any race)		White		Black or African American		Native American		Asian		Native Hawaiian/ Pacific Islander		Other Race		Two or More Races		Total
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
Census Tract 6.04 Block Group 1	184	20.9	510	57.8	25	2.8	3	0.3	118	13.4	0	0.0	1	0.1	41	4.6	882
Census Tract 6.04 Block Group 2	158	16.8	549	58.5	60	6.4	8	0.9	113	12.0	2	0.2	4	0.4	45	4.8	939
Census Tract 6.04 Block Group 3	205	27.7	404	54.6	40	5.4	6	0.8	47	6.4	1	0.1	5	0.7	32	4.3	740
Census Tract 6.04 Block Group 4	66	10.3	513	80.3	13	2.0	3	0.5	25	3.9	1	0.2	1	0.2	17	2.7	639
Census Tract 6.04 Block Group 5	184	18.1	657	64.6	51	5.0	3	0.3	79	7.8	7	0.7	4	0.4	32	3.1	1,017

Source: U.S. Census Bureau 2018.

Table 4. Housing Characteristics**Table 3. Housing Characteristics**

Area	Total Units	Occupied Units	Percentage of Occupied Units	Vacant Units	Percentage of Vacant Units	Owner-Occupied	Percentage of Owner-Occupied	Renter Occupied	Percentage of Renter Occupied
Butte County	95,835	87,618	91.4%	8,217	8.6%	124,050	57.7%	91,008	42.3%
City of Chico	43,031	40,487	94.1%	2,544	5.9%	46,219	47.3%	51,409	52.7%
Census Tract 5.01 Block Group 2	261	252	96.6%	9	3.4%	506	78.3%	140	21.7%
Census Tract 5.01 Block Group 3	29	28	96.6%	1	3.4%	77	91.7%	7	8.3%
Census Tract 5.01 Block Group 4	863	824	95.5%	39	4.5%	152	8.8%	1,571	91.2%
Census Tract 5.02 Block Group 1	35	32	91.4%	3	8.6%	10	9.0%	101	91.0%
Census Tract 5.02 Block Group 2	364	309	84.9%	55	15.1%	107	10.7%	897	89.3%
Census Tract 5.02 Block Group 3	630	602	95.6%	28	4.4%	33	2.7%	1169	97.3%
Census Tract 5.02 Block Group 4	394	375	95.2%	19	4.8%	29	3.1%	901	96.9%
Census Tract 11 Block Group 4	160	150	93.8%	10	6.3%	39	8.6%	417	91.4%
Census Tract 11 Block Group 5	261	235	90.0%	26	10.0%	6	1.1%	556	98.9%
Census Tract 10 Block Group 2	218	209	95.9%	9	4.1%	75	14.5%	441	85.5%
Census Tract 10 Block Group 4	276	268	97.1%	8	2.9%	0	0.0%	660	100.0%
Census Tract 6.03 Block Group 1	274	258	94.2%	16	5.8%	163	29.3%	394	70.7%
Census Tract 6.03 Block Group 2	388	368	94.8%	20	5.2%	181	23.7%	584	76.3%
Census Tract 6.03 Block Group 3	34	32	94.1%	2	5.9%	56	63.6%	32	36.4%
Census Tract 6.03 Block Group 4	362	337	93.1%	25	6.9%	63	8.1%	715	91.9%
Census Tract 6.04 Block Group 1	237	216	91.1%	21	8.9%	9	1.6%	558	98.4%

Area	Total Units	Occupied Units	Percentage of Occupied Units	Vacant Units	Percentage of Vacant Units	Owner-Occupied	Percentage of Owner-Occupied	Renter Occupied	Percentage of Renter Occupied
Census Tract 6.04 Block Group 2	548	478	87.2%	70	12.8%	71	7.6%	868	92.4%
Census Tract 6.04 Block Group 3	228	210	92.1%	18	7.9%	5	0.7%	718	99.3%
Census Tract 6.04 Block Group 4	297	267	89.9%	30	10.1%	281	44.5%	351	55.5%
Census Tract 6.04 Block Group 5	389	333	85.6%	56	14.4%	14	1.4%	1,003	98.6%

Source: U.S. Census Bureau 2018.

Figure 9. Business Names, Reference Map

