# Bruce Road Reconstruction Project

# Draft Initial Study / Proposed Mitigated Negative Declaration

# CAPITAL PROJECT NO. 16038

**Lead Agency:**

City of Chico, Public Works Department

411 Main Street

Chico, CA 95928

## September 23, 2020

**Prepared By:**

City of Chico Department of Public Works – Engineering

Lead Consultant: Gallaway Enterprises

Supporting Consultant: ICF International, Inc.

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Each of the appendices listed below is available for review, along with the Draft IS/Proposed MND on the City of Chico's website at https://chico.ca.us/post/bruce-road-reconstruction-project (Public Review Documents - Bruce Road Reconstruction Project).

Appendix A: Air Quality and Greenhouse Gas Analysis for the Bruce Road Reconstruction Project
Appendix B: Biological Resource Assessment
Appendix C: Draft Delineation of Aquatic Resources
Appendix D: Cultural Resources Inventory Report For The Bruce Road Reconstruction Project, City Of Chico, Butte County, California
Appendix E: Report Of Initial Site Assessment Bruce Road Widening Project Chico, California Capital Improvement Project No. 16038
Appendix F: Noise and Vibration Report Bruce Road Reconstruction Project, Capital Project No. 16038 City of Chico, California
Appendix G: Traffic/Transportation Technical Study for the Bruce Road Widening Project

## List of Acronyms

| | |
|---|---|
| AASHTO | American Association of State Highway Transportation Officials |
| BCAQMD or Air District | Butte County Air Quality Management District |
| BCM | Butte County Meadowfoam |
| BMPs | Best Management Practices |
| BSA | Biological Survey Area |
| CAP | Climate Action Plan |
| Caltrans | California Department of Transportation |
| Cal Water | California Water Service Company |
| CBC | California Building Code |
| CC | Community Commercial |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CFGC CFR | California Fish and Game Commission Code of Federal Regulations |
| City | City of Chico |
| CMC | Chico Municipal Code |
| CNDDB | California Natural Diversity Database |
| CRHR | California Register of Historical Resources |
| CRWQCB | California Regional Water Quality Control Board |
| CUSD | Chico Unified School District |
| CVFPB | Central Valley Flood Protection Board |
| CWHR | California Wildlife Habitat Relationships |
| dBA | decibel |
| DHS | Dead Horse Slough |
| DTSC | Department of Toxic Substances Control |
| EIR | Environmental Impact Report |
| ESA | Endangered Species Act |
| FEMA | Federal Emergency Management Agency |
| ft | Feet |
| GHG | Greenhouse gas |
| HRBD | Humboldt Road Burn Dump |
| HUD | Department of Housing and Urban Development |
| ISA | Initial Site Assessment |
| LID | Low Impact Development |
| LRA | Local Responsibility Area |
| LSA | Limited Soils Assessment |
| MBTA | Migratory Bird Treaty Act |
| MND | Mitigated Negative Declaration |
| MMRP | Mitigation Monitoring and Reporting Program |
| MTD | Caltrans Bridge Memo to Designers |
| NAHC | Native American Heritage Commission |
| NEIC | Northeast Information Center |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollution Discharge Elimination Permit |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NOx | Oxides of Nitrogen |
| OWOUS | Other Waters of the United States |
| Phase I ESA | Phase I Environmental Site Assessment |
| PM | Parcel Map |
| $PM_{2.5}$ | Fine Particulate Matter |
| $PM_{10}$ | Respirable Particulate Matter |
| RC | Resource Constraint |

| | |
|---|---|
| REC | Recognized Environmental Condition |
| ROG | Reactive Organic Gases |
| RPW | Relatively Permanent Water |
| R3 | Medium High Density Residential |
| SDC | Caltrans Seismic Design Criteria |
| SLIC | Spills, leaks, investigations and cleanup |
| SMP | Soils Management Plan |
| SNC | Sensitive Natural Community |
| sq ft | Square feet |
| SWPPP | Stormwater Pollution Prevention Plan |
| SRA | State Responsibility Area |
| TNW | Traditional Navigable Waters |
| USACE | United States Army Corps of Engineers |
| USFWS | United States Fish and Wildlife Service |
| UST | Underground Storage Tank |
| VMT | Vehicle-miles-traveled |

# Draft Initial Study / Proposed Mitigated Negative Declaration

## City of Chico
## Environmental Coordination and Review

### I. PROJECT DESCRIPTION

**A. Project Title:** Bruce Road Reconstruction Project (Capital Project No. 16038)

**B. Project Sponsor/Lead Agency:**
City of Chico – Public Works Engineering
PO Box 3420
Chico, CA 95927

**Property Owners:**
City of Chico
PO Box 3420
Chico, CA 95927

**C. City Contact:** Tracy R. Bettencourt – MPA, AICP
Regulatory and Grants Manager
City of Chico – Public Works Engineering
tracy.bettencourt@chicoca.gov
(530) 879-6903

**D. Project Location:** The Project is located along Bruce Road from State Route 32 to Skyway in the City of Chico, California, Latitude 39.727142, longitude -121.787372. (**Figure 1 – Project Location Map**).

**E. Assessor's Parcel Number (APN):** The project will be located within the existing public right-of-way and narrow portions of APNs 002-180-089, -095, and -187 and 018-390-011, which are proposed for future acquisition.

**F. Parcel Size:** The project is approximately 2.0 miles in length totaling approximately 25.0 acres in size.

**G. General Plan Designation:** Public Right-of-Way (ROW), adjacent to Public Facilities and Services, Low Density Residential, Medium Density Residential, Medium-High Density Residential, Office Mixed Use, Commercial Mixed Use, Neighborhood Commercial, Commercial Services, Primary Open Space, Special Mixed Use, and Resource Constraint Overlay Area.

**H. Zoning:** Public ROW, adjacent to Public/Quasi Public Facilities, Services Commercial, Community Commercial, Low Density Residential, Medium Density Residential, Medium-High Density Residential, Office Residential, Neighborhood Commercial, Traditional Mixed Use, and Primary Open Space.

**I. Environmental Setting:**
The project site is located on Bruce Road, on the eastern side of the City of Chico, Butte County, California, within the United States Geological Survey (USGS) "Chico" quadrangle, Sections 19, 20, 29, 30, 31, and 32, Township 22N, Range 2E. The project is located in the north Sacramento Valley at the base of the Sierra Nevada foothills. The project site and adjacent land consists of urban and residential development and annual grasslands with vernal complex and other wetland features. The project site also contains one intermittent drainage, Little Chico Creek. The area is heavily influenced by human development and the central feature is Bruce Road, a paved arterial roadway that connects State Route 32 (SR 32) to Skyway Road. Residential homes occur to the east and south, and the planned Meriam Park development occurs to the west. The large sections of open annual grassland in the southern portion of the project site (south of East 20th Street) on both sides of Bruce Road have already been studied and permitted (or in the process of being permitted) for urban development. The overall topography of the project site is relatively flat. The survey area ranges in elevation from 261 to 268 feet above sea level and is sloped between 0-2 percent.

**J. Project Description:**

The proposed project involves the reconstruction and widening of an approximately 2-mile segment of Bruce Road from SR 32 to Skyway utilizing roller-compacted concrete pavement (see **Figure 1 – Project Location Map)**. Consistent with the City of Chico 2030 General Plan, the project's proposed "Complete Streets" improvements include widening Bruce Road from an existing 2-lane arterial roadway to a 4-lane arterial roadway, and replacement of the existing two-lane, functionally obsolete Bruce Road bridge over Little Chico Creek (Caltrans Bridge # 12C0106) with a new four-lane bridge structure. The new, approximately 96-feet long by 96.5-feet wide bridge will accommodate four lanes of traffic, a center median, pedestrian/bicycle facilities consisting of a Class I bike path on the west side of Bruce Road, and a sidewalk on the east side. The new bridge will be comprised of a three-span, cast-in-place, reinforced concrete slab superstructure founded on pile supported abutments and 16-inch diameter multi-column piers supported on spread footings **(Figure 2 - Bruce Road Reconstruction Site Plan)**.

The ultimate roadway design includes construction of the following: a 14-foot landscaped center median; roadway lighting; 5-foot bike lanes with 2-foot buffered striping on both east and west sides of Bruce Road; dedicated left turn lanes at various intersections; concrete curb, gutter, and curb ramps; and a 12-foot-wide concrete multi-use path on the west side of Bruce Road (see **Figure 3 – Bruce Road Typical Cross Section**). The project also includes storm drainage improvements such as bioretention facilities, drainage pipe, manholes, and curb inlets, as well as minor extension of sewer facilities where required. The proposed project includes construction of most of the ultimate roadway design The City will be installing all infrastructure improvements detailed herein, except for a few limited frontage improvements on the east side of Bruce Road. Sidewalk and parking strips on the east side of the roadway will be installed by others in conjunction with the requirements of adjacent private subdivisions to be constructed as separate projects.

Excavation will be required throughout the project in order to construct the roadway, bridge and associated improvements. The estimated maximum depth of excavation for the roadway improvements is between 1 and 3 feet below existing grade. Landscaping and drainage facilities, which require trenching, placement of pipe, drainage structures, planting, irrigation, and backfill will have a maximum depth of 6 feet. For the bridge structure, a maximum excavation depth of 35-feet will be required to install abutment supports, which are anticipated to be Cast-In-Drilled-Hole (CIDH) piles.

A total of approximately 0.23 acres of right-of-way acquisition will be needed from 4 parcels. Temporary construction easements will be required in various locations. A drainage easement from Chico Unified School District (CUSD) will be required for the proposed stormwater drainage system. An easement for the installation of the multi-use path will also be required from CUSD. Staging areas will be located only at highly disturbed sites void of environmental resources, such as those currently/formerly utilized by Meriam Park, utility undergrounding, and recent multi-family construction contractors.

Approximately 54 trees will be removed in conjunction with the project, of which the majority are non-native landscape trees. Incorporated as an integral feature in the project design and approval are landscape plans for the center median and the westerly parkway/landscape strip separating the roadway from the 12-foot wide paved Class I bicycle/pedestrian path. The landscape design will result in the planting of a variety of native vegetation, including approximately 70 valley oaks (*Quercus lobata*) and 150 live oaks (*Quercus wislizeni*).

Some segments of the project will receive specific work that differs from the typical cross section of the roadway proposed for the entire corridor. See below.

# BRUCE ROAD RECONSTRUCTION PROJECT

## Capital Project No. 16038 - Project Vicinity Map

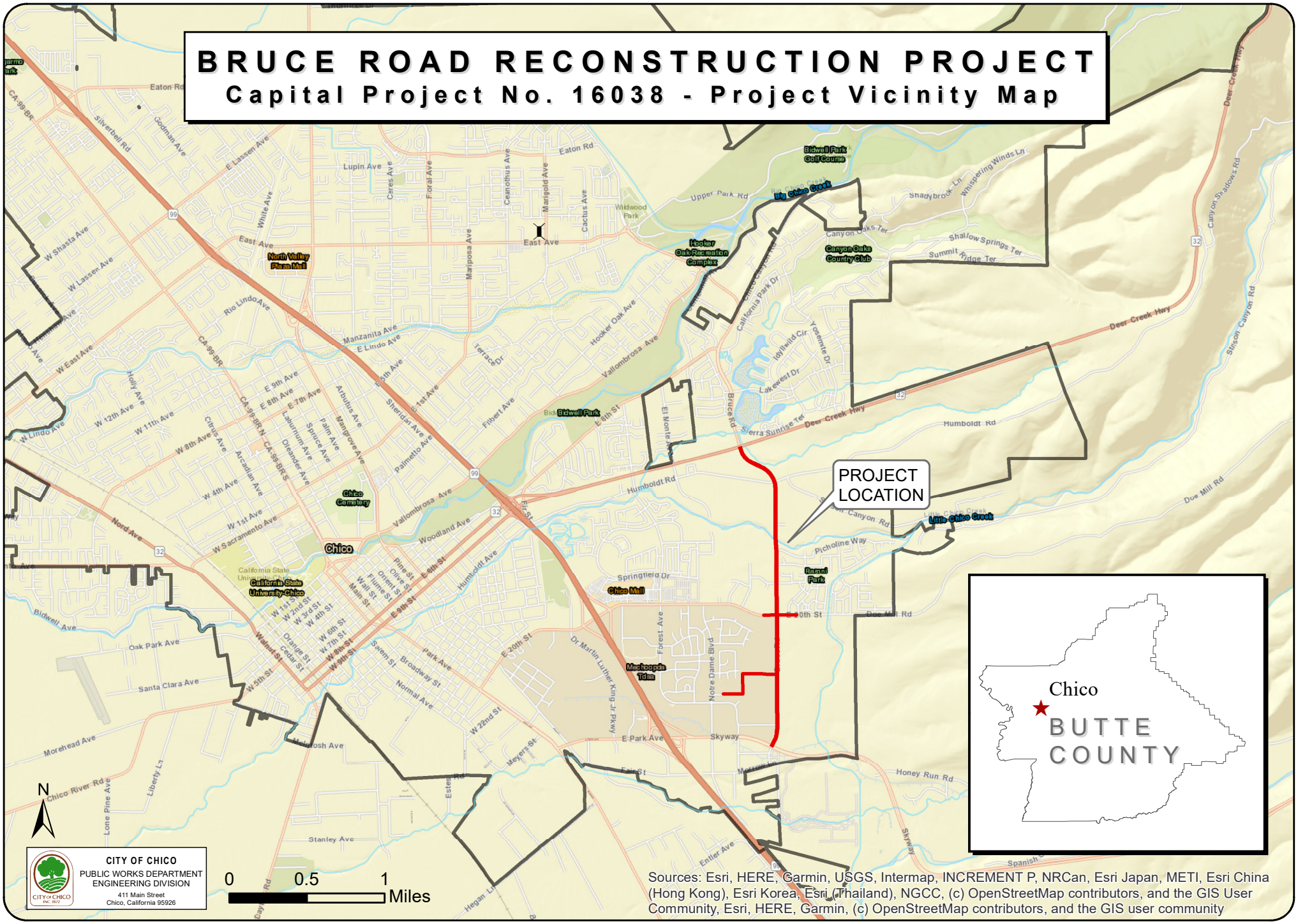


**Figure 1**

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**Bruce Road from SR 32 and East 20th Street**

- A new storm drain outfall will be installed downstream of the Little Chico Creek bridge crossing, on the southbound side of Bruce Road at the northwest corner of the bridge. The existing upstream storm drain outfall will be removed and diverted to the new outfall.
- The existing asphalt-concrete path from Humboldt Road to Native Oak Drive will be removed and replaced with new sidewalk.
- On the east side of Bruce Road, the existing sidewalk that currently ends just south of the Little Chico Creek bridge will be extended northerly to the bridge.

**East 20th Street**

- Timing and equipment modifications will be made to the traffic signals at the intersection of Bruce Road and East 20th Street.
- Two traffic signal poles on the southwest and southeast corners of the Bruce Road and East 20th Street intersection will be relocated.
- Approximately 625 feet of additional work will be completed along East 20th Street ROW from the Bruce Road intersection easterly to approximately 200 feet east of Belgium Avenue.
- The road will be widened from 3 lanes to 5 lanes to align with the proposed ultimate intersection configuration at Bruce Road and East 20th Street.
- Curb and gutter improvements will be installed on the north side of East 20th Street easterly to Belgium Avenue. No sidewalk or curb and gutter work is planned for the south side of East 20th Street.
- Approximately 450 feet of East 20th Street west of Bruce Road will be widened to align with the proposed ultimate intersection configuration.

**Bruce Road from East 20th Street to Raley Boulevard**

- Proposed improvements include surface and subsurface drainage infrastructure to capture and direct stormwater runoff from Bruce Road to existing storm drain systems on Raley Boulevard and Fremont Street.
- A new 42-inch storm drainpipe will be installed from Bruce Road west across the CUSD parcel and will drain into an existing connection at Fremont Street. Trenching for the new storm drainpipe will be at least 6 feet deep and approximately 6 feet wide.
- The existing cross culverts under Bruce Road will be removed and replaced with an underground storm drain network to connect to the existing City system.
- Conduit will be installed at the intersection of Bruce Road and Raley Boulevard and at the location of the future intersection of Bruce Road and Webster Drive to accommodate traffic signals to be installed by developers in the future.
- Bioretention facilities will be installed in both the northbound and southbound lane parkways on Bruce Road at Webster Drive.
- Various curb and gutter gap closures will be installed on the east side of Bruce Road just north of Little Chico Creek and north of Humboldt Road.

**Bruce Road from Raley Boulevard to Skyway**

- Curb and gutter will be installed on the east side of Bruce Road.

**Other Adjacent and Area Projects**

There are three adjacent projects in various states of planning, permitting, and construction, each with separate environmental documentation. This includes the Meriam Park Master Plan (Meriam Park Program Environmental Impact Report (State Clearinghouse No. 2005072045)) located on the west side of Bruce Road between East 20th Street, the Stonegate Vesting Tentative Subdivision Map and General Plan Amendment / Rezone Project Environmental Impact Report (State Clearinghouse No. 2016062049) located on both sides Bruce Road south of East 20th Street, and the Chico Unified School District's (CUSD) proposed Canyon View High School

project (State Clearinghouse No. 2001102057) located on the west side of Bruce Road just north of Raley Boulevard.

In addition, construction funding of the Bruce Road Reconstruction Project will be provided by an approximately $22 million Infill Infrastructure Grant awarded by the California Department of Housing and Community Development to facilitate multi-modal access to forthcoming affordable housing projects totaling 260 units located within and neighboring the Meriam Park Master Plan area.

**K. Public Agency Approvals:**

1. California Regional Water Quality Control Board – NPDES and §401 Water Quality Certification
2. California Department of Fish and Wildlife – Streambed Alternation Agreement §1602 and Consistency Determination or Incidental Take Permit, as appropriate to satisfy California Endangered Species Act requirements
3. Central Valley Flood Protection Board Encroachment Permit
4. U.S. Army Corps of Engineers – Clean Water Act §404 Permit
5. U.S. Fish and Wildlife §7 Endangered Species Act Consultation

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

☐ **Yes** ☒ **No**

**M. Prepared By:**

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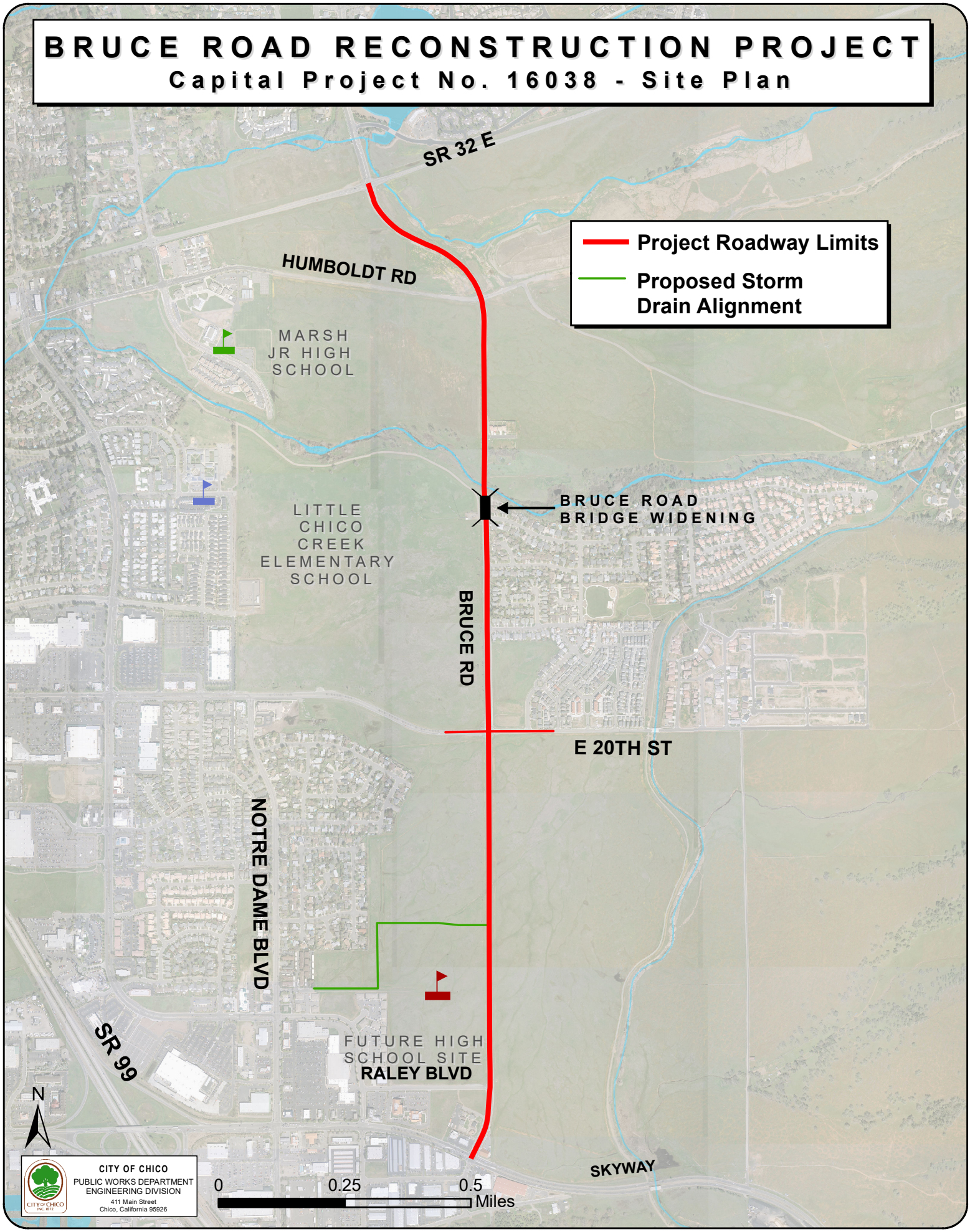
BRUCE ROAD RECONSTRUCTION PROJECT
Capital Project No. 16038 - Site Plan
SR 32 E
HUMBOLDT RD
Project Roadway Limits
Proposed Storm Drain Alignment
MARSH JR HIGH SCHOOL
LITTLE CHICO CREEK ELEMENTARY SCHOOL
BRUCE ROAD BRIDGE WIDENING
BRUCE RD
E 20TH ST
NOTRE DAME BLVD
SR 99
FUTURE HIGH SCHOOL SITE
RALEY BLVD
SKYWAY
N
CITY OF CHICO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
411 Main Street
Chico, California 95926
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Miles

Figure 2

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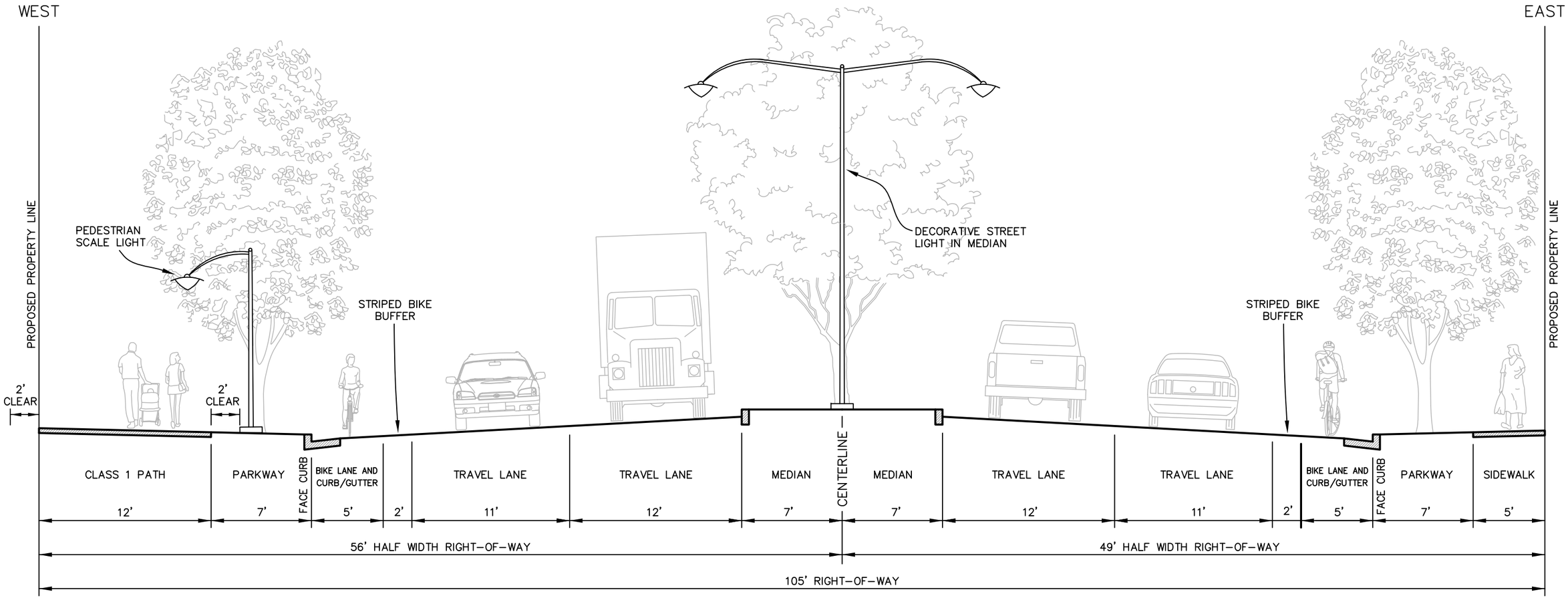


BRUCE ROAD TYPICAL SECTION
NTS

**Figure 3**

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## II. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below could be potentially affected by this project, but, due to the inclusion of specific mitigation measures, will result in impacts that are "Less Than Significant with Mitigation Incorporated," as indicated by the environmental checklist on the following pages.

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

## III. COMMUNITY DEVELOPMENT DIRECTOR DETERMINATION

On the basis of this initial evaluation:

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

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

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

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

☐ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION including revisions or mitigation measures that are imposed upon the proposed project. No further study is required.

Tracy R Bettencourt
Signature

9/23/2020
Date

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

## IV. EVALUATION OF ENVIRONMENTAL IMPACTS

- Responses to the following questions and related discussion indicate if the proposed project will have or potentially have a significant adverse impact on the environment.

- A brief explanation is required for all answers except "No Impact" answers that are adequately supported by referenced information sources. A "No Impact' answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors or general standards.

- All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

- Once it has been determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there is at least one "Potentially Significant Impact" entry when the determination is made an EIR is required.

- Negative Declaration: "Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study will describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 4, "Earlier Analysis," may be cross-referenced).

- Earlier analyses may be used where, pursuant to tiering, a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)].

- Initial studies may incorporate references to information sources for potential impacts (e.g., the general plan or zoning ordinances, etc.). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list attached, and other sources used or individuals contacted are cited in the discussion.

- The explanation of each issue should identify:
  a. The significance criteria or threshold, if any, used to evaluate each question; and
  b. The mitigation measure identified, if any, to reduce the impact to less than significant.

| **A. Aesthetics** Except as provide in Public Resources Code Section 21099, would the project or its related activities: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Have a substantial adverse effect on a scenic vista? | | | X | |
| 2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | | | X | |
| 3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | | | X | |
| 4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | | | X | |

**DISCUSSION:**

The proposed Project will result in changes the current visual character of the existing road and surrounding areas. The project is located in southeast Chico on the valley floor. A portion of the surrounding area is developed with residential and mixed-use land uses. There are also large areas of undeveloped land, some of which are approved or in the process of obtaining approvals for forthcoming development (e.g., Meriam Park and Stonegate developments).

**A.1. Less Than Significant Impact.**

The development of the proposed project will not impact scenic vistas as there are no project elements that would block views of view of the adjacent foothills or open spaces. The proposed project will have a **Less Than Significant Impact** on scenic vistas.

**A.2.-A.3. Less Than Significant Impact.**

The proposed development will not have a substantial adverse effect on a scenic vista. Bruce Road is not designated as a state scenic highway, nor are there any identified scenic resources including trees, rock outcroppings, and historic buildings, in the project area.

The existing rock wall is a recognizable feature along the western side of Bruce Road between Little Chico Creek and Humboldt Road. Although not linked with the initial alignment of Humboldt Road itself, the feature was constructed shortly thereafter (early 1870's) by Charles Royls who had contracted with the owner of the property at the time, John Bruce. The adjacent Meriam Park mixed use development project and associated environmental review document, Meriam Park Program Environmental Impact Report (Meriam Park EIR) (State Clearinghouse No. 2005072045), evaluated the rock walls along Humboldt Road and Bruce Road and concluded they are scenic resources which warranted consideration and mitigation to the extent feasible. In accordance with the Meriam Park EIR adopted mitigation measures, the Meriam Park developer, in coordination with the City of Chico, will remove the rock wall from its current location and reconstruct it just west of the current location outside of the Bruce Road ROW prior to the commencement of roadway construction activities adjoining the extents of the wall. Therefore, this project will result in a **Less Than Significant Impact** to the wall.

The proposed project will result in the removal of some existing vegetation, the majority of which consists of non-native and relatively young ornamental landscape trees (e.g., crepe myrtle, hackberry, and London plane). Approximately 36 trees will be removed along Bruce Road, plus an additional 18 trees along East 20th Street, for a total of 54 trees. However, incorporated as an integral feature in the project design and approval are landscape plans for the center median and the westerly parkway/landscape strip separating the roadway from the 12-foot wide paved Class I bicycle/pedestrian

path. The landscape design will result in the planting of a variety of native vegetation, including approximately 70 valley oaks (*Quercus lobata*) and 150 live oaks (*Quercus wislizeni*). With the construction of the proposed landscaped median and parkway strip, including the installation of irrigation and plantings, the potential impacts to the visual character of the site will be **Less Than Significant**.

**A.4. Less Than Significant Impact.** New light sources will be introduced to the site as part of the proposed project. The proposed lighting is consistent with lighting associated with the project vicinity, and will be consistent with the City's adopted Improvement Standards and lighting standards set forth in Chico Municipal Code Section 18R.12.0200 (Street Lights). Therefore, the project would have a **Less Than Significant Impact** on light or glare that could affect day or nighttime views.

**MITIGATION:** None required.

**B. Agriculture and Forest Resources:**

| In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. 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? | | | | X |
| 2. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | X |
| 3. 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))? | | | | X |
| 4. Result in the loss of forest land or conversion of forest land to non-forest use? | | | | X |
| 5. 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? | | | | X |

**DISCUSSION:**

**B.1.–B.5. No Impact.** The project will not convert Prime or Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. The California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program's 'Butte County Important Farmland 2016' map identifies the project site as "Grazing Land" and "Urban and Built-Up Land." Grazing land is characterized as land on which the existing vegetation is suited to the grazing of livestock. Urban and built-up land is occupied by structures with a building density of at least 1 unit to 1.5 acres.

The project will not conflict with existing zoning for agricultural use or forest land and is not under a Williamson Act Contract. The project will not result in the loss of forest land, conversion of forest land, or involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland or forest land. The site consists of an existing road with no agriculture or timber resources. The project will result in **No Impact** to agriculture and forest resources.

**MITIGATION**: None required.

| **C. Air Quality** Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Conflict with or obstruct implementation of the applicable air quality plans (e.g., Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan, Chico Urban Area CO Attainment Plan, and Butte County AQMD Indirect Source Review Guidelines)? | | | X | |
| 2. 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? | | | X | |
| 3. Expose sensitive receptors to substantial pollutant concentrations? | | | X | |
| 4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | | | X | |

**DISCUSSION:**

This section describes the impact analysis related to air quality for the proposed project. Air quality impacts associated with construction and operation of the proposed project were assessed and quantified (where applicable) using standard and accepted software tools, techniques, and emission factors. The following information is derived from the Air Quality and Greenhouse Gas Analysis prepared for the Bruce Road Reconstruction Project (ICF, 2020) (Appendix A).

**Construction**

Construction of the proposed project would generate emissions of ozone ($O_3$) precursor emissions, reactive organic gases (ROG) and nitrogen oxides ($NO_X$), as well as carbon monoxide (CO), sulfur oxides ($SO_X$), particulate matter, PM10 and PM2.5, that could result in short-term air quality impacts. Emissions would originate from off-road equipment exhaust, vehicle exhaust (on-road vehicles), site grading and earth movement, and paving. These emissions would be temporary (i.e., limited to the construction period) and would cease when construction activities are complete. It was assumed that construction of the proposed project would commence, weather permitting, in 2022 and extend through early 2023 for a duration, in aggregate, of approximately 13 months. The proposed construction is anticipated to be conducted within the hours specified in the individual noise ordinance for the City of Chico.

Construction emissions were estimated using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emission Model (RCEM) (Version 9.0) based on project-specific construction data (e.g., schedule, equipment, truck volumes) provided by the City of Chico (Erdahl pers. comm.). Construction activities were categorized into the following three components for the purposes of preparing the emissions inventory and include all required construction activities, including sidewalk improvements and storm drainpipe installation:

1. Road widening from Skyway Road to East 20th Street,
2. Road widening from East 20th Street to State Highway 32, and
3. Bridge construction over Chico Creek.

The emission calculations for each component were totaled to obtain total emissions from construction of the proposed project at both the daily and annual timescale.

A full list of the assumptions and methods used to quantify construction emissions in RCEM are presented in **Error! Reference source not found.**.

**Operational Mobile Source Emissions**
Emissions from motor vehicles within the project area were evaluated using the California Department of Transportation (Caltrans) CT-EMFAC model and traffic data provided by Iteris. The traffic data included vehicle activity for affected roadways in the immediate project vicinity. Emissions from vehicle movements were calculated by multiplying the vehicle-miles-traveled (VMT) estimates by the appropriate emission factors provided in CT-EMFAC2017. The operational scenarios evaluated include the following:

- Existing conditions (2020) with and without the project,
- Opening year (2024) with and without the project, and
- Horizon year (2040) with and without the project.

The CT-EMFAC output results are included in **Error! Reference source not found.**.

**Mobile Source Air Toxics/Toxic Air Contaminants (MSAT)**
The Federal Highway Administration (FHWA) (2016) has issued updated interim guidance using a tiered approach on how MSAT for transportation projects should be evaluated. Depending on the specific project circumstances, FHWA has identified the following three categories of analysis:

1. No analysis for exempt projects or projects that have no potential for meaningful MSAT effects,
2. Qualitative analysis for projects with low potential MSAT effects, and
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Potential MSAT effects associated with the proposed project are assessed according to FHWA's updated interim guidance and the project analysis tiers identified above. The analysis also considers guidance from the CARB's (2005) Air Quality and Land Use Handbook.

**Carbon Monoxide Hot Spots**
The analysis of CO impacts was conducted using CARB's EMFAC2017 model, the CALINE4 dispersion model, and p.m. peak-hour turning movement data provided by Iteris.

Based on the turning movement data, the intersection with the highest traffic volume would be Bruce Road and East 20th Street. Traffic conditions for the existing conditions, opening year, and horizon year were modeled to evaluate CO hot spot concentrations at the Bruce Road and East 20th Street intersection. Receptors were placed at each intersection corner. A standard receptor elevation of 5.9 feet was used consistent with CO protocol guidance (Garza et al. 1997). Worst-case wind angles and meteorological conditions were modeled to estimate conservative CO concentrations at each receptor. CO concentrations from the nearest monitoring station to the project area (Chico East Avenue

monitoring station) for the last 3 years in which complete data are available (2016 through 2018) were gathered and converted into a 3-year average to represent background CO levels.

**Selection of Future Year Baseline Conditions**
The CEQA Guidelines provide that existing conditions at the time when environmental review begins "normally" constitutes the baseline for environmental analysis. With respect to the proposed project, utilizing existing conditions to evaluate criteria pollutant impacts could misrepresent and mislead the public and decision makers with respect to potential air quality and climate change impacts for two reasons: 1) natural vehicle fleet mix turnover, and 2) changes in on-road emission factors.

1. The fleet mix in the County will be substantially different by the time the project is fully implemented in 2040, as the percentage of truck traffic to all vehicle traffic decreases.

2. On-road vehicle emissions rates are anticipated to lessen in the future due to continuing engine advancements and more stringent air quality regulations.

These facts represent substantial evidence in support of utilizing a future baseline, rather than existing conditions, to evaluate air quality and greenhouse gas (GHG) impacts. Accordingly, the CEQA baseline for the purposes of this analysis is defined as opening year (2024) and horizon year (2040) conditions. The 2024 baseline represents the opening year, which reflects emissions and impacts when the project is first operational. Emissions under existing conditions (2020) are also presented for informational purposes.

According to the State CEQA Guidelines Section 15064.7, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. The BCAQMD is responsible for ensuring that state and federal ambient air quality standards are not violated within Butte County. The BCAQMD CEQA Air Quality Handbook (2014) provides guidance for evaluating project-level air quality impacts and identified significance thresholds to assist lead agencies in determining criteria pollutant impacts for projects located in Butte County. The following sections summarize the local air district thresholds (where applicable) for each of the four impact criteria.

**Plan Consistency**
Projects that propose development that is consistent with the growth (i.e., population, employment, and VMT growth) anticipated by the Butte County Association of Governments (BCAG) would be consistent with BCAQMD's Air quality Attainment Plan (AQAP).

**Cumulatively Considerable Net Increase in Criteria Pollutants**
Project criteria pollutant and precursor emissions are calculated and compared to BCAQMD's thresholds. BCAQMD thresholds consider whether a project's individual emissions would result in a cumulatively considerable adverse contribution to the local existing air quality conditions. If a project's emissions would be less than these levels, the project would not be expected to result in a cumulatively considerable contribution to the significant cumulative impact. Accordingly, emissions generated by the proposed project would result in a significant impact if any of the thresholds summarized in Table 1 are exceeded.

**Table 1. Butte County Air Quality Management District Criteria Pollutant Thresholds**

| Source | ROG | NOX | PM10 |
|---|---|---|---|
| Construction (pounds per day) | 137 | 137 | 80 |
| Construction (tons per year) | 4.5 | 4.5 | -- |
| Operation (pounds per day) | 25 | 25 | 80 |

Source: BCAQMD 2014.
-- = no threshold

**C.1. Less Than Significant Impact**. The project will not conflict with or obstruct implementation of the applicable air quality plans. The applicable air quality plan for the project area is the 2015 AQAP, prepared by the Butte County Air Quality Management District (BCAQMD). The AQAP control measure commitments are based, in part, on the regional population, housing, and employment projections (and related transportation-source emissions) prepared by the region's cities and counties and adopted by BCAG (BCAQMD 2015). As such, projects that propose development that is consistent with the

population, employment, and VMT growth (and resultant emissions projections) anticipated in the relevant land use plans that were used in the formulation of the AQAP are therefore considered to be consistent with the AQAP.

The proposed project was included in the regional emissions analysis conducted by BCAG for the conforming 2016 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) (BCAG 2016). As such, the proposed project is considered consistent with the region's AQAP. Furthermore, many of BCAQMD's rules are intended to meet the attainment goals of the AQAP. The project would be consistent with applicable rules that would limit ROG and PM emissions (e.g., Rules 205, 230, 231) during construction.

Other project features designed to implement the Chico General Plan will also assist in meeting regional air quality attainment goals. For example, by using Roller Compacted Concrete (RCC) versus more typical asphalt paving materials, the project's design life is anticipated to nearly double from approximately 20 years for asphalt to an estimated 35-40 years for RCC. Increasing the time between required roadway replacement further aids in the reduction of construction emissions due to less frequent construction activities. In addition, the project has been designed consistent with General Plan policies relating to the development of Complete Streets. The 2-mile corridor includes sidewalks, a separated Class 1 bicycle/pedestrian facility, and construction of bus turnout/stops to facilitate transit usage to further minimize long-term emissions. As a result, the proposed project would not exacerbate nonattainment conditions within the County or conflict with air quality plans adopted to attain and maintain the CAAQS and NAAQS. This impact is considered **Less Than Significant**. No mitigation is required.

**C.2. Less Than Significant Impact**. The project will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. The USEPA has classified Butte County as nonattainment for the federal 8-hour $O_3$ standard and a partial maintenance area for the federal $PM_{2.5}$ standard. CARB has classified the area as nonattainment for the state 8-hour $O_3$, 24-hour $PM_{10}$, and annual $PM_{2.5}$ standards. BCAQMD has promulgated separate construction- and operation-period significance thresholds to help the Basin attain federal and state air quality standards and protect public health.

**Construction**
Construction of the proposed project would result in the short-term generation of criteria pollutant emissions. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather. An estimate of maximum daily construction-related emissions and comparison to BCAQMD thresholds is shown in Table 2. An estimate of annual construction-related emissions and comparison to BCAQMD thresholds is shown in Table 3.

**Table 2. Daily Criteria Pollutant Emissions from Project Construction (maximum pounds per day)**

| Construction Activity | ROG | $NO_x$ | PM10 Total | PM10 Exhaust | PM10 Dust | PM2.5 Total | PM2.5 Exhaust | PM2.5 Dust | CO | SOx |
|---|---|---|---|---|---|---|---|---|---|---|
| Road Widening (Skyway Road to East 20th Street)[1] | -- | -- | - | -- | -- | -- | -- | -- | -- | -- |
| Road Widening (East 20th Street to Highway 32) | 2 | 21 | 2 | 1 | 1 | 1 | 1 | <1 | 20 | <1 |
| Bridge Construction (over Little Chico Creek) | 2 | 20 | 2 | 1 | 1 | 1 | 1 | <1 | 25 | <1 |
| Maximum Daily[2] | 4 | 41 | 3 | 2 | 1 | 2 | 2 | <1 | 45 | <1 |
| Significance Threshold | 137 | 137 | 8 | -- | -- | -- | -- | -- | -- | -- |
| Exceeds Thresholds? | No | No | No | -- | -- | -- | -- | -- | -- | -- |

Source: Attachment 1 of Appendix A.

[1] Construction activities associated with the road widening from Skyway Road to East 20th Street would not occur during the maximum daily emission scenario.

[2] Emissions from project activities are combined into the project maximum and compared against the daily threshold for when construction activities would occur during overlapping days.

**Table 3. Annual Criteria Pollutant Emissions from Project Construction (tons per year)**

| Construction Activity | ROG | $NO_x$ | PM10 Total | PM10 Exhaust | PM10 Dust | PM2.5 Total | PM2.5 Exhaust | PM2.5 Dust | CO | SOx |
|---|---|---|---|---|---|---|---|---|---|---|
| **2022** | | | | | | | | | | |
| Road Widening (Skyway Road to East 20th Street) | 0.1 | 0.7 | 1.3 | <0.1 | 1.3 | 0.3 | <0.1 | 0.3 | 0.5 | <0.1 |
| Road Widening (East 20th Street to Highway 32) | 0.1 | 0.6 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.7 | <0.1 |
| Bridge Construction (over Little Chico Creek) | 0.1 | 1.1 | 0.1 | 0.1 | <0.1 | 0.1 | 0.1 | <0.1 | 1.3 | <0.1 |
| Total Annual | 0.2 | 2.4 | 1.5 | 0.1 | 1.3 | 0.4 | 0.1 | 0.3 | 2.6 | <0.1 |
| Significance Threshold | 4.5 | 4.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Exceeds Thresholds? | No | No | -- | -- | -- | -- | -- | -- | -- | -- |
| **2023[1]** | | | | | | | | | | |
| Bridge Construction (over Little Chico Creek) | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.2 | <0.1 |
| Significance Threshold | 4.5 | 4.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Exceeds Thresholds? | No | No | -- | -- | -- | -- | -- | -- | -- | -- |

Source: Attachment 1 of Appendix A.

[1] Road widening activities would not occur in 2023.

As shown in Table 2 and Table 3, project emissions are not expected to exceed BCAQMD construction-period thresholds, which were developed considering existing emissions concentrations and regional attainment designations under the ambient air quality standards (NAAQS and CAAQS). Compliance with BCAQMD Rule 205 (Fugitive Dust Emissions) would further reduce construction emissions. The contribution of emissions by projects that do not exceed project-specific significance thresholds are not considered by the BCAQMD to be cumulatively considerable. Therefore, this impact is considered **Less Than Significant**. No mitigation is required.

**Operation**
Operation of the proposed project would result in the long-term generation of criteria pollutant emissions from an increase in vehicles traveling within the project area. Table 4 presents estimates of the maximum daily operation-related emissions for existing conditions, opening year, and the horizon year. Table 4 also compares the project emissions to the no project baseline emissions and then compares the difference between them (i.e., net emissions) to BCAQMD thresholds.

**C.3. Less Than Significant Impact**

**Regional Criteria Pollutants**
The project will not expose sensitive receptors to substantial pollutant concentrations. BCAQMD develops region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. Recognizing that air quality is a cumulative issue, BCAQMD typically considers projects that generate criteria pollutants and ozone precursor emissions that are below the thresholds to be minor in nature. Such projects would not adversely affect air quality or exceed the NAAQS or CAAQS. As described under C.2, the proposed project would not exceed BCAQMD's emissions thresholds. As such, levels of criteria pollutants associated with the proposed project would not contribute a significant level of air pollution that could degrade regional air quality within the basin. This impact would be less than significant. No mitigation is required.

**Localized Particulate Matter**
During earthmoving activities required for construction, localized fugitive dust would be generated. The amount of dust generated by a project is highly variable and dependent on the size of the disturbed area at any given time, the amount of activity, soil conditions, and meteorological conditions. Fugitive dust would also be limited with compliance with BCAQMD Rules, specifically 200 (Nuisance), 201 (Visible Emissions), 202 (Particulate Matter Concentration), and 205 (Fugitive Dust Emissions). Furthermore, $PM_{10}$ emissions would not exceed BCAQMD's thresholds of significance (see Table 2). Accordingly, localized particulate matter emissions would be less than significant and would not expose receptors to substantial pollutant concentrations or risks. No mitigation is required.

**Mobile Source Air Toxics/Diesel Particulate Matter**

**Construction**
Heavy-duty equipment would generate Diesel Particulate Matter (DPM) during roadway-widening activities. As shown in Table 2, PM exhaust emissions (from both gasoline- and diesel-powered vehicles) would be minor (a maximum of 2 pounds per day) and only occur over a period of 13 months. The short-term construction period is well below the 30-year exposure period typically associated with increased cancer risks. Moreover, DPM from construction equipment would be transitory and spread throughout the entire 2-mile segment, as opposed to concentrated at a single location. Construction related mobile source air toxics and diesel particulate matter would also be limited with compliance with BCAQMD Rules, specifically 200 (Nuisance) and 201 (Visible Emissions). Accordingly, construction of the proposed project would not expose sensitive populations to substantial pollutant concentrations. This impact is **Less Than Significant**. No mitigation is required.

**Table 4. Estimated Operational Criteria Pollutant Emissions (pounds per day)**

| Operation Scenario | Daily VMT | ROG | $NO_x$ | PM10 Total | PM10 Exhaust | PM10 Dust | PM2.5 Total | PM2.5 Exhaust | PM2.5 Dust | CO Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Existing Conditions (2020) | | | | | | | | | | |
| No Project | 21,801 | 7 | 10 | 41 | <1 | 41 | 7 | <1 | 7 | 72 |
| Proposed Project | 22,663 | 7 | 10 | 43 | <1 | 43 | 7 | <1 | 7 | 75 |
| Net | 862 | <1 | <1 | 2 | <1 | 2 | <1 | <1 | <1 | 3 |
| Significance Threshold | | 25 | 25 | 80 | -- | -- | -- | -- | -- | -- |
| Exceeds Thresholds? | | No | No | No | -- | -- | -- | -- | -- | -- |
| Opening Year (2024) | | | | | | | | | | |
| No Project | 28,660 | 6 | 8 | 52 | <1 | 52 | 9 | <1 | 9 | 61 |
| Proposed Project | 29,522 | 7 | 8 | 54 | <1 | 54 | 9 | <1 | 9 | 63 |
| Net | 862 | <1 | <1 | 2 | <1 | 2 | <1 | <1 | <1 | 2 |
| Significance Threshold | | 25 | 25 | 80 | -- | -- | -- | -- | -- | -- |
| Exceeds Thresholds? | | No | No | No | -- | -- | -- | -- | -- | -- |
| Horizon Year (2040) | | | | | | | | | | |
| No Project | 71,961 | 6 | 7 | 126 | <1 | 126 | 21 | <1 | 21 | 76 |
| Proposed Project | 57,027 | 5 | 6 | 100 | <1 | 100 | 17 | <1 | 16 | 60 |
| Net | -14,934 | -1 | -2 | -26 | <1 | -26 | -4 | <1 | -4 | -16 |
| Significance Threshold | | 25 | 25 | 80 | -- | -- | -- | -- | -- | -- |
| Exceeds Thresholds? | | No | No | No | -- | -- | -- | -- | -- | -- |

Source: Attachment 2 of Appendix A

Notes: Values are rounded to the nearest whole number.

Negative emissions denote a decrease in emissions (i.e., emissions benefit).

BCAQMD = Butte County Air Quality Management District; NOx = nitrogen oxides; PM10 = particulate matter 10 micrometers in diameter; ROG = reactive organic gas; CO = carbon monoxide

As shown in Table 4, when compared to the no project condition, the proposed project's operational emissions would not exceed any of the BCAQMD thresholds and therefore would not be expected to contribute a significant level of air pollution such that regional air quality within the NSVAB would be degraded. This impact is **Less Than Significant**. No mitigation is required.

**Operation**
As discussed above, FHWA has issued an updated interim guidance using a tiered approach on how MSAT for transportation projects should be evaluated. Based on the three project categories outlined in FHWA's guidance, the proposed project is considered a project with low potential MSAT impacts since average daily traffic (ADT) in the project area would not exceed 60,000 under opening year (2024) or horizon year (2040) conditions. Consequently, ADT would be below FHWA's MSAT ADT threshold of 140,000 for projects with higher potential for MSAT impacts.

As shown in Table 4, VMT estimated for the proposed project by opening year (2024) is slightly higher than that for the no project because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the proposed project along Bruce Road, along with a corresponding decrease in MSAT emissions along the parallel routes. The additional travel lanes contemplated as part of the project would have the effect of moving some traffic closer to nearby homes; therefore, there may be localized areas where ambient concentrations of MSATs could be higher than without the project. However, by horizon year (2040) the VMT estimated for the proposed project is much lower than that for the no project. Furthermore, the widened portions of Bruce Road are neither considered by the CARB (2005) as a high-traffic road nor a roadway with significant diesel volumes. Accordingly, operation of the proposed project would not expose sensitive populations to substantial pollutant concentrations. This impact is **Less Than Significant**. No mitigation is required.

**Asbestos**

**Construction**
Because soils or geologic features that contain NOA are not present in the project area, there is no potential for impacts related to NOA emissions during construction activities. Demolition of the existing Bruce Road Bridge over Little Chico Creek would be subject to EPA's National Emissions Standards for Hazardous Air Pollutants and CARB's Airborne Toxic Control Measures if asbestos-containing materials were used in the original bridge construction. The asbestos NESHAP regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of ACM. This impact is **Less Than Significant**. No mitigation is required.

**Operation**
Operation of the project consists of traffic movement along the segment of Bruce Road within the project area. Operation of the project would neither involve ground-disturbing activities at a site with NOA nor demolition of buildings with asbestos fibers present in the structure. This impact is **Less Than Significant**. No mitigation is required.

**Carbon Monoxide Hot Spots**
Traffic generated by the proposed project would have the potential to create CO hot spots at nearby roadways and intersections. CO impacts were analyzed at the intersection of Bruce Road and East 20$^{th}$ Street using the traffic conditions from existing conditions (2020), opening year (2024), and horizon year (2040). Table 5 presents project CO concentrations summed with the background CO levels and compared against the CAAQS and NAAQS.

**Table 5. CO Concentrations at Bruce Road and East 20th Street Intersection (parts per million)**

| Source | Receptor | 1-Hour | | | 8-Hour | | |
|---|---|---|---|---|---|---|---|
| | | Existing Conditions with No Project (2020) | Existing Conditions with No Project (2020) | Existing Conditions with No Project (2020) | Existing Conditions with No Project (2020) | Existing Conditions with No Project (2020) | Existing Conditions with No Project (2020) |
| Bruce Road & East 20th Street | 1 | 8.6 | 8.6 | 8.8 | 5.6 | 5.6 | 5.7 |
| | 2 | 8.7 | 8.6 | 8.8 | 5.6 | 5.6 | 5.7 |
| | 3 | 8.8 | 8.7 | 8.9 | 5.7 | 5.6 | 5.8 |
| | 4 | 8.8 | 8.7 | 9.0 | 5.7 | 5.6 | 5.8 |
| CAAQS | | 20 | 20 | 20 | 9.0 | 9.0 | 9.0 |
| Exceeds CAAQS? | | No | No | No | No | No | No |
| NAAQS | | 35 | 35 | 35 | 9 | 9 | 9 |
| Exceeds NAAQS? | | No | No | No | No | No | No |

Notes: Receptors are located at each of the four corners of the intersection. All intersections modeled have two intersecting roadways.

The average 1-hour background concentration between 2016 and 2018 was 8.1 ppm. The average 8-hour background concentration between 2016 and 2018 was 5.2 ppm (U.S. Environmental Protection Agency 2020).

As shown in Table 5, the CO concentrations are not expected to contribute to any new localized violations of the 1-hour or 8-hour ambient state or federal air quality standards. Accordingly, sensitive receptors would not be exposed to substantial concentrations of CO. This impact is **Less Than Significant**. No mitigation is required.

### C.4. Less Than Significant Impact

**Construction**
The project will not result in other emissions, such as odors, affecting a substantial number of people. BCAQMD (2014) has identified the following common sources for offensive or strong odors: exhaust from heavy equipment, garbage dumpsters, restaurants, animal boarding facilities, feed lots and general agricultural operations, food processing, compost/green waste and wastewater treatment facilities, rendering plants, various industrial processes, landfills, and painting/coating operations.

Construction activities could generate odors from diesel exhaust associated with off-road equipment and haul trucks, as well as from ROG associated with architectural coatings and asphalt paving. However, construction activities would be temporary and therefore the exposure of sensitive receptors to these odors would be limited. The project would be compliant with Rules 230 (Architectural Coating) and 231 (Cutback and Emulsified Asphalt), which limit ROG emissions during construction. In addition, BCAQMD has adopted Rule 200 (Nuisance), which prohibits the discharge from non-vehicular sources quantities of air contaminants that cause a nuisance to the public. If public complaints are sufficient to cause the odor source to be considered a public nuisance, then BCAQMD can require the emission source to incorporate measures to correct the nuisance condition. Potential impacts of odors during construction would be **Less Than Significant**. No mitigation is required.

**Operation**
According to the CARB, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (CARB 2005). The proposed project does not involve any of these odor-generating and uses. CARB also provides recommended screening distances for siting new receptors near existing odor sources. The project would not site any new sensitive receptors near an existing odor source, because the project does not propose the construction of any sensitive land uses (e.g., schools or residences). Potential impacts of odors during operation would be **Less Than Significant**.

**MITIGATION:** None Required

| **D. Biological Resources** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species as listed and mapped in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | | X | | |
| 2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | | X | | |
| 3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | | X | | |
| 4. 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? | | | X | |
| 5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | X | |
| 6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | | | X | |

**DISCUSSION:**

A Biological Resource Assessment (BRA) was prepared for the project site in July 2020 by Gallaway Enterprises (Appendix B**Error! Reference source not found.**). The purpose of the BRA is to document the current endangered, threatened, sensitive and rare species, and their critical habitats that occur in the biological survey area (BSA) of the project. The BSA includes the project site as well as a 250-foot buffer of the projects site so that indirect effects on special status species could be identified. Primary references consulted include species lists and information gathered using the United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC), California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), the California Native Plant Society's (CNPS) list of rare and endangered plants, and literature review. A Draft Delineation of Jurisdictional Waters of the United States was also prepared for the project is in July 2020 by Gallaway Enterprises (Appendix C). The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the United States Army Corps of Engineers (USACE) Wetlands Delineation

Manual (Environmental Laboratory 1987) and other current regulations, manuals and interpretations of jurisdiction currently in effect.

The project site contains the habitat types of valley foothill-riparian, riverine, lacustrine, annual grassland, barren and urban. Valley foothill riparian habitat within the project site is associated with the riverine habitat of Little Chico Creek which traverses the project site. Lacustrine habitats are intermittently inundated depressions or ponded areas comprised of vernal pools and seasonal wetlands. Lacustrine habitats are primarily in the northern and southern portions of the project site. Annual grasslands occur throughout the project site and are a supporting habitat to the vernal pools, seasonal wetlands and swales. Barren habitats are comprised of the existing roadway, gravel road shoulders and sidewalks. Urban habitat is present in the form of residential and commercial development.

United States Fish and Wildlife designated Critical Habitat for Butte County meadowfoam (BCM, *Limnanthes floccosa ssp. californica*), vernal pool tadpole shrimp (*Lepidurus packardi*), and vernal pool fairy shrimp (*Branchinecta lynchi*) exists in the Bruce Road corridor from Humboldt Road to SR 32. The entire project site is also within the Doe Mill core area as defined by the USFWS Vernal Pool Recovery Plan.

The proposed project includes both the replacement of the bridge over Little Chico Creek and the widening of Bruce Road along its entire length. The replacement of the bridge over Little Chico Creek and the widening of Bruce Road will have unique circumstances and associated impacts on the environment. The following discussions will highlight the differing impacts when pertinent.

**D.1. Less Than Significant with Mitigation Incorporated**. The special-status species with a potential to occur within the project area are vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp *(Lepidurus packardi),* valley elderberry longhorn beetle *(Desmocerus californicus dimorphus),* western spadefoot (*Spea hammondii*), western pond turtle (*Emys maramorata*), tri-colored blackbird *(Agelaius tricolor),* western burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), pallid bat (*Antrozous pallidus)*, Central Valley steelhead (*Oncorhynchus mykiss*), and various bird species protected under the Migratory Bird Treaty Act (MBTA). The potential for occurrence for the aforementioned species is considered to be moderate to high due to suitable habitat and favorable conditions, with the exception of tri-colored blackbirds and Central Valley spring run Chinook salmon, whose habitat within the BSA is considered marginal and therefore the potential for occurrence is low. Butte County meadowfoam (*Limnanthes floccosa ssp. californica*) is known to occur in the project site.

<u>Vernal Pool Fairy Shrimp</u>
Vernal pool fairy shrimp are listed under the Federal Endangered Species Act (ESA) as threatened. This species is widespread, but not abundant. Known populations occur in northern California and the geographic range of this species encompasses most of the Central Valley from Shasta County to Tulare County. Vernal pool fairy shrimp typically hatch when the first rains of the year fill vernal pools and they mature in about 41 days under typical winter conditions. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Occupied habitats range in size from rock outcrop pools as small as one square meter to large vernal pools up to 12 acres. Smaller vernal pools are the most commonly occupied and are found more frequently in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands.

There is suitable habitat for vernal pool fairy shrimp within the shallow seasonal wetlands in the BSA. No protocol-level surveys for branchiopods were conducted within the BSA; however, multiple known CNDDB occurrences of vernal pool fairy shrimp were identified within 5 miles of the BSA (occurrence #121, #689) and the vernal pool and seasonal wetland features within the BSA provide suitable habitat. As such, vernal pool fairy shrimp are assumed to be present within the vernal features present in the BSA.

The proposed Project will directly impact approximately 0.16 acres of vernal pool fairy shrimp habitat within the Project area that potentially support vernal pool fairy shrimp. Indirect impacts to vernal pool fairy shrimp will also occur. The hydrology of the vernal features located up-gradient of the Project will not be indirectly impacted; however, there are a number of vernal features with suitable

habitat for vernal pool fairy shrimp that will be indirectly impacted by Project activities down-gradient of the construction activities. The Project activities will have an indirect impact on a total of 0.84 acres of vernal pool invertebrate habitat. Due to the proximity of proposed work in and near the habitat for vernal pool fairy shrimp, there is the potential for significant impacts to vernal pool fairy shrimp. In order to reduce potential impacts to vernal pool fairy shrimp to a less than significant level, Mitigation Measure D.1 is included.

Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp are federally endangered species. They are a small crustacean in the Triopsidae family. The vernal pool tadpole shrimp is known from 18 populations in the Central Valley, ranging from east of Redding in Shasta County, south to the San Luis National Wildlife Refuge in Merced County, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County (USFWS 1996). They inhabit vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates (USFWS 1996).

There is suitable habitat for vernal pool fairy shrimp within the shallow seasonal wetlands in the BSA. No protocol-level surveys for branchiopods were conducted within the BSA; however, multiple known CNDDB occurrences of vernal pool fairy shrimp were identified within 5 miles of the BSA (occurrence #78) and the vernal pool and seasonal wetland features within the BSA provide suitable habitat. As such, vernal pool fairy shrimp are assumed to be present within the vernal features present in the BSA.

The proposed Project will directly impact approximately 0.16 acres of vernal pool tadpole shrimp habitat within the Project area that potentially support vernal pool tadpole shrimp. Indirect impacts to vernal pool tadpole shrimp will also occur. The hydrology of the vernal features located up-gradient of the Project will not be indirectly impacted; however, there are a number of vernal features with suitable habitat for vernal pool tadpole shrimp that will be indirectly impacted by Project activities down-gradient of the construction activities. The Project activities will have an indirect impact on a total of 0.84 acres of vernal pool invertebrate habitat. Due to the proximity of proposed work in and near the habitat for vernal pool tadpole shrimp, there is the potential for significant impacts to vernal pool tadpole shrimp. In order to reduce potential impacts to vernal pool tadpole shrimp to a less than significant level, Mitigation Measure D.1. is included.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) is listed as threatened under the Federal ESA. The VELB is a medium sized (0.8 inch long) beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry shrubs. Adults feed on the foliage and flowers of elderberry shrubs and are present from March through early June. During this period the beetles mate and females lay eggs on living elderberry plants. The first instar larvae bore to the center of elderberry stems where they feed on the pith of the plant for one to two years as they develop. Prior to forming their pupae, the elderberry wood boring larvae chew through the bark and then plug the holes with wood shavings. In the pupal chamber, the larvae metamorphose into their pupae and then into adults where upon they emerge between mid-March through June (USFWS 1991). Current threats to VELB consist primarily of riparian habitat destruction, causing extirpation, fragmentation and isolation of beetle populations (USFWS 1991).

One small elderberry shrub occurs along the rock wall on the east side of Bruce Road just opposite Banner Peak Drive. This shrub is isolated and located approximately 90 to 100 meters outside of the riparian zone associated with Little Chico Creek. The elderberry shrub present within the BSA has several branches with a diameter greater than 1 inch. No exit holes were observed on the shrub during the VELB exit hole survey conducted on January 8, 2020. The only nearby CNDDB occurrences of VELB occur 2,510 meters to the north within the riparian zone of Big Chico Creek (occurrence # 107) and 3,951 meters away to the south within the riparian zone of Butte Creek (occurrence # 183). There are no known occurrences of VELB in the Little Chico Creek watershed. The proposed project includes the removal of the elderberry shrub resulting in direct impact; however, the shrub is isolated, located in uplands, and lacks identifiable VELB exit holes, thus no impacts to VELB are anticipated. Therefore, this is a **Less Than Significant Impact.**

Western Spadefoot
The western spadefoot toad is a species of special concern (SSC) in California. It is an endemic species of the state. The western spadefoot ranges from the northern point of the Central Valley south to the western corner of California. They are a stocky, small toad that varies in colors from gray, green and brown and typically have four irregular spots or stripes on their back. Their eyes are described as being golden with vertical pupils. The most distinguishing feature of the toad is a hardened, black spade on the hind foot. The spade is used for burrowing into moist soils. Suitable habitat consists of open grasslands with intermittent streams and vernal pools. Vernal pools are essential for breeding and depositing eggs. Current threats facing the western spadefoot toad are loss of habitat, changes in hydrological regimes, and human disturbances.

The BSA features vernal pools and ephemeral drainages that could support breeding habitat for western spadefoot when water is present. There is moderate potential for western spadefoot to occur within the BSA when water is present.

Western Pond Turtle
The western pond turtle is a species of special concern in California. Western pond turtles are drab darkish colored turtles with a yellowish to cream colored head. They range from the Washington Puget Sound to the California Sacramento Valley. Suitable aquatic habitats include slow moving to stagnant water, such as back waters and ponded areas of rivers and creeks, semi-permanent to permanent ponds and irrigation ditches. Preferred habitats include features such as hydrophytic vegetation, for foraging and cover, and basking areas to regulate body temperature. In early spring through early summer, female turtles begin to move over land in search for nesting sites. Eggs are laid on the banks of slow-moving streams. The female digs a hole approximately four inches deep and lays up to eleven eggs. Afterwards the eggs are covered with sediment and are left to incubate under the warm soils. Eggs are typically laid between March and August (Zeiner et al. 1990). Current threats facing the western pond turtle include loss of suitable aquatic habitats due to rapid changes in water regimes and removal of hydrophytic vegetation.

The drainages that occur in the BSA contain suitable habitat for western pond turtles; however, suitable habitat for western pond turtles only occurs when there is flowing water present. The drainages within the BSA generally lack emergent rocks and logs on which western pond turtles bask for thermoregulation; however, there is fresh emergent vegetation for foraging and cover and open banks for basking. Western pond turtles are frequently found within irrigation canals and drainages throughout their range in the Central Valley, but are not expected to be present when Little Chico Creek is dry. There is moderate potential for western pond turtle to occur when water is present.

Tricolored Blackbird
Tricolored blackbirds are listed as threatened under the California ESA (CESA). They range from southern Oregon through the Central Valley, and coastal regions of California into the northern part of Mexico. Tricolored blackbirds are medium-size birds with black plumage and distinctive red marginal coverts, bordered by whitish feathers. Tricolored blackbirds nest in large colonies within agricultural fields, marshes with thick herbaceous vegetation, or in clusters of large blackberry bushes near a source of water and suitable foraging habitat. They are nomadic migrators, so documenting occurrence at any location does not mean that they will necessarily return to that area. Current threats facing tricolored blackbirds include colonial breeding with a small population size, habitat loss, overexploitation, predation, contaminants, extreme weather events, and drought, water availability, and climate change (CDFW 2018).

There is marginal nesting habitat for tricolored blackbirds within the BSA where dense patches of riparian vegetation occur and the surrounding annual grassland provides marginal foraging habitat. Tricolored blackbirds are nomadic breeders and do not exhibit site fidelity. They are also colonial nesters that nest in large colonies, which are unlikely to be supported by the minimal riparian vegetation present within the BSA (CDFW 2018). Due to the marginal habitat present and the lack of nearby occurrences, tricolored blackbirds are not expected to occur within the BSA. The implementation of avoidance and minimization measures will ensure there are no impacts to tricolored blackbird.

Western Burrowing Owl
The western burrowing owl is listed as a SSC in the state of California. They are distributed throughout the western United States from Minnesota to the Pacific Coast, and into Canada and Mexico. In California, burrowing owls are distributed along the south and southeastern desert areas, throughout the Central Valley, and patchy areas around the Bay Area and southern coast lines and the north eastern high desert areas. The western burrowing owl is a small, slender owl with long tarsi, no ear tufts, and has a light to chocolate brown coloration with variable white spots. Suitable habitat includes open plains, grasslands, desert scrub and mima mound topography. Burrowing owls primarily nest in previously made mammal burrows, but will also use rock crevices and other dry natural and man-made cavities that provide cover from predators. Current threats facing the western burrowing owl include habitat loss and fragmentation, decline in burrowing rodents, and the spread of invasive plant species.

The open annual grassland and existing lava rock wall that extends along Bruce Road could contain suitable habitat for burrowing owls where suitable burrows and crevices exist.

Swainson's Hawk
Swainson's hawks are listed under the CESA as threatened. They are found throughout the western part of the United States and from Canada to Mexico. Swainson's hawks are a fairly large, slender hawk with three different color morph displays. The most common morph in northern California is the dark morph which demonstrates black to dark brown under coverts and flight feathers. Suitable habitat includes open grasslands or agricultural fields that are adjacent to a riparian forest or oak woodland. Swainson's hawks primarily nest in riparian forests next to open fields that provide foraging opportunities. Nesting and courtship begin in April. Current threats facing the Swainson's hawk are loss of nesting and foraging habitat, change in agricultural regimes, pesticides, poaching and human disturbances (CDFW 1994).

Swainson's hawks forage for small mammals and insects in open grasslands, low growing crops and pastures. Adjacent land surrounding the BSA consists of annual grassland, residential development, and Little Chico Creek. Swainson's hawks nest in trees taller than 10 feet in wetlands and along drainages, or in windbreaks in fields and around farmsteads (Tesky 1994). There are several trees taller than 10 feet within the BSA; therefore, there is suitable nesting habitat for Swainson's hawks within the BSA. There is suitable foraging habitat within the BSA and annual grassland adjacent to the BSA. According to the current data in the CNNDB, there are no known active nests within 10 miles of the Project site. Swainson's hawks will forage up to 10 miles from their nest. There are suitable nest trees within the BSA; however, given that there are no active nests within 10 miles of the suitable foraging habitat within the BSA, there is low potential for Swainson's hawks to forage within the BSA.

Pallid Bat
Pallid bats are designated as a CDFW SSC. Pallid bats roost alone, in small groups (2 to 20 bats), or gregariously (hundreds of individuals). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances/exits, and are high above the ground, warm, and inaccessible to terrestrial predators. However, this species has also been found roosting on or near the ground under burlap sacks, stone piles, rags, and baseboards. Lewis 1996 found that pallid bats have low roost fidelity and both pregnant and lactating pallid bats changed roosts an average of once every 1.4 days throughout the summer. Overwintering roosts have relatively cool, stable temperatures and are located in protected structures beneath the forest canopy or on the ground, out of direct sunlight. In other parts of the species' range, males and females have been found hibernating alone or in small groups, wedged deeply into narrow fissures in mines, caves, and buildings. At low latitudes, outdoor winter activity has been reported at temperatures between –5 and 10 °C.

Mature trees within the BSA that have suitable habitat elements (e.g., cavities, peeling bark) may provide suitable day roost habitat. There is moderate potential for pallid bats to occur within the BSA. Removal of mature trees within the BSA would have a potentially significant impact on Pallid bats in

the project area. Mitigation Measure D.7 would reduce the potential impact to a **Less Than Significant With Mitigation Incorporated** level.

Migratory Birds and Raptors

Nesting birds are protected under the Migratory Bird Treaty Act (MBTA) (16 USC 703) and the California Fish and Game Code (CFGC) (§3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.
The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

There is suitable nesting habitat for a variety of ground, shrub, and tree nesting avian species throughout the BSA.

Butte County Meadowfoam

Protocol level Butte County meadowfoam (BCM) and rare plant surveys were conducted on April 5 and 6, 2017, and March 23, 27, and April 2, 2018 during the appropriate flowering window of the target species. A survey for BCM was performed due to the soil type, Redtough-Redswale, at the project site. Redtough-Redswale is regarded as being primary habitat element for BCM.

Surveys were conducted in accordance with the November 2009 CDFW Protocols for Surveying and Evaluation Impacts to Special Status Native Plant Populations and Natural Communities and the September 1996 USFWS Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants.

The BSA was surveyed on foot using meandering transects. Portions of the BSA are parts of other development projects which are permitted and mitigated for environmental resources. Other areas of the BSA were not surveyed due to lack of access. The 2017 and 2018 surveys for BCM resulted in 0.30 and 0.45 acres of BCM occurrences respectively. Based on the 2017 and 2018 distribution of BCM, there are approximately 0.5 acres of occupied BCM habitat No other special status plant species were observed during the surveys.

Project implementation and construction activities have the potential to directly and indirectly impact Butte County meadowfoam occurrences in the BSA. Approximately 0.0002 acres (5 or fewer plants) of BCM will be directly impacted through removal and approximately 0.0002 acres (5 or fewer plants) will be indirectly impacted during construction. This is considered a potentially significant impact that requires mitigation. Mitigation Measure D.6 requires the City to obtain required approvals from the USACE, CDFW and USFWS to avoid, minimize or offset impacts to any species listed under either the State or Federal Endangered Species Acts or protected under any other State or federal laws. With the implementation of Mitigation Measure D.6., this impact is considered **Less Than Significant With Mitigation Incorporated.**

Migratory Birds, and Nesting Raptors

Migratory birds are protected in varying degrees under California Fish and Game Code, Section 3503.5, the Migratory Bird Treaty Act (MBTA), and CEQA. The project site currently provides suitable nesting and/or foraging habitat for several of these species that may nest on the ground in the low vegetation present within the project area. The site also provides a very small amount of riparian vegetation that may be used by birds protected by the MBTA.

To avoid impacts to bird and raptor species, including tri-colored blackbird, protected under the MBTA and the California Fish and Game Commission (CFGC), Mitigation Measure D.4 has been included.

Central Valley Spring Run Chinook salmon

Central Valley spring-run (CVSR) Chinook salmon are considered an Evolutionarily Significant Unit (ESU) by National Marine Fisheries Service (NMFS) and their listing status is threatened under the ESA and CESA. Central Valley spring-run Chinook salmon are differentiated from the other ESUs or other "runs" of Chinook salmon due to their distinct life history strategy in which natural populations migrate from the Pacific Ocean to their natal spawning habitat in Central Valley tributaries starting in the spring; as early as February for some populations. Key habitat for CVSR Chinook salmon includes moderately deep pools utilized for holding habitat over summer, small cobble or gravel substrate for spawning, and slow, off-channel water with debris or vegetation that juveniles utilize for rearing habitat and refuge. Shade and wood cover have been indicated as important for juvenile Chinook salmon holding habitat (Zajanc, et al. 2012).

According to the NMFS, the Little Chico Creek watershed is not typically used as a migration corridor or spawning habitat for adult CVSR Chinook salmon. There have been observations of CVSR Chinook salmon within the upper canyon reaches of Little Chico Creek during a few high flow years (California State University, Chico 2002), but due to the habitat deterioration and flow changes that have occur within the urban zone of Little Chico Creek, where the BSA is situated, the BSA only supports habitat for migrant or spill-over CVSR Chinook salmon from the upstream reaches of Little Chico Creek and only during high flows events. Chinook salmon juveniles are not expected to hold or rear within the BSA due to lack of preferred habitat components. Chinook salmon adults are not expected to hold in the BSA due to lack of cover such as bubble curtains, underwater rocky ledges, shade cover, or pocket water behind large rocks in fast water. As such, there is low potential for CVSR Chinook salmon to occur within the BSA when water is present. The proposed Project will require work within the channel of Little Chico Creek, but the in-channel work will be conducted when the creek is dry. As such, no fish species will be present at the time of construction and the Project will have no impacts to spring-run Chinook salmon.

Central Valley Steelhead

The Central Valley steelhead (referred to from here on as steelhead) is classified as a Distinct Population Segment (DPS) by NMFS. Steelhead are small-bodied in general compared to their coastal counterparts and rarely exceed 60 centimeters in fork length, which may be an adaptation to the distance inland these fish migrate to reach their spawning areas in some cases (Moyle 2002). Steelhead will spend one to three years growing in a marine environment before migrating into the Sacramento and San Joaquin River systems, as well as far upstream into the tributaries of these river systems, to spawn. Steelhead generally move quickly through the main stem of the Sacramento River to their respective spawning grounds, where they then seek out suitable spawning habitat. The steelhead population is entirely a "winter-run" fish that enter the river system in November through April as fully reproductively mature adults to spawn before emigrating back to marine habitat (Moyle et al. 2008). Adult steelhead require cold, clear, relatively fast-moving water that is usually provided by snowmelt-driven stream systems at the time they are spawning. Depths required for spawning are typically 10 to 150 cm (Moyle 2002), and optimum depth for spawning is 14 inches (Bovee 1978 cited in McEwan 2001). Juvenile steelhead may spend from just months up to seven years rearing in freshwater, with most emigrating to the ocean after one to two years (NMFS 2016). For the first year or two of life, juvenile steelhead are found in cool, fast-flowing permanent streams and rivers where riffles predominate over pools and there is ample cover from riparian vegetation or undercut banks (Moyle 2002).

Little Chico Creek has been designated by NMFS as critical habitat for steelhead; however, the portion of Little Chico Creek that occurs within the BSA is positioned within the urban zone of the creek which contains only intermittent flows. The upstream canyon zone of the creek supports perennial flows and steelhead have infrequently been documented in this portion of Little Chico Creek (California State University, Chico 2002). Due to the lack of perennial flows within the portion of Little Chico Creek within the BSA, the BSA only supports habitat for steelhead migrants and strays from the upstream portion of the creek and only during high flow events. Steelhead juveniles and adults are not expected to hold or rear within the BSA due to lack of preferred habitat components. There is moderate potential for steelhead to occur within the BSA when water is present. The proposed Project will require work within the channel of Little Chico Creek, but the in-channel work will be conducted when the creek is dry. As such, no fish species will be present at the time of construction and the Project will

have no direct impacts to steelhead. Further, any temporarily disturbed vegetation within the creek and along the creek banks will be re-planted and restored once the construction activities are complete. The project proposes to place approximately 300 cubic yards of rock slope protection (RSP) within Little Chico Creek to protect the banks and abutments. In addition, several small trees and shrubs will be removed on both sides of the current bridge. These activities will result in the minor alteration of 0.04 acres of steelhead critical habitat. With the implementation mitigation measure D.2, which will include compensatory mitigation for the loss of critical habitat, restoration of all temporarily disturbed area and the implementation of best management practices and avoidance measures, these impacts are considered **Less Than Significant with Mitigation Incorporated.**

Trees

The proposed project will result in the removal of some existing vegetation, the majority of which consists of non-native and ornamental landscape trees (e.g., crepe myrtles, hackberry, and London plane). Approximately 36 trees will be removed along Bruce Road, plus an additional 18 trees along East 20th Street, for a total of 54 trees. However, incorporated as an integral feature in the project design and approval are landscape plans for the center median and the westerly parkway/landscape strip separating the roadway from the 12-foot wide paved Class I bicycle/pedestrian path. The landscape design will result in the planting of a variety of native vegetation, including approximately 70 valley oaks (*Quercus lobata*) and 150 live oaks (*Quercus wislizeni*).

With the construction of the proposed landscaped median and parkway strip, including the installation of irrigation and plantings, the potential impacts to tree species and habitat at the site will be **Less Than Significant**.

**D.2. Less Than Significant with Mitigation Incorporated**. No Sensitive Natural Communities (SNC) as identified by the California Department of Fish and Wildlife have been mapped within the BSA.

The northern end of the project corridor traverses an area designated by the USFWS as Critical Habitat for Butte County meadowfoam (BCM, *Limnanthes floccosa ssp. californica*), vernal pool tadpole shrimp (*Lepidurus packardi*), and vernal pool fairy shrimp (*Branchinecta lynchi*). Critical habitat designation is a tool used by the USFWS that supports the continued conservation of imperiled species by guiding cooperation within the federal government and only affects federal agency actions. USFWS critical habitat mapping is not accurate and frequently includes habitat elements that do not provide any habitat elements essential for the continued survival of federally listed species. In this case, the roadway, road shoulder, and sidewalks are mapped as critical habitat, but they do not provide habitat for federally listed species. No aquatic resources in USFWS designated habitat will be impacted by the proposed project, thus no impacts to USFWS critical habitat are expected as a result of the project. However, Little Chico Creek has been designated by NMFS as critical habitat for steelhead.

The project traverses three separate areas identified in the City's General Plan Land Use Map as Resource Constraint Overlay (RCO) Areas. The Resource Constraint Overlay designation identifies areas that are known to have sensitive resources that would limit the potential for urban development, but which are not currently protected as open space preserves. The City of Chico General Plan Open Space and Environment Element, Figure OS-1 Sensitive Habitats, identifies the project corridor as containing the sensitive habitats of: Grassland, Grassland with Vernal Swale Complex, Vernal Pool, and Riparian Habitat. In addition, this element includes Policy OS-1.2 and Action OS-1.2.1 which require the protection of special-status species plant and animals and their habitats in compliance with State and Federal laws and regulations.

The proposed project would impact riparian and riverine habitat associated with Little Chico Creek, vernal pools and seasonal wetlands which are regulated to different degrees by the USFWS, NMFS USACE, RWQCB and CDFW. Impacts to these habitats would be considered a potentially significant impact. Mitigation Measures D.2 and D.6 will reduce these impacts to a **less than significant** level.

**D.3. Less Than Significant with Mitigation Incorporated**. A Draft Delineation of Waters of the United States (Appendix C) was prepared for the project site in August of 2020 by Gallaway Enterprises.

The types of aquatic resources identified within the BSA are distinguished as riverine, seasonal wetlands and vernal pools. As shown in Appendix C, **Error! Reference source not found.** the survey area contains 1.389 acres of Waters of the U.S.

The proposed project includes the replacement of the bridge over Little Chico Creek as well as the widening of Bruce Road which will directly fill riverine, seasonal wetlands and vernal pools. The estimated amount of direct impacts is 0.15 acres. These impacts will be a result of the road widening, bridge replacement, and associated infrastructure improvements. This is considered a potentially significant impact. Mitigation Measure D.6 will reduce these impacts to a **less than significant** level.

Mitigation Measure D.8 requires the City to obtain final permits from the USACE, CVWQCB, and CDFW prior to the construction of the project. With this mitigation, potential impacts to biological resources at the site will be **Less Than Significant with Mitigation Incorporated**.

**D.4.- D.6. Less Than Significant Impact.** The proposed project consists of the widening and replacement of existing transportation facilities. The extents and scope of the improvements to the roadway, bridge, and associated infrastructure will not be significantly different than what currently exists. The project will not result in the fragmentation of an existing wildlife habitat nor conflict with any local policies or ordinances protecting biological resources. The project's impact would be **Less Than Significant**.

**MITIGATION**:

**MITIGATION D.1. (Biological Resources):**
Prior to any ground-disturbing activities, the applicant shall compensate for direct and indirect impacts to habitat that may support valley elderberry longhorn beetle, vernal pool tadpole shrimp, vernal pool fairy shrimp and Butte County meadowfoam and the species themselves. The final amounts of impacts and mitigation will be determined through the Federal Endangered Species Act Section 7 consultation process between the USACE, USFWS and NMFS as well as the Californian Endangered Species Act through consultation with CDFW. The applicant shall purchase credits at an approved mitigation bank as defined by the U.S. Fish and Wildlife Service Biological Opinion, California Department of Fish and Wildlife's Incidental Take Permit or equivalent documentation. Note that the City of Chico retains a surplus of unused BCM mitigation credits, as approved by the regulatory agencies, that were purchased from the approved Dove Ridge Conservation Bank. Contingent on approval from the USFWS and CDFW, the City will apply a portion of their unused BCM credits to compensate for direct and indirect impacts to BCM as a result of the Project.

*MITIGATION MONITORING D.1.:* Public Works staff shall document the final purchase of required mitigation credits, or other method of compensatory mitigation documenting relief thereof, prior to commencement of construction activities.

**MITIGATION D.2. (Biological Resources):**
Prior to any vegetation or ground-disturbing activities associated with the development of the bridge over Little Chico Creek, the applicant shall compensate for any loss of Central Valley steelhead Critical Habitat, as determined through consultation between USACE and NOAA Marine Fisheries Service. The applicant shall purchase credits at an approved mitigation bank as defined by the NOAA Marine Fisheries Service Biological Opinion or equivalent document.

*MITIGATION MONITORING D.2.:* Public Works staff shall document the final purchase of required mitigation credits, or other method of compensatory mitigation documenting relief thereof, prior to commencement of construction activities.

**MITIGATION D.3. (Biological Resources):**
No later than 48 hours prior to any ground disturbance, pre-construction surveys will be conducted by a qualified biologist within the project limits for northwestern pond turtle and western spadefoot. If a pond turtle or western spadefoot is observed in the project limits during construction, all work will be stopped, and the turtle or western spadefoot will:

1. be allowed to leave on its own volition, or
2. be moved by the project biologist in the direction it was heading, at a safe distance from the grading activities, and at a safe location.

The biologist will report observations and relocations to the City.

*MITIGATION MONITORING D.3.:* Public Works staff will require final copies of the pre-construction surveys for Northwestern pond turtle and western spadefoot, prior to the commencement of construction. Should the species occur on the project site, a qualified biologist shall be retained on-site during ground-disturbance.

**MITIGATION D.4. (Biological Resources):**
If a CNDDB documented, Swainson's Hawk nest that has been active within 5 years of the beginning of construction exists within 10 miles of the project site, then, prior to any ground-disturbing activities, the City shall compensate for direct impacts to habitat that may support Swainson's hawks. The purchase of compensatory mitigation or preservation of foraging habitat will be necessary per the 1994 CDFW Staff Report regarding Mitigation for impacts to Swainson's hawks (*Buteo swansoni*) in the Central Valley of California at a ratio of 0.5:1 (0.5 acre preserved for every 1 acre of habitat affected).

*MITIGATION MONITORING D.4.:* Public Works staff shall document the final purchase of required mitigation credits, or other method of compensatory mitigation documenting relief thereof, prior to commencement of construction activities.

**MITIGATION D.5. (Biological Resources):**
If vegetation removal or initial ground disturbances occur during the avian breeding season (February 1 – August 31) the applicant shall hire a qualified biologist to conduct a migratory bird and raptor survey to identify any active nests within 250 feet of the biological survey area (BSA). A qualified biologist shall:

- Conduct a survey for all birds protected by the Migratory Bird Treaty Act and California Fish and Game Commission within seven (7) days prior to vegetation removal or initial ground disturbances (which ever activity comes first), and map all active nests located within 500 feet of the BSA where accessible;
- Develop buffer zones around active nests. The qualified biologist shall determine appropriate protection buffers around active nests based on the species tolerance of disturbance, species type, nest location, and activities that will be conducted near the nest. Construction activities shall be prohibited within the buffer zones until the young have fledged or the nest fails. Active nests shall be monitored once per week, or as necessary as determined by a qualified biologist, and an associated report submitted to the City of Chico Public Works Department after each monitoring activity (e-mail submittal is acceptable).
- If construction activities stop for more than 15 days, then another migratory bird and raptor survey shall be conducted within seven (7) days prior to the continuation of construction activities.

*MITIGATION MONITORING D.5.:* If initial ground disturbance is proposed to be conducted during the avian breeding season, Public Works staff will require final copies of the required surveys documenting relief thereof, prior to disturbances to the site. If active nests are encountered, the qualified biologist shall determine appropriate species protections buffers around active nests based on the species tolerance of disturbance, species type, nest location and activities that will be conducted near the nest. Construction activities shall be prohibited within the buffer zones until the young have fledged or the nest fails. Active nests shall be monitored once per week, or as necessary, and a report submitted to the City of Chico Public Works Department weekly or as necessary.

**MITIGATION D.6. (Biological Resources):**
Prior to commencing construction, the City shall have available the final copies of the permits and authorizations required by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries Service, California Regional Water Quality Control Board, California Department of Fish and Wildlife, and the Central Valley Flood Protection Board or copies of relevant correspondence documenting that no permit is required, as applicable.

*MITIGATION MONITORING D.6.:* Public Works staff will require final copies of the required permits or letters documenting relief thereof, prior to the commencement of construction.

**MITIGATION D.7. (Biological Resources):**

To minimize impacts to pallid bats, mature trees identified for removal shall be removed between September 16 – March 15, outside of the bat maternity season. Trees shall be removed at dusk to minimize impacts to roosting bats that may be utilizing the mature trees.

*MITIGATION MONITORING D.7.:* Public Works staff will ensure that tree removal is conducted during the appropriate time of year and after dusk.

**MITIGATION D.8. (Biological Resources):**
Prior to City approval that would directly result in disturbance to the site, Public Works staff will obtain final copies of the permits and compensatory mitigation required by the U.S. Army Corps of Engineers, CVRWQCB and CDFW, or copies of relevant correspondence documenting that no permit is required, as applicable.

*MITIGATION MONITORING D.8.:* Public Works staff will obtain final copies of the required permits and compensatory mitigation or letters documenting relief thereof, prior to commencing construction at the site.

| **E. Cultural Resources** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? | | X | | |
| 2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | | | X | |
| 3. Disturb any human remains, including those interred outside of dedicated cemeteries? | | X | | |

**DISCUSSION:**

**E.1. – E.3. Less Than Significant with Mitigation Incorporated.** Based on the recommendations of an Archaeological Inventory Report by the Northeast Information Center (NEIC), a Report of Cultural Resources Assessment of the project site was conducted by Stephan Pappas from ICF (Appendix D). The investigation consisted of an on-site records search and document review at the NEIC. Maps and records on file at this facility were consulted, along with the National Register of Historic Places Listed Properties and Determined Eligible Properties, the California Register of Historical Places, the California Points of Historical Interest, the California Inventory of Historical Resources, the California Landmarks Registry, and the Directory of Properties in the Historic Property Data File. Based upon the records search, local topography, and regional history, the project site is in an area considered to be highly sensitive for prehistoric, protohistoric, and historic cultural resources. The records search resulted in two previously recorded cultural resources within the APE Field survey. CA-BUT-0892H (P-04-0892; Humboldt Wagon Road) and CA-BUT-1071H (P-04-1071; Bruce Ranch Stone Fence) and one archaeological site CA-BUT-2207H (P-04-2207; barn foundation). No portions of the Humboldt Wagon Road were previously recorded in or near the project; however, the alignment was historically depicted in the area of the current Humboldt Road. The results of a search of the NAHC's Sacred Lands File for the Project Area indicated that the NAHC has no record of any sacred sites in or within the immediate vicinity of the Project Area.

The Mechoopda subgroup of Konkow Maidu populations used the local region for seasonal and/or permanent settlement, as well as for the gathering of plants, roots, seeds, domestic materials, and hunting seasonal game. The City of Chico and consulting archaeologists from ICF sent out letters to the Tribes identified by the NAHC regarding the project and inviting consultation; however, no Tribes requested consultation on the project.

On May 1, 2020, ICF conducted an archaeological survey of the portions of the Project Area, as well as a built environment survey. The survey consisted of a pedestrian inspection of the Project Area, with the surveyor walking a maximum of 15-meter-wide transects. The majority of the survey area consisted of overgrown nonnative grasses, yielding poor ground visibility due to thick grass cover along areas of the road right-of-way and areas within the proposed stormwater alignment. As a result of the pedestrian survey, no archaeological resources, historic or prehistoric, were identified in the Project Area. The only built resource identified during the survey was the Bruce Ranch stone fence.

As a result of the pedestrian survey, the Bruce Ranch stone fence (CA-BUT-1071H) was found to be in the same condition as previously recorded and no indications of the Humboldt Wagon Road were identified in the Project Area. Any original portions of the wagon road that may have been in the Project Area have since been destroyed and built over by the modern paved Humboldt Road. Site record update forms are provided in Appendix D**Error! Reference source not found.**. In addition, no indications of site CA-BUT-2207H were found within the Project Area and it was confirmed that the NEIC shapefiles were incorrectly plotted.

As a result of the study, the Bruce Ranch stone fence was identified in the Project Area; however, this resource was previously evaluated in 2010 as not eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

Pursuant to 36 Code of Federal Regulations (CFR) Part 800.5, Assessment of Adverse Effects, the results of the study conclude that the proposed project will have no adverse effect on historic properties or significant historical resources for the purpose of CEQA (PRC Section 5024.1[d][1]). Despite the Report of Cultural Resources Assessment's conclusion of no adverse effects on historical resources, the rock wall (Bruce Ranch Stone Fence) is considered a significant historical site at the local level, and only for limited exhibition value. CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered. Actions that would directly impact the section of rock wall along Bruce Road without preservation and exhibition of at least a short section of original or short section of reconstructed wall and/or placement of a plaque documenting the original feature and its age would be considered a significant impact. In accordance with the Meriam Park EIR adopted mitigation measures, the Meriam Park developer, in coordination with the City of Chico, will remove the rock wall from its current location and reconstruct it just west of the current location outside of the Bruce Road ROW prior to the commencement of roadway construction activities adjoining the extents of the wall (i.e., generally north of Little Chico Creek to Humboldt Road). Therefore, this project will result in a **Less Than Significant Impact** to the wall.

Given the heavily disturbed landscape of the Project Area, the lack of known prehistoric archaeological sites within the Project Area, and the depositional environment of the landscape, there is an overall low potential for subsurface archaeological deposits in most of the Project Area. Excavation depths for roadway reconstruction and associated utilities are anticipated to be up to 6-feet. For the bridge structure, a maximum excavation depth of 35-feet will be required to install abutment supports, which are anticipated to be Cast-In-Drilled-Hole (CIDH) piles. Geo-archaeological research indicated the presence of Late Holocene soils along Little Chico Creek. With the presence of Holocene soils and the possibility of a mound site near the creek, this area is identified as sensitive for buried archaeological material. Despite this, given the type of proposed project activities for the bridge at Little Chico Creek (construction of Cast-In-Drilled-Hole [CIDH] piles), the potential to encounter previously unrecorded prehistoric and historic-period resources is considered low. The overall finding for this study is that no historic properties recognized under Section 106 and no historical resources recognized under CEQA were identified within the Project Area; therefore, no historic properties/historical resources would be affected by the proposed project. However, there is always a possibility of unearthing an archaeological site during ground-disturbing activities. Therefore, in accordance with the intent of 'Memorandum of Understanding Regarding Principles for the City of Chico Consultation with the Mechoopda Indian Tribe of Chico Rancheria' dated August 8, 2008, and in the event that resources are inadvertently discovered, implementation of Mitigation Measures E.1., E.2., and R.1. (see Section R. Tribal Cultural Resources) will mitigate potential impacts to a less than significant impact. **Less than Significant with Mitigation Incorporated.**

**MITIGATION**:

**MITIGATION E.1. (Cultural Resources):** A note shall be placed on all grading and construction plans which informs the construction contractor that if any bones, pottery fragments or other potential cultural resources are encountered during construction, all work shall cease within the area of the find equivalent to a 25 foot radius around the materials (100 feet for human remains) pending an examination of the site and materials by a professional archaeologist. If during ground disturbing activities, any bones, pottery fragments or other potential cultural resources are encountered, the developer or their supervising contractor shall cease all work within 25 feet of the materials and notify City of Chico Public Works staff at 879-6900. A professional archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology and who is familiar with the archaeological record of Butte County, shall be retained by the City of Chico to evaluate the significance of the find. Further, City Public Works staff shall notify the local tribe(s) on the consultation list maintained by the State of California Native American Heritage Commission to provide local tribes the opportunity to monitor evaluation of the site. Site work shall not resume until the archaeologist conducts sufficient research, testing and analysis of the archaeological evidence to make a determination that the resource is either not cultural in origin or not potentially significant. If a potentially significant resource is encountered, the archaeologist shall prepare a mitigation plan for review and approval by the City of Chico Public Works Department, including recommendations for total data recovery, Tribal monitoring, disposition protocol, or avoidance, if applicable. All measures determined by the City of Chico to be appropriate shall be implemented pursuant to the terms of the archaeologist's report. The preceding requirement shall be incorporated into construction contracts and plans to ensure contractor knowledge and responsibility for proper implementation.

*MITIGATION MONITORING E.1:* Public Works staff will verify that the above wording is included on construction plans. Should cultural resources be encountered, the supervising contractor shall be responsible for reporting any such findings to Public Works staff, and contacting a professional archaeologist, in consultation with Public Works staff, to evaluate the find.

**MITIGATION E.2. (Tribal Monitor):** The City's contractor shall facilitate the presence of a Mechoopda Indian Tribal Monitor during all earth moving and ground disturbing activities. This includes, providing the contractor's contact information for the purpose of providing direct information to the Tribal Monitor regarding project scheduling and safety protocol, as well as project scope, location of construction areas, and nature of work to be performed. The determination to be present for any, some, or all construction activities shall be at the discretion of the Tribal Monitor.

*MITIGATION MONITORING E.2.:* Public Works staff will require and verify that the contractor provides the above information to the Mechoopda Tribal Monitor upon construction contract execution.

| **F. Energy**<br>Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | | | | X |
| 2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | | | | X |

**DISCUSSION:**

**F.1. – F.2. No Impact.** The proposed project includes lighting to illuminate the roadway for safety. The proposed project will be built to the current California Building Energy Efficiency Standards and will therefore be consistent with State and local requirements for efficiency use of energy resources. There will be **No Impact** with regard to energy resources.

| **G. Geology/Soils** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | X | |
| a. 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. | | | | X |
| b. Strong seismic ground shaking? | | | X | |
| c. Seismic-related ground failure, including liquefaction? | | | X | |
| d. Landslides? | | | X | |
| 2. Result in substantial soil erosion or the loss of topsoil? | | | X | |
| 3. 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? | | | X | |
| 4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | | | X | |
| 5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater, or is otherwise not consistent with the Chico Nitrate Action Plan or policies for sewer service control? | | | | X |
| 6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | X | | |

**DISCUSSION:**

**G.1. Less Than Significant Impact.** The City of Chico is located in one of the least active seismic regions in California. Currently, there are no designated Alquist-Priolo Special Studies Zones within the Chico Planning Area, nor are there any known or inferred active faults. Thus, the potential for ground rupture within the Chico area is considered very low. The project would result in No Impact as there are no known earthquake faults within the Chico Planning Area.

As there are no known faults in the project area, the rupture of a known fault would, at most, result in a seismic ground-shaking event on the project site. The bridge will be built to current American

Association of State Highway Transportation Officials (AASHTO), Caltrans Seismic Design Criteria (SDC) and current releases to the Caltrans Bridge Memo to Designers (MTD) criteria.

Under existing regulations, all future structures will incorporate AASHTO, SDC, and MTD standards into the design and construction that are designed to minimize potential impacts associated with strong ground-shaking during an earthquake. Therefore, the project would result in a Less Than Significant Impact.

The project site is not located in an area of sloping topography that would result in a landslide risk. Potential soil instability in, and around, the channel of Little Chico Creek would not result in potentially significant impacts through the incorporation of appropriate development standards and adherence to all necessary permits and certifications. Therefore, the project would result in a **Less Than Significant Impact.**

**G.2.-4. Less Than Significant Impact.** The City's General Plan Environmental Impact Report (EIR) identifies the eastern portion of the Chico Planning Area along the base of the Cascade foothills as the Tuscan Formation. The Tuscan Formation consists of a series of layers deposited by streams and mudflows between two and four million years ago. The mudflows spread out over the area, burying older rock, filling low areas, and gradually building a flat subdued landscape (City of Chico 2011b). Soil series on the project site are identified as Redsluff gravelly loam, Wafap-hamslough, Redtough-Redswale, Charger fine sandy loam, and Doemill-Jokerst by the Natural Resources Conservation Service (NRCS).

Development of the site will be subject to the City's Design Criteria and Improvement Standards (CMC §18R). The proposed project would be required to incorporate site-specific and City-wide measures, as identified in the grading standards defined in the CBC, which describe appropriate measures used to reduce potential impacts resulting from unstable soils and soil shrink-swell. All projects disturbing greater than one acre must comply with and obtain coverage under the applicable National Pollution Discharge Elimination Permit (NPDES) from the California Regional Water Quality Control Board (CRWQCB) per §402 of the Clean Water Act. The proponent will be required to prepare and implement Storm Water Pollution Prevention Plan (SWPPP) pursuant to Regional Water Quality Control Board (RWQCB) requirements. The SWPPP would require site specific, detailed measures to be incorporated into grading plans to control erosion and sedimentation. Furthermore, the City and the Butte County Air Quality Management District require implementation of all applicable fugitive dust control measures, which further reduces the potential for construction-generated erosion.

Therefore, prior to grading, the City would ensure that the proposed project has incorporated appropriate, site-specific construction and design standards per CMC §18R Design Criteria and Improvement Standards. As a result, potential future impacts relating to geology and soils are considered to be **Less Than Significant.**

**G.5. No Impact.** No septic tanks, sewer or alternative wastewater disposal systems are proposed for the subject property. The project will result in **No Impact** relative to policies governing sewer service control.

**G.6. Less Than Significant with Mitigation Incorporated.** The project is not anticipated to cause a substantial adverse change in the significance, directly or indirectly destroy a unique paleontological resource or site, geological feature, or unique geological feature. Due to the developed character of the site, the potential to encounter surface-level paleontological resources is considered low. However, there is the potential for accidental discovery of paleontological resources. In the event that resources are inadvertently discovered, implementation of Mitigation Measure E.1. would reduce impacts to a less-than-significant level. See Impact E.1. Cultural Resources for mitigation measure specifics. Therefore, impacts would be considered **Less Than Significant with Mitigation Incorporated.**

**MITIGATION**: Mitigation Measure E.1.

| **H. Greenhouse Gas Emissions** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment? | | | X | |
| 2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | | | X | |

**DISCUSSION:**
This section describes the impact analysis related to GHGs for the proposed project. It describes the methods used to determine the impacts of the proposed project and lists the thresholds used to conclude whether an impact would be significant.

In 2012, the Chico City Council adopted a Climate Action Plan (CAP) which sets forth objectives and actions that will be undertaken to meet the City's greenhouse gas (GHG) emission reduction target of 25 percent below 2005 levels by the year 2020. This target is consistent with the State Global Warming Solutions Act of 2006 (AB 32, Health & Safety Code, Section 38501[a])

The following information is derived from the Air Quality and Greenhouse Gas Analysis for the Bruce Road Reconstruction Project (ICF, 2020).

**Construction**
The methodology used to calculate GHG emissions generated during construction is the same as described above for air quality. Construction of the proposed project would generate emissions of $CO_2$, $CH_4$, and $N_2O$. Emissions would originate from off-road equipment exhaust and vehicle exhaust (on-road vehicles).

A full list of the assumptions and methods used to quantify construction emissions in RCEM (Roadway Construction Emission Model - Version 9.0) are presented in Appendix A**Error! Reference source not found.**.

**Operational Mobile Source Emissions**
The methodology used to calculate criteria pollutant emissions from motor vehicles within the project area was similarly used to calculated GHG emissions from motor vehicles but for the following exceptions.

- Yearly emissions were calculated by multiplying daily emissions by the value of 347, consistent with CARB methodology to extrapolate yearly traffic emissions from daily emissions (CARB 2008).

A full list of the assumptions and methods used to quantify operation emissions in CT-EMFAC are presented in Appendix A**Error! Reference source not found.**.

**Use of Future Year Baseline Conditions**
As discussed under Air Quality, above, the CEQA baseline for the purposes of this analysis is defined as opening year (2024) and horizon year (2040) conditions. The 2024 baseline represents the opening year, which reflects emissions and impacts when the project is first operational. The 2040 baseline represents the full build year, which reflects full impacts of the project, accounting for future fleet changes (less trucks), VMT growth, and appropriate engine exhaust fuel consumption and emission factors. Emissions under existing conditions (2020) are also presented for informational purposes.

**H.1. Less Than Significant Impact.** Short-term construction activities would result in GHG emissions from fuel combustion by off- and on-road construction equipment and vehicles. These sources would emit approximately 608 MT $CO_{2e}$ over the 13-month construction period between 2022 and 2023. Operation of the proposed project would result in the long-term generation of GHG

emissions from an increase in vehicles traveling within the project area. Table 6 presents the proposed project's modeled annual GHG emissions.

**Table 6. Estimated Operational GHG Emissions (pounds per day)**

| Operation Scenario | Daily VMT | CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Existing Conditions (2020) | | | | | |
| No Project | 21,801 | 2,603 | 0.17 | 0.10 | 2,637 |
| Proposed Project | 22,663 | 2,706 | 0.18 | 0.10 | 2,742 |
| Net | 862 | 103 | 0.01 | 0.00 | 105 |
| Opening Year (2024) | | | | | |
| No Project | 28,660 | 2,970 | 0.17 | 0.09 | 3,002 |
| Proposed Project | 29,522 | 3,060 | 0.17 | 0.10 | 3,092 |
| Net | 862 | 90 | 0.01 | 0.00 | 91 |
| Horizon Year (2040) | | | | | |
| No Project | 71,961 | 5,226 | 0.21 | 0.13 | 5,271 |
| Proposed Project | 57,027 | 4,142 | 0.17 | 0.11 | 4,178 |
| Net | -14,934 | -1,084 | -0.04 | -0.03 | -1,094 |

Source: Attachment 2 of Appendix A and Bettencourt pers. comm. Notes: Values are rounded to the nearest whole number.
Negative emissions denote a decrease in emissions (i.e., emissions benefit).
BCAQMD = Butte County Air Quality Management District; $CO_2$ = carbon dioxide; $CH_4$ = methane; $N_2O$ = nitrous oxide

As shown in Table 6, under existing conditions and the opening year, project implementation would increase GHG emissions compared to the no project conditions. The negligible emissions (105 MT $CO_{2e}$ in 2020 and 91 MT $CO_{2e}$ in 2024) are attributable to the minor increase in VMT under the proposed project. VMT estimated for the proposed project by opening year is slightly higher than that for the no project because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. However, by the horizon year, the VMT estimated for the proposed project is much lower (more than 20 percent) than that for the no project (see Table 6). Accordingly, GHG emissions in the horizon year would be less than the no project conditions (i.e., an emission benefit).

The most applicable GHG legislation to transportation projects, including the proposed project, is SB 375. SB 375 was enacted to reduce GHG emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. Under this law, BCAG is tasked with developing an SCS that provides a plan for meeting per capita $CO_2$ emissions levels allocated to BCAG by CARB. As discussed in Regulatory Setting, these levels are 6 percent below 2005 emissions levels by 2020 and 7 percent below 2005 levels by 2035. Accordingly, the targets established by SB 375 not only address near-term (2020) emissions, but also long-term (2035) emissions.

BCAG's 2016 RTP/SCS demonstrated that a 6 percent reduction will be achieved by 2020 and a 7 percent reduction will be achieved by 2035 (BCAG 2019). GHG emissions associated with the RTP/SCS, including those projects identified in the RTP/SCS, would therefore be less than significant.

As discussed in Section C. (Air Quality), the proposed project is listed in the 2016 RTP/SCS. The design concept and scope of the proposed project is consistent with the project description in both documents. Since the proposed project is identified and consistent with BCAG's 2016 MTP/SCS, which was found to have a less-than-significant GHG impact, project-level GHG emissions would be consistent with SB 375.

As shown in Table 6, relative to the no project, the proposed project would reduce VMT under the horizon year. This is consistent with SB 743, which expressly aims to reduce VMT consistent with the state's climate change goals. The project would also promote a pedestrian and bicycle-friendly environment by providing a connected bicycle network and improved streetscapes. These improvements would further decrease VMT and GHG emissions beyond the horizon year emissions benefit that was quantified in Table 6. The proposed project reduces VMT and emissions under the horizon year, is identified in the RTP/SCS, and includes pedestrian and bicycle infrastructure further

decreasing VMT. The project is consistent with state climate goals and supporting transportation policies enacted to reduce VMT and promote active transportation. Therefore, the project would be consistent with SB 32 and AB 32. This impact would be **Less Than Significant**. No mitigation is required.

**H.2. Less Than Significant Impact.**
While construction would generate short-term GHGs, these emissions would be minor (608 MT CO2e). As discussed in H.1., the proposed project reduces VMT and emissions under the horizon year, is identified in the RTP/SCS, and includes Complete Streets pedestrian and bicycle infrastructure further decreasing VMT. The project would not conflict with the state's climate goals and supporting transportation policies enacted to reduce VMT and promote active transportation. Furthermore, the Complete Streets improvements to pedestrian, bicycle, and traffic conditions are also consistent with Chico General Plan and the City's 2020 CAP (Actions 1.10.2, 1.11, 1.12, 1.13, and 1.14). These City and regional plans have been adopted to support state and local GHG reduction goals (e.g., AB 32 and SB 32). Additionally, the project includes the planting of extensive vegetation, including over 200 native oak trees. Chico's CAP, in conjunction with the General Plan, meet the State criteria for tiering and streamlining the analysis of GHG emissions in subsequent CEQA project evaluation. Therefore, to the extent that a development project is consistent with CAP requirements, potential impacts with regard to GHG emissions for that project are considered to be **Less Than Significant**.

**MITIGATION**: None Required.

| **I. Hazards and Hazardous Materials** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | X | |
| 2. 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? | | X | | |
| 3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | X | | |
| 4. 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? | | X | | |
| 5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | | | | X |
| 6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | | | X |
| 7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? | | | | X |

**DISCUSSION:**

An Initial Site Assessment (ISA) was developed by Burleson Consulting, Inc. for the proposed project to characterize the project area right of way conditions relative to environmental contamination concerns and to identify obvious, actual, and potential concerns (Appendix E).

**I.1. Less Than Significant Impact.** The project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Hazardous materials will be used during construction activities (e.g., equipment maintenance, fuel, solvents, roadway resurfacing and re-striping materials). However, all hazardous material use would be required to comply with all applicable local, state, and federal standards associated with the handling and storage of hazardous materials. Use of hazardous materials in accordance with applicable standards ensures that any exposure of the public to hazard materials would result in a **Less Than Significant Impact.**

**I.2. Less Than Significant With Mitigation.** The ISA developed by Burleson Consulting, Inc. identified one Recognized Environmental Condition (REC) within the project boundary. The Humboldt Road Burn Dump (HRBD) and associated properties are considered a high-risk REC. Construction activities have the potential to disturb soils that may have been contaminated with burn ash (lead other heavy metals), a high-risk REC, from the operation of the HRBD. While the burn dump was remediated, recently planned activities along SR 32 at the north end of the project include planning measures and regulatory requests to address lead contaminated soil. In addition, burn ash was reported as remaining within subsurface soil within the Bruce Road right-of-way after remediation was complete. Due to historic evidence, proximity to project related construction activity, and the level of ground disturbing activity anticipated as part of the project in this vicinity (excavation up to 6-feet depth), the site is considered a high-risk REC (Burleson, 2020). Because there is a potential to disturb soils associated with the HRBD, there could be a hazard posed to the public or environment as a result of disturbing these potentially hazardous materials. Mitigation Measure I-1 requires the City to conduct a site investigation consisting of soil sampling to determine if burn ash (including total and leachable arsenic, lead and zinc) are present within the soil, in cooperation with Regional Board Staff, and develop a soil management plan or equivalent to establish protocols for handling, sampling, storage and disposal of any suspected lead-impacts soils generated during construction activities. This is considered a **Less Than Significant Impact With Mitigation**.

**I.3. Less Than Significant With Mitigation.** Marsh Junior High School is located within one-quarter mile of the project site. Exhaust emissions and fugitive dust generated during construction activities have the potential to reach the school property and affect the school population. Exhaust emissions and fugitive dust generated during construction activities would be minimized by adhering to the BCAQMD's Air District Rules, specifically 200 (Nuisance), 201 (Visible Emissions), 202 (Particulate Matter Concentration), and 205 (Fugitive Dust Emissions). The ISA developed by Burleson Consulting, Inc. identified one Recognized Environmental Condition (REC) within the project boundary. The Humboldt Road Burn Dump (HRBD) and associated properties are considered a high-risk REC. Construction activities also have the potential to disturb soils that may have been contaminated with burn ash (lead other heavy metals), a high-risk REC, from the operation of the HRBD. Because there is a potential to disturb soils associated with the HRBD, there could be a hazard posed to the public or environment as a result of disturbing these potentially hazardous materials. Mitigation Measure I-1 requires the City to conduct a site investigation consisting of soil sampling to determine if burn ash (including total and leachable arsenic, lead and zinc) are present within the soil in cooperation with Regional Board Staff and develop a soil management plan or equivalent to establish protocols for handling, sampling, storage and disposal of any suspected lead-impacts soils generated during construction activities. This is considered a **Less Than Significant Impact With Mitigation**.

**I.4. Less Than Significant with Mitigation.** The ISA developed by Burleson Consulting, Inc. identified one Recognized Environmental Condition (REC) within the project boundary and six other regulatory listed sites in the project area. As previously mentioned, as there is a potential to disturb soils associated with the HRBD, there could be a hazard posed to the public or environment as a result of disturbing these potentially hazardous materials therefore Mitigation Measure I.1. is required. This is considered a **Less Than Significant Impact With Mitigation.**

**I.5. No Impact.** The project site is not located in the vicinity of a public or private airport; therefore, there will be **no impact**.

**I.6. No Impact.** Development of the proposed project would neither hinder the implementation, nor physically interfere with, emergency response or evacuation plans. Street designs and improvements will be adequate for ingress and egress of emergency response vehicles. The proposed project is considered to have **No Impact.**

**I.7. No Impact.** The project site is located in an area of high sensitivity to wildland fire risks. No structures are proposed as part of the proposed project, therefore there is N**o Impact**.

**MITIGATION**:

**MITIGATION I.1. (Hazards):** Prior to any ground-disturbing activities between Humboldt Road and State Route 32, including the intersections, a Limited Soils Assessment (LSA) shall be conducted in the aforementioned area for the purpose of assessing on-site shallow soil for potential impacts from

the following constituents of concern: total and leachable arsenic, lead, and zinc. The LSA shall also determine if excavated soils generated during construction activities are likely to be classified as a regulated waste. Should any of the constituents of concern be found in excess concentrations, the applicant shall prepare a Soil Management Plan (SMP) or equivalent report, which shall be distributed to construction personnel. The SMP shall establish protocols for handling, sampling, storage, and disposal of any suspected burn ash-impacted soils generated during construction activities.

*MITIGATION MONITORING H.1.*: Public works staff will require final copies of the required assessment/plan documenting relief thereof, prior to commencing construction at the REC site.

| **J. Hydrology/ Water Quality** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | | X | | |
| 2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | | | X | |
| 3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | | | X | |
| a. result in substantial erosion or siltation on- or off-site; | | | X | |
| b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | | | X | |
| c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | | | X | |
| d. impede or redirect flood flows? | | | X | |
| 4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | | | X | |
| 5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | | | X | |

**DISCUSSION:**

**J.1. Less Than Significant Impact With Mitigation.** The proposed project includes a new storm drainage system with a new outfall into Little Chico Creek. The new outfall will discharge into and energy dissipation structure that will then flow into Little Chico Creek. This outfall will replace and existing outfall near the Little Chico Creek Bridge.

A new stormwater drainage pipe that serves the southern end of the project area will connect to an existing 42 inch storm drainage pipe on Freemont Street to the west of the Bruce Road Corridor. The new storm drainpipe will accommodate stormwater inputs from the area between 20$^{th}$ Street and Raley's Boulevard.

The proposed project also includes the replacement of a bridge over Little Chico Creek. The new bridge will include the installation of cast-in-drilled-hole (CIDH) piles within the creek channel, similar to the construction of the existing bridge. The widening of Bruce Road will result in the filling of

several wetlands and surface drainage features. Under existing State regulations, the project proponent is required to obtain a water quality certification or waiver from the Central Valley RWQCB. Through the RWQCB's permitting process (refer to Mitigation Measure D.6), the project will be required to avoid, minimize, and/or compensate for potential discharges into regulated waterways based on a detailed review of the storm drain system design, outfall and bridge construction techniques.

Existing State permitting requirements by the RWQCB, will ensure that the project will not result in the violation of any water quality standards or waste discharge requirements. Due to the scope and nature of the proposed project it is not expected that the project would degrade ground water quality. With these standard permitting and water quality requirements in place, potential impacts to water quality from the project are considered to be **Less Than Significant With Mitigation**.

**J.2. Less Than Significant Impact.** There would be no new sources of groundwater extraction. With its use as a roadway, there will be some water use in the form of landscaping irrigation, however the project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge or sustainable groundwater management 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).

California Water Service Company (Cal Water) is the local water provider in the Chico area with the sole source of water for the Chico District, including the project site. Cal Water relies entirely on groundwater pumped from the Sacramento Valley Basin, which is characterized as having abundant supplies and having demonstrated a historical ability for its groundwater levels to recover quickly after drought events. Cal Water's 2015 Urban Water Management Plan for the Chico-Hamilton City District indicates that potable water supplies were estimated to be 18,227 acre-feet in 2015 and are expected to increase to 37,974 acre-feet by 2040. Actual groundwater supplies available to Cal Water are significantly greater that the 2015–2040 supply totals reported in the Plan, as the company only pumps what it needs to meet customer demand (California Water Service, 2016). Therefore, the proposed project is anticipated to result to a level that is **Less Than Significant.**

**J.3 (a)–(d) Less Than Significant Impact.** The project would alter the existing drainage patterns at the site, however, it would not result in substantial erosion or siltation on- or off-site, or create excessive runoff because prior to construction the project would have to demonstrate compliance with City/State post-construction storm water management requirements including the General Construction Permit requirements of the NPDES, as well as, the preparation of a SWPPP that incorporates water quality control BMP's.

Road projects that create 5,000 square feet or more of newly constructed contiguous impervious surface and that are public road projects are subject to post-construction storm water management requirements, including source control measures and LID design standards (§15.50.080(D)). Source control measures deal with specific onsite pollution-generating activities and sources, and LID design standards apply techniques that infiltrate, filter, store, evaporate and detain runoff close to the source of rainfall to maintain a site's pre-development runoff rates and volumes. Further, regulated projects that create and/or replace one acre or more of impervious surface require "hydromodification management" that limits post-project runoff to pre-project flow rates for the 2-year, 24-hour storm.

With the application of the existing regulations outlined above, the project will not substantially degrade water quality drainage systems or provide substantial additional sources of polluted runoff. Under existing City/State requirements for the project to implement BMPs and incorporate LID design standards, storm water impacts from anticipated future construction and operation of the project would be **Less Than Significant**.

**J.4. Less Than Significant Impact.** According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 06007C506E and 06007C0510E, the project site is predominately in Zone X and traverses two areas of Zone AE. Zone AE is identified as a Special Flood Hazard Area. Little Chico Creek and the southern end of Bruce Road where it meets Skyway are labeled as Zone AE. The project site is not located in an area that is prone to seiche or tsunami. Risks

associated with inundation and the release of pollutants by seiche or tsunami, would not occur beyond existing conditions. This is considered a **Less Than Significant Impact.**

**J.5. Less than Significant Impact.** The implementation is the proposed project is not expected to substantially degrade water quality with the implementation of the SWPPP and BMPs. The project will not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The impact to water quality will be **Less Than Significant.**

**MITIGATION**:
**MITIGATION J.1. (Hydrology):** Prior to grading and ground-disturbance, the City shall coordinate with Central Valley Flood Protection Board to obtain an Encroachment Permit for the proposed project. Public Works staff shall ensure the acquisition of the permit and compliance with any design and measures to minimize environmental impacts as a result of the project.

*MITIGATION MONITORING J.1.:* Public Works staff will require final copies of the required permits or letters documenting relief thereof, prior to conducting any grading that will result in disturbances to the site.

| **K. Land Use and Planning**<br>Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Physically divide an established community? | | | | X |
| 2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | | | | X |

**DISCUSSION:**

**K.1. No Impact.** The project will not physically divide an established community. Therefore, the project is anticipated to have **No Impact**.

**K.2. No Impact.** The project implements General Plan goals and policies which strive to enhance community connectivity and improve public safety and access. The project is also identified in the Butte County Regional Transportation Plan. There will be no conflicts with land use plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect. This is considered **No Impact.**

**MITIGATION**: None Required.

| **L. Mineral Resources**<br>Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. 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? | | | | X |
| 2. 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? | | | | X |

**DISCUSSION:**

**L.1.-2. No Impact.** There are no active mines and no known areas with mineral resource deposits within the Chico Planning Area, although historically several areas along Butte Creek were mined for gold, sand, and gravel. The majority of the closest mining operations are located to the southeast, outside of the Chico Planning Area (City of Chico, 2011b). The project would not result in the loss of availability of a known mineral resource or mineral resource recovery site. Mineral resources are not associated with the project or located on the project site. Therefore, the project would have **No Impact** on mineral resources.

**MITIGATION**: None Required.

| **M. Noise** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | | X | | |
| 2. Generation of excessive groundborne vibration or groundborne noise levels? | | | X | |
| 3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | | | | X |

**DISCUSSION:**
The following information is derived from the Noise and Vibration Report developed for the proposed project by ICF (Appendix F). **Error! Reference source not found.**

**M.1. Less Than Significant Impact With Mitigation**.

**Operation**
Traffic noise modeling results for existing (2020), opening year (2024), and full build-out year (2040) conditions without and with the project are summarized in Appendix F. Existing conditions without and with the project are included for CEQA purposes and to evaluate the effect of nose level increases due to the project, excluding the effects of future growth in traffic. However, opening year and future build-out year comparisons without and with the project are used to determine the increase in noise levels due to project operation. The comparison of with-project to without-project conditions indicates the direct effect of the project. Modeling results are rounded to the nearest decibel.

Traffic noise levels at modeled receiver locations for opening year (2024) no-build conditions are predicted to be in the range of 46 to 69 dBA CNEL, accounting for all types of land use in the study area. Under opening year build conditions, traffic noise levels are predicted to range from 48 to 69 dBA CNEL.

In the design year (2040), traffic noise levels are predicted to be in the range of 49 to 71 dBA CNEL under the no-build condition. Under design year build conditions, traffic noise levels are predicted to range from 51 to 71 dBA CNEL. As described in the Noise and Vibration Report (Jones & Stokes, 2020), predicted traffic noise levels under the design-year build condition would result in an increase of up to 3 dB compared to design-year no-build conditions. A 5 dB increase in noise levels would be perceived by the human ear to be a noticeable increase.

The highest receiver noise level in each of the model cases was found to occur at patios of Willow Oak Villas apartment units that face Bruce Road, represented by receiver R-55 in Appendix F. Locations of modeled receivers are shown in Figure 2 of Appendix F.

Predicted traffic noise levels were compared to exterior and interior maximum allowable levels from the General Plan to determine noise compatibility of the project with existing land uses. At single-family residences, exterior noise levels would have a maximum value of 63 dBA CNEL in the opening year (2024) under the build condition. Under the future year (2040) build condition exterior noise levels would be up to 65 dBA CNEL at outdoor areas of 7 single-family residences nearest to the project, located on Bruce Road and East 20th Street (see model results for receivers R-06, R-07, R-

16, R-17, R-38, R-58, and R-59 in Table C-2 of Appendix C). These levels account for the acoustical effect of privacy walls along property frontage facing Bruce Road. The modeled level of 65 dBA CNEL is equal to the City maximum allowable noise standard for residential use. As such, traffic noise levels from the project under both opening year and future year conditions would be considered compatible with single-family residences.

At multi-family residences in the Willow Oak Villa complex, noise levels would be up to 71 dBA CNEL at patios of residential units facing Bruce Road. The General Plan indicates that where it is not practical to mitigate exterior noise levels at the patios or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area. The common area at the outdoor pool (receiver R-53) is predicted to have a noise level of 55 CNEL under the future build condition, which would not exceed the noise compatibility standard for exterior noise levels at residential use. The lower noise level at the pool is due to its setback location within the complex, and acoustical shielding from surrounding buildings relative to Bruce Road and East 20th Street.

Building interior noise levels under the future build condition were predicted based on outdoor-to indoor noise reduction values for typical building components used in Department of Housing and Urban Development (HUD) guidance (2009). Interior noise levels at single-family and multi-family residences are shown in Appendix xxx of the Noise and Vibration Report (Jones & Stokes, 2020). The analysis assumes a building noise reduction factor of 30 dB, which is associated with standard framing double-hung windows, with up to 30% coverage of windows on the building structure. Based on this assumption, interior noise levels at all receiver locations are predicted have values of less than 45 dBA CNEL under both opening year and design year conditions.

Based on the above analysis, operation of the project will not expose persons to or generate noise levels in excess of standards established in the General Plan or respective noise ordinance. Therefore, this impact is considered to be **Less Than Significant** and no mitigation is required.

**Construction**
Construction equipment used during roadway reconstruction and widening would produce maximum noise levels of up to 95 dBA at a distance of 25 feet. As such, noise from individual pieces of construction equipment may potentially exceed the city limit of 83 dBA at a distance of 25 feet. Noise levels during construction are also expected to intermittently exceed the city limit of 86 dBA along the property plane of residences directly adjacent to Bruce Road. However, construction noise at a given location would be short term, as construction equipment used to build the project would progress over time along the 2-mile extent of the project corridor. Construction would be a temporary effect, ceasing once work is complete.

Project construction will temporarily increase ambient noise levels at residences near construction sites from the use of heavy equipment, which would include bulldozers, loaders, excavators, heavy trucks, and paving equipment. However, construction noise at a given location would be short term, as the building of the project would progress over time along the 2-mile length of the project corridor. Furthermore, project contractors would be required to comply with existing City noise regulations (Chapter 9.38 of the Chico Municipal Code) which limit the hours of construction to minimize construction related noise impacts.

During construction, contractors would be required to comply with city noise regulations (Chapter 9.38 of the Chico Municipal Code) that limit hours of construction and minimize construction noise levels in the surrounding community. Construction would be performed between the hours of 7 a.m. to 5 p.m., Monday through Friday.

Noise levels during construction are expected to exceed city standards on an intermittent basis. Therefore, impacts from construction are considered significant. Implementation of **Mitigation Measure M-1** would reduce this impact to a **Less Than Significant Level With Mitigation.**

**M.2. Less Than Significant Impact**. Reconstruction of the bridge would require the installation of piles at the bridge abutments. The piles are expected to be installed using CIDH method, which would use a drill rig, and would not require the use of impact or vibratory driving methods. A drill rig would produce a vibration level of less than 0.1 in/sec PPV at a distance of 25 feet. The residence nearest to

the bridge is about 150 feet away. As such, the installation of piles is not expected to be a significant source of vibration.

Operation of construction equipment may potentially result in perceptible levels of ground-borne vibration in the immediate vicinity of residences and other sensitive land uses during construction of the road. In general vibration at noticeable levels is highly localized around the source of vibration. Vibration-generating equipment that would be operated along the project alignment includes compactors, rollers, bulldozers, and heavy trucks. These types of equipment typically produce peak particle velocity vibration levels of less than 0.10 inches per second at a distance of 25 feet, which may intermittently be noticeable inside of buildings, but may only occur briefly during a period of time when equipment is operated near structures.

Use of heavy equipment during construction of the project would be temporary and would cease once construction is complete. The types of equipment scheduled for use in the work areas along Bruce Road would produce a level of vibration that is not expected to result in exceedance of the Caltrans guidelines for damage and annoyance. Rubber-tired vehicles are not a significant source of ground-borne vibration and operation of the project is not expected to generate noticeable levels of vibration. Therefore, this impact would be **Less Than Significant**.

**M.3. No Impact**. The site is not located within the Airport Influence Area of the Chico Municipal Airport. The Chico Municipal Airport is approximately 3 miles north of the project site. The project site is not located in an airport land use plan area and would not change noise related to airport uses. The private Butte Creek Hog Ranch airstrip is located outside the city limits approximately 1.75 miles south of the project site. The airstrip is not listed in Butte County Airport Compatibility Land Use Planning documents. Based on a visual survey it is assumed that the airstrip is only used occasionally for private use. The project would not change noise related to airport uses. There would be N**o Impact.**

**MITIGATION**:

**Mitigation Measure M.1. (Noise)**: The City shall require all construction contractors to employ best noise control practices to minimize construction noise levels at nearby residences. The noise control shall include, at a minimum, the following best practices.

- Stationary equipment (e.g., generators, compressors, cement mixers, idling trucks) shall be located as far as possible from noise-sensitive land uses.
- Construction equipment powered by gasoline or diesel engines shall be required to have sound control devices that are at least as effective as those originally provided by the manufacturer; all equipment shall be operated and maintained to minimize noise generation.
- Excessive noise shall be prevented by shutting down idle vehicles or equipment.
- Noise-reducing enclosures shall be used around noise-generating equipment.
- Adjacent residents shall be notified in advance of construction work.

*MITIGATION MONITORING M.1.:* Public Works staff will verify that the above wording is included on construction plans.

| **N. Population and Housing** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | | | | X |
| 2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | | | | X |

**DISCUSSION:**

**N.1.-N.2. No Impact.** The project is being developed in repose to the project growth in regional traffic. It is not expected to directly or indirectly trigger new home construction that has not already been identified in the City's General Plan. The project implements General Plan goals and policies which strive to enhance community connectivity and improve public safety and access. The project is also identified in the Butte County Regional Transportation Plan. The project will not displace any people or housing. There will be no conflicts with land use plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The Project impacts to population/housing are therefore considered to have **No Impact.**

**MITIGATION**: None Required.

| **O. Public Services** 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? | | | X | |
| Police protection? | | | X | |
| Schools? | | | X | |
| Parks? | | | X | |
| Other public facilities? | | | X | |

**DISCUSSION:**

**O.1.-5. Less Than Significant Impact**. The proposed project would not construct dwelling units, buildings, businesses, or other similar facilities that would result in an increased human population in the project area. There would be no long-term demands on fire or police protection services generated by the proposed project. Similarly, there would be no increased demands on school services or parks.

The proposed project would not cause any permanent closures to the roadway, nor block access to private property. Temporary average delays are not anticipated to exceed 5-8 minutes. The construction is expected to take approximately twelve months over two construction seasons weather and conditions permitting. Temporary road delays and closures during construction may affect traffic patterns near the construction site and potentially affect fire and police response times for multiple apparatus events; however, any such impacts would be minor and not significantly affect long-term service ratios, response times, or other performance objectives for public services. Project proponents would notify local emergency service providers of construction activities and would ensure coordination with local providers to establish alternative routes and appropriate signage. No changes in fire protection or police protection services are proposed as part of this project. The proposed project would not add to the area's population or increase demands on police or fire services. The effects of the temporary road closure would not cause significant environmental impacts as it relates to police and fire service. Therefore, relative to the provision of police and fire service, the proposed project would generate **Less Than Significant Impacts**.

**MITIGATION**: None Required.

| **P. Recreation** | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. 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? | | | | X |
| 2. 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? | | | | X |

**DISCUSSION:**

**P.1.-2. No Impact.** The project does not propose dwelling units, businesses or other structures that might increase the area's human population. The project site does not include existing recreational facilities. Similarly, the proposed project would not construct recreational facilities.

The proposed project would not generate additional demands on parks and recreational facilities. The proposed project does not include the development of recreational facilities or other structures that would necessitate the development or modification of any recreational facilities. Relative to recreation, the proposed project would result in **No Impact.**

**MITIGATION**: None Required.

| **Q. Transportation**<br>Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | | | X | |
| 2. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | | | X | |
| 3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | X | |
| 4. Result in inadequate emergency access? | | | X | |

The proposed project consists of the widening of Bruce Road from two lanes to four lanes from Skyway to State Route (SR) 32 to serve anticipated regional travel demands. This project implements the Chico 2030 General Plan which identifies this corridor a four-lane arterial facility. The signalized intersections on Bruce Road will also be modified to include additional turn lanes and traffic signal modifications associated with the additional travel lanes. Bicycle, pedestrian, and transit facilities will be added to improve multi-modal connectivity throughout the corridor, consistent with Complete Streets policies identified in the Chico General Plan. The widening of Bruce Road has been planned and anticipated for many years based on needs identified during long-term regional planning efforts. Policies identified in the City of Chico 2030 General Plan and the Butte County Association of Governments (BCAG) Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS) encourage enhancements for safe and efficient travel and optimum productivity. The Bruce Road Widening (Skyway to SR32) project is listed in the adopted 2016 RTP/SCS as a Funded Project (Table 6-6) and is understood to be a Funded Project in the 2020 RTP/SCS update. The need for the widening was identified through regional travel demand modelling and traffic analysis as part of the RTP/SCS development and the project need is again confirmed in this Technical Study. Further, based on the adjacent land use designations and associated transportation facilities (four lane arterial) identified along Bruce Road in the General Plan, the widening of Bruce Road was assumed as part of the both the adjoining Meriam Park and Stonegate development projects. The following information is derived from the report titled "Traffic /Transportation Technical Study for the Bruce Widening Project" prepared by Headway Transportation.

**Existing Conditions**
The study intersections currently operate at acceptable levels of service under Existing No Build Conditions and they would operate acceptably with the widening project (under Existing Build Conditions).

**Opening Day Conditions**
The study intersections are expected to operate at acceptable levels of service under the "No Build" and "Build" scenarios at Opening Day Conditions (2024). The delay at the study intersections is expected to decrease with the project consistent with the project purpose and goals.

**2040 Conditions**
Under 2040 No Build Conditions, the study intersections are expected to degrade to unacceptable LOS F during the AM and PM peak hours. With the widening project, the study intersections are shown to operate at acceptable levels of service under 2040 Build Conditions during the AM and PM peak hours. This long-term operational benefit is the core purpose if the widening project.

**VMT**
Vehicle Miles Travelled (VMT) was estimated specifically for the Bruce Road corridor area to describe how VMT would vary under the various scenarios and future year study periods. The estimated daily VMT for Existing No Build Conditions is 21,801 per day. The estimated daily VMT for Existing Build Conditions is 22,663 per day, which includes 862 project induced VMT per day. VMT can be expected to increase slightly with the project in the near-term.

The estimated daily VMT for Opening Day No Build Conditions is 28,660 per day. The estimated daily VMT for Opening Day Build Conditions is 29,522 per day, which includes 862 project induced VMT per day. VMT can be expected to increase slightly with the project in the Opening Day timeframe.

Under 2040 No Build Conditions, the 2040 daily traffic volumes on Bruce Road are expected to exceed the capacity of a two-lane arterial roadway. Traffic volumes in excess of the two-lane capacity would then divert to alternate routes with longer trip lengths in search of less delay and congestion. Most of the diverted traffic can be assumed to utilize Forest Avenue and Notre Dame Boulevard which are adjacent parallel routes. The estimated daily VMT for 2040 No Build Conditions is approximately 71,961 per day. The estimated daily VMT for 2040 Build Conditions is 57,027 per day, which includes 862 project induced VMT per day.

VMT can be expected to ultimately decrease as a result of the widening project. Without the widening, some drivers would increase their trip length to avoid congestion on Bruce Road and thereby increase the total amount of travel in the study area. The increased travel distance of trips would more than offset the anticipated induced travel demand affects; therefore, the project is expected to reduce VMT compared to the "No Build" scenario.

**DISCUSSION:**

**Q.1. Less Than Significant Impact** The widening of Bruce Road has been planned and anticipated for many years based on needs identified during long-term regional planning efforts. The following policy documents define the purpose and need for widening improvements on Bruce Road:

**2030 General Plan (City of Chico)**

Policy CIRC-1.1 (Transportation Improvements) – Safely and efficiently accommodate traffic generated by development and redevelopment associated with build-out of the General Plan Land Use Diagram.

Action CIRC-1.1 (Roadway Network) – Enhance existing roadways and intersection and develop the roadway system shown in Figure CIRC-1 over the life of the General Plan as needed to accommodate development.

Policy CIRC-1.4 (Level of Service Standards) – Maintain LOS D or better for roadways and intersections at the peak PM period (noting some exceptions which permit LOS E).

**2016 and 2020 Regional Transportation Plan & Sustainable Communities Strategy (BCAG)**

The Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) specifies the policies, projects, and programs necessary over a 20+ year period to maintain, manage, and improve the region's transportation system. The Butte County Association of Governments (BCAG) is in the process of updating the adopted 2016 RTP/SCS to create the 2020 RTP/SCS. Programmatic level Environmental Impact Reports are prepared with each RTP/SCS update. The 2020 Draft Policy Element includes for following goals and objectives:

1. Policy on Highways, Streets, and Roads
   - Goal: A safe and efficient regional road system that accommodates the demand for movement of people and goods.
     - Objective 1.2: Identify and prioritize improvements to the regional roadway system.

13. Policy on Quality of Travel and Livability
   - Mobility Goal: The transportation system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.
     - Objective 13.1: Assist in efforts which enhance mobility for the region. The system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.

The Bruce Road Widening (Skyway to SR32) project is listed in the adopted 2016 RTP/SCS as a Funded Project (Table 6-6) and is understood to be a Funded Project in the 2020 RTP/SCS update. The need for

the widening was identified through regional travel demand modelling and traffic analysis as part of the RTP/SCS development. Therefore, this impact is considered to be **Less Than Significant.**

**Q.2. Less Than Significant Impact**. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. The Vehicle Miles Travelled (VMT) analysis conducted for the proposed project is based on local route analysis specific to Bruce Road and the parallel routes to which traffic would likely divert. VMT was calculated for the six analysis scenarios and includes the VMT generated by existing and forecasted traffic on the roadway, as well as the potential for induced demand VMT generated by the additional lanes on Bruce Road.

**Existing No Build Conditions**
The existing daily traffic volumes do not exceed the capacity of a two-lane arterial roadway ("No Build" conditions). Daily VMT was calculated by multiplying the daily traffic volume on each segment by the length of the segment. The Existing No Build Conditions VMT estimate is approximately 21,801 vehicle miles per day. Detailed calculations are provided in Appendix G**Error! Reference source not found.**.

**Existing Build Conditions**
The existing traffic volumes on Bruce Road do not exceed the capacity of a four-lane arterial roadway ("Build" conditions). Existing Build Conditions VMT would be the same as the Existing No Build Conditions VMT (daily traffic volume multiplied by the length of the roadway) plus the addition of the Project Induced VMT. Using the methodology described above, the Existing Build Conditions VMT is expected to be approximately 22,663 per day (21,801 plus 862 project induced VMT per day). Detailed calculations are provided in Appendix G.

**Opening Day No Build Conditions**
The Opening Day daily traffic volumes are not expected to exceed the capacity of a two-lane arterial roadway ("No Build" conditions). Daily VMT was calculated by multiplying the daily traffic volume on each segment by the length of the segment. The Opening Day No Build Conditions VMT estimate is approximately 28,660 vehicle miles per day. Detailed calculations are provided in Appendix G**Error! Reference source not found.**.

**Opening Day Build Conditions**
The Opening Day traffic volumes on Bruce Road are not expected to exceed the capacity of a four-lane arterial roadway ("Build" conditions). Opening Day Build Conditions VMT would be the same as the Opening Day No Build Conditions VMT (daily traffic volume multiplied by the length of the roadway) plus the addition of the Project Induced VMT. Using the methodology described above, the Opening Day Build Conditions VMT is expected to be approximately 29,522 per day (28,660 plus 862 project induced VMT per day). Detailed calculations are provided in Appendix G**Error! Reference source not found.**.

**2040 No Build Conditions**
The 2040 traffic volume forecasts are expected to exceed the capacity of a two-lane arterial roadway (the forecast volume on the highest segment is 31,040 vehicles per day (vpd), approximately 10,470 vpd more than the two-lane capacity of Bruce Road). It was assumed that the 10,470 vpd traffic would divert to the two closest parallel routes – Forest Avenue and Notre Dame Boulevard (which is planned to connect SR 32 to Skyway in advance of 2040). Forest Avenue is currently a four-lane arterial roadway, and Notre Dame Boulevard is a two-lane arterial roadway. Forest Avenue is likely a more desirable route with four lanes and a 35-mph speed limit, compared to Notre Dame Boulevard that has two lanes and a 25-mph speed limit. Therefore, traffic was assumed to divert to Forest Avenue first, then to Notre Dame Boulevard if necessary. Based on estimated 2040 forecasts for Forest Avenue (calculated using the existing volume plus the growth in the model between the base year and 2040), the remaining capacity available on Forest Avenue would be approximately 6,380 vpd. The remaining 4,090 vpd (10,470 vpd minus 6,380 vpd) were assumed to divert to Notre Dame Boulevard. VMT for the study corridor was calculated by multiplying each route volume by the length of the route (detailed calculations are provided in Appendix G**Error! Reference source not found.**. The 2040 No Build Conditions VMT estimate is 71,961 vehicle miles per day.

**2040 Build Conditions**
The 2040 traffic volume forecasts are not expected to exceed the capacity of a four-lane arterial roadway ("Build" conditions). No diversion would occur in this scenario. VMT was calculated by

multiplying the daily volume on each segment by the length of the segment plus the addition of the Project Induced VMT. Using the methodology described above, the 2040 Build Conditions VMT estimate is approximately 57,027 per day (56,165 plus 862 project induced VMT per day). Detailed calculations are provided in Appendix G**Error! Reference source not found.**. The estimated VMT for the "Build" scenario is approximately 14,938 less vehicle miles per day than the "No Build" scenario.

The project has the potential to reduce VMT by constructing improvements on the desired travel route, thereby avoiding diversion of trips to other longer routes. This is considered a **Less Than Significant Impact.**

**Q.3. Less Than Significant Impact.**
The Bruce Road corridor is essentially flat with minimal horizontal or vertical curves. The proposed project involves the reconstruction and widening of an approximately 2-mile segment of Bruce Road from SR 32 to Skyway utilizing roller-compacted concrete pavement. The proposed Complete Streets improvements include widening Bruce Road from an existing 2-lane arterial roadway to a 4-lane arterial roadway, and replacement of the existing two-lane, Caltrans identified "functionally obsolete" Bruce Road bridge over Little Chico Creek with a new four lane bridge structure. The new bridge will accommodate four lanes of traffic, a center median, pedestrian/bicycle facilities consisting of a Class I bike path on the west side of Bruce Road, and a sidewalk on the east side. The ultimate roadway design includes construction of the following: a 14-foot landscaped center median; roadway lighting; 5-foot bike lanes with 2-foot buffered striping on both east and west sides of Bruce Road; dedicated left turn lanes at various intersections; concrete curb, gutter, and curb ramps; and a 12-foot-wide concrete multi-use path on the west side of Bruce Road. Therefore, the project does not contain design features that would pose a hazard; the impact is **Less Than Significant**.

**Q.4. Less Than Significant Impact.** Bruce Road will remain open during construction; however, the project will temporarily impact traffic patterns with on-site traffic controls (e.g., flagging, pilot car, etc.) and episodic, temporary single-lane traffic closures. This could temporarily affect emergency access due to occasional increased traffic congestion. California MUTCD compliant standard traffic control measures will be in place during the construction to ensure public safety and minimize delays. The proposed project would neither cause any permanent closures to the roadway, nor block access to private property. Temporary average delays are not anticipated to exceed 5-8 minutes. The construction is expected to take approximately 12 months over two construction seasons, weather and conditions permitting. Upon completion of the project emergency access will be improved over pre-project conditions both for vehicles traveling on Bruce Road, as well as access to neighboring properties. Therefore, this impact is considered to be **Less Than Significant.**

**MITIGATION**: None Required.

| **R. Tribal Cultural Resources** | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | | | | |
| a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | | X | | |
| 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. | | X | | |

**DISCUSSION:**

The project is not anticipated to cause a substantial adverse change in the significance of a tribal cultural resource. Bruce Road is classified Medium Sensitivity approximately between 20th Street and Skyway and High Sensitivity between SR 32 and 20th Street on the Archaeological Sensitivity Areas Map in the Chico General Plan. The project site was located within the traditional boundaries of the Konkow, or Valley Maidu tribe. The Konkow inhabited a large geographic area that encompassed the Sacramento River and east to the Sierra/Cascade canyons and foothills east of Chico.

**R.1.a. – 1.b. Less Than Significant with Mitigation Incorporated.**

A Cultural Resources Inventory Report of the project site was conducted by ICF (**Error! Reference source not found.**). The investigation consisted of an on-site records search and document review at the NEIC. Maps and records on file at this facility were consulted, along with the National Register of Historic Places Listed Properties and Determined Eligible Properties, the California Register of Historical Places, the California Points of Historical Interest, the California Inventory of Historical Resources, the California Landmarks Registry, and the Directory of Properties in the Historic Property Data File.

One historic resource was determined to be eligible for the National Register of Historic Places (NRHP) and is listed in the California Register of Historical Resources (CRHR). The eligible resource is the Humboldt Wagon Road which intersects the project area near the northern portion of the project. No indications of the Humboldt Wagon Road (CA-BUT-0892H) were identified in the project. The surveyor inspected the ground surface in the vicinity of Humboldt Road for any indications of wagon wheel ruts, indentations in the soil, or historic artifacts that may date to the use of the wagon road. No cultural evidence was found, and it is assumed that any indications of the Humboldt Wagon Road have since been destroyed by construction of the modern paved Humboldt Road.

Another resource referred to as the Bruce Ranch Stone Fence is located within the project area. This stone fence is located adjacent to the west side of Bruce Road. The Bruce Ranch Stone Fence is not eligible for listing on the NRHP (ICF, 2020). Neither of these resources are considered tribal cultural resources.

ICF submitted a Sacred Lands File and Native American Contacts List Request to the Native American Heritage Commission (NAHC). NAHC responded to the request on April 3, 2020 indicating that NAHC files contain no listing for sacred lands in the vicinity of the proposed project site. On April 24, 2020, letters containing a Project description, a map location, and a request for information were sent to five Tribal contacts. Mechoopda Tribe responded, mentioning that they were concerned with portions of the project and that there were areas sensitive to the Tribe. These concerns were discussed and resolved, and no further inquiries made. Native American correspondence is included in Appendix D**Error! Reference source not found.**; however, confidential information has been omitted from this public document.

The City of Chico and consulting archaeologists from ICF sent out letters to interested tribes regarding the project and inviting consultation; however, no tribe responded requesting consultation on the project.

The extensive land modifications within the APE and surrounding areas makes the likelihood of intact cultural resources within the APE low. In the event that resources are inadvertently discovered, Implementation of Mitigation R.1 would reduce impacts to **Less than Significant with Mitigation Incorporated.**

**MITIGATION**:

**MITIGATION R.1. (Tribal Cultural Resources):** If during ground disturbing activities, any potentially paleontological, prehistoric, protohistoric, and/or historic cultural resources or tribal cultural resources are encountered, the supervising contractor shall cease all work within 25 feet of the find (100 feet for human remains) and notify the City. A professional archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology and being familiar with the archaeological record of Butte County, shall be retained to evaluate the significance of the find. City staff shall notify all local tribes on the consultation list maintained by the State of California Native American Heritage Commission, to provide local tribes the opportunity to monitor evaluation of the site. If human remains are uncovered, the project team shall notify the Butte County Coroner pursuant to Section 7050.5 of California's Health and Safety Code. Site work shall not resume until the archaeologist conducts sufficient research, testing and analysis of the archaeological evidence to make a determination that the resource is either not cultural in origin or not potentially significant. If a potentially significant resource is encountered, the archaeologist shall prepare a mitigation plan for review and approval by the City, including recommendations for total data recovery, Tribal monitoring, disposition protocol, or avoidance, if applicable. All measures determined by the City to be appropriate shall be implemented pursuant to the terms of the archaeologist's report. The preceding requirement shall be incorporated into construction contracts and documents to ensure contractor knowledge and responsibility for the proper implementation.

*MITIGATION MONITORING R.1.:* Public Works staff will verify that the above wording is included on construction plans. Should paleontological, prehistoric, protohistoric, and/or historic cultural resources or tribal cultural resources be encountered, the supervising contractor shall be responsible for reporting any such findings to Public Works staff, and contacting a professional archaeologist or paleontologist in consultation with Public Works staff, to evaluate the find.

| **S. Utilities and Service Systems** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | | X | | |
| 2. Have sufficient water supplies available to serve the project and reasonably foreseeable | | | X | |

| **S. Utilities and Service Systems** Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| future development during normal, dry and multiple dry years? | | | | |
| 3. 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? | | | X | |
| 4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | | | X | |
| 5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | | | X | |

**DISCUSSION:**

**S.1. Less Than Significant With Mitigation**
The proposed project would not require wastewater treatment, new electric power, natural gas or telecommunications facilities. The project does require the development of a stormwater drainage system, including surface and subsurface drainage infrastructure to capture and direct stormwater runoff from Bruce Road to existing storm drain systems on Raley Boulevard and Fremont Street. The installation and connection of the stormwater drainage system is proposed through a drainage easement located on Chico Unified School District (CUSD) property. The environmental resources within the CUSD property have been fully permitted and mitigated through a separate CEQA and State and federal environmental review (Canyon View High School Program Environmental Impact Report – State Clearinghouse # 2001102057). There may be indirect effects to state and federally listed species in the vernal pool habitats north of the CUSD property as a result of the construction and installation of the stormwater infrastructure. This is a potentially significant effect that is reduced to a **Less Than Significant Level With Mitigation** measures described in the Biological Resources section of this document.

**S.2.-S.3. Less Than Significant Impact**.
The proposed project will include landscaped median and shoulder areas that will require irrigation water to be used; however, the amount of water required to sustain the plantings will be minimal. California Water Service Company (Cal Water) is the local water provider in the Chico area with the sole source of water for the Chico District, including the project site. Cal Water relies entirely on groundwater pumped from the Sacramento Valley Basin, which is characterized as having abundant supplies and having demonstrated a historical ability for its groundwater levels to recover quickly after drought events. The proposed project will not involve the need for wastewater treatment or the expansion of wastewater treatment facilities. This is considered a **Less Than Significant Impact.**

**S.4.-S.5. Less Than Significant Impact**. The project will not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. During construction, a limited amount of construction waste would be generated. Waste would only be sent to permitted landfill facilities with adequate capacity to accept construction waste. The project would not create a long-term source of solid waste needing disposal. Disposal and recycling of materials generated by the construction of the new road and bridge will be handled and disposed of in accordance with Federal, State, and local requirements. This impact would be **Less Than Significant**.

**Mitigation Required:** Mitigation Measure D.8.

| **T. Wildfire**<br>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Substantially impair an adopted emergency response plan or emergency evacuation plan? | | | | X |
| 2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | | | | X |
| 3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | | | | X |
| 4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | | | | X |

**DISCUSSION:**

**T.1.-T.4. No Impact**. The project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones; therefore, it will not substantially impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risks, require the installation or maintenance of associated infrastructure, or expose people or structures to significant risks. The Bruce Road Project site is identified as an area outside of Cal Fire's is 'Very High Fire Hazard Severity Zone' (i.e., it is a non-VHFHSZ) as identified by Cal Fire (see the following: https://databasin.org/datasets/fbb8a20def844e168aeb7beb1a7e74bc. The project site is located in a Local Responsibility Area (LRA) pursuant to the Fire Hazard Severity Zone and is served by the City of Chico Fire Department as shown in the SRA map last modified by Cal Fire on June 20, 2019. The proposed project would have **No Impact** on wildfire.

**MITIGATION**: None Required.

| **U. MANDATORY FINDINGS OF SIGNIFICANCE** | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| 1. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | | | X | |

| | |
|---|---|
| 2. 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)? | X |
| 3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | X |

**DISCUSSION:**

**U. 1-3. Less Than Significant Impact**. The project does not have the potential to significantly degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. Based on the preceding environmental analysis, the application of existing regulations and incorporation of identified mitigation measures will ensure that all potentially significant environmental impacts associated with the project, including those related to aesthetics, air quality, biological resources, geology/soils, hazards and hazardous materials, cultural resources, tribal cultural resources and hydrology would be minimized or avoided, and the project will not result in direct or indirect adverse effects on human beings or the environment, nor result in significant cumulative impacts. Cumulative impacts related to the build-out of the project area were considered and analyzed in the City's 2030 General Plan. Therefore, with the incorporation of the identified mitigation measures, the project will result in a **Less Than Significant Impact.**

**MITIGATION**: None Required.

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