Appendix A

Notice of Preparation/ State Route 32 Widening Project: State Route 99 to Yosemite Drive Initial Study

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NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT
CHICO PLANNING SERVICES DEPARTMENT

Based upon the analysis and findings contained within the attached Initial Study, a focused Environmental Impact Report is proposed by the City of Chico Planning Services Department for the following project:

PROJECT NAME AND NUMBER: State Route 32 Widening Project (City of Chico Capital Project Number 15010; ER 4-03).

APPLICANT'S NAME: City of Chico, P.O. Box 3420, Chico, CA. 95927

PROJECT LOCATION: Approximately 2 miles east of downtown Chico along State Route 32 from State Route 99 east to just past Yosemite Drive.

PROJECT DESCRIPTION: The City is proposing to widen and improve approximately 2.6 miles of State Route 32 between State Route 99 and Yosemite Drive to accommodate increased traffic volumes that are predicted to occur with or without the project.

State Route 32 is a Caltrans owned and maintained facility. The City intends to widen and improve State Route 32 using only local funds; no state or federal funds are anticipated. At the completion of the project, Caltrans would continue to own and maintain the facility.

Intersection improvements are proposed at the on- and off-ramps at State Route 99, Fir Street, Forest Avenue, El Monte Avenue, Bruce Road and Yosemite Drive. The project includes the design and possible construction of the south leg of Yosemite Drive. The project also includes modifying Fir Street between 8th and 9th to a one-way, northbound movement only.

The project would result in three lanes in both directions from State Route 99 through Fir Street and two lanes in both directions from Fir Street to Yosemite Drive. The project would require construction of a new bridge over Dead Horse Slough and extension or replacement of the existing South Fork Dead Horse Slough culvert just east of the Bruce Road intersection.

Preliminary design indicates the possible need for future crossings of State Route 32 in the project area to accommodate various utilities such as water, wastewater, drainage, electrical, communications, telephone, gas, etc. Therefore, the project includes the construction of utility crossings at the intersections along State Route 32 on an 'as-needed' basis as determined in coordination with the various service providers. In addition, a second sewer crossing will be

constructed adjacent to the existing sewer line east of El Monte Avenue. These utility crossings would 'stub out' within the project limits on the north and south sides of State Route 32 to allow future connection, if deemed necessary by the City or County, to various services. The project does not include the installation of any utilities outside the State Route 32 right-of-way project limits; future projects would require separate environmental review.

The attached Initial Study indicates that, in light of the whole record before the agency, the project has the potential to have a significant effect on the environment in the areas of aesthetics and noise; therefore, a focused EIR will be prepared on these issues. Based on the information presented in the attached Initial Study, no analysis of other issue areas is proposed unless public and agency review identifies the need for more analysis.

PROJECT APPLICANT'S INCORPORATION OF MITIGATION INTO THE PROPOSED PROJECT:

I have reviewed the Initial Study for the State Route 32 Widening Project and any mitigation measures identified herein. I hereby agree to modify the project to include and incorporate all mitigation set forth in this document.

Bob Greenlaw — 2/6/07

Project Applicant
Bob Greenlaw
Capital Project Services Department — Date

Kim C. Erickson — 2/6/07

Prepared by: — Date

[signature] — 2/6/2007

Reviewed by:
Planning Services Department — Date

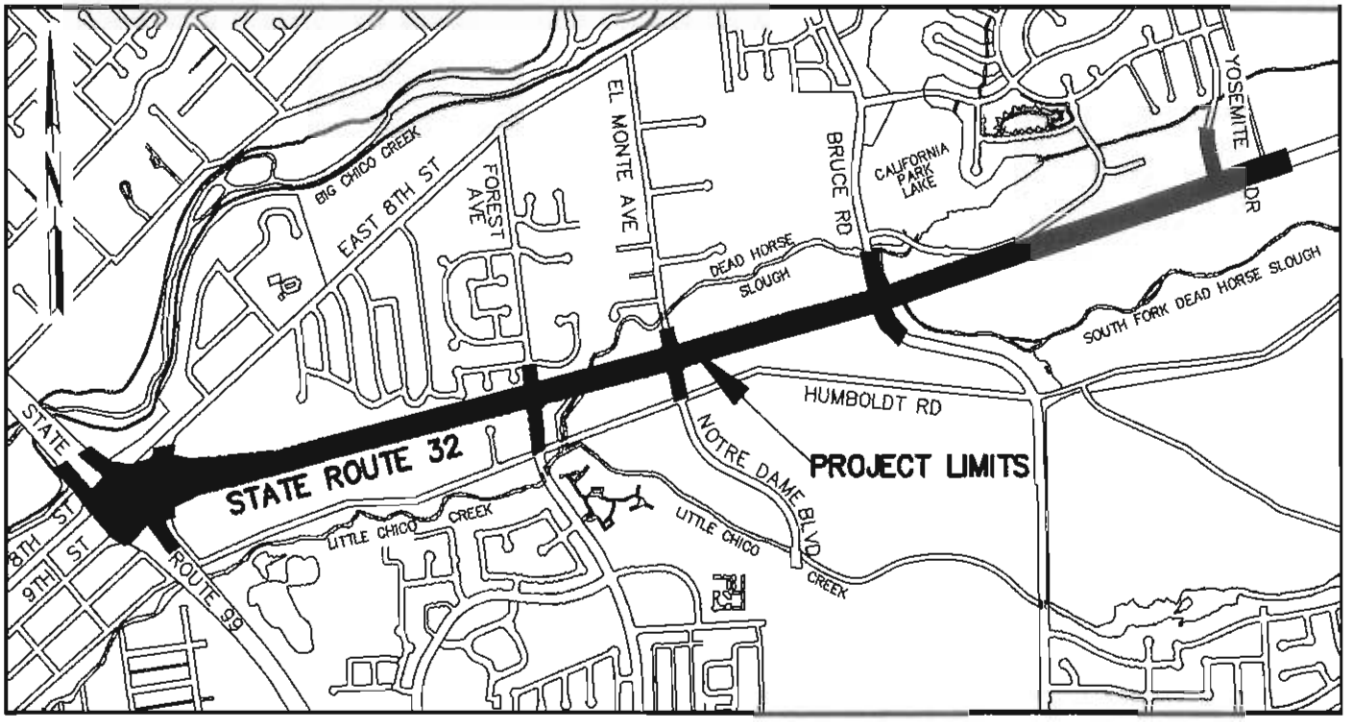
[signature] — 2/6/2007

Adopted by:
Stephen Peterson, Planning Services Director — Date

State Route 32 Widening Project: State Route 99 to Yosemite Drive

City of Chico, Butte County, California

Post Miles 10.1 to 12.7
03-But-32, EA 03-1E4901



Initial Study

CITY OF CHICO
INC. 1872

Lead Agency:
City of Chico

February 2007

INITIAL STUDY

State Route 32 Widening Project:
State Route 99 to Yosemite Drive
Post Miles 10.1 to 12.7

03-But-32, EA 03-1E4901

Lead Agency:

City of Chico
Planning Services Department
5th and Main Streets
P.O. Box 3420
Chico, CA 95927
Contact: Stephen Peterson, Planning Services Director
530/879-6500 or speterso@ci.chico.ca.us

February 2007

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List of Acronyms

AC	asphalt concrete
ADT	average daily traffic
AQMD	air quality management district
ARB	California Air Resources Board
ASR	Archaeological Survey Report
BCM	Butte County meadowfoam
BMP	best management practice
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Chico
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DBH	diameter at breast height
DFG	California Department of Fish and Game
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESL	environmental study limit
ETW	edge of traveled way
FHWA	Federal Highway Administration
FR	Federal Register
GGS	giant garter snake
HPSR	Historic Property Survey Report
LOS	level of service
MBGR	metal beam guard rail
MEA	Master Environmental Assessment
mgd	million gallons per day
MSAT	mobile source air toxics

NAC	noise abatement criterion or criteria
NAHC	Native American Heritage Commission
NB	northbound
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation of an EIR
NOX	nitrogen oxide
NO2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NSVAB	Northern Sacramento Valley Air Basin
O3	ozone
OGAC	open graded asphalt concrete
OHP	Office of Historic Preservation
PCB	polychlorinated biphenyls
PCC	Portland cement concrete
PCE	perchloroethylene
PM10	particulate matter 10 microns or smaller in diameter
PM2.5	particulate matter 2.5 microns or smaller in diameter
ppm	parts per million
PSR / PR	Project Study Report / Project Report
Regional Board	Regional Water Quality Control Board
RMA	resource management area
ROG	reactive organic gases
RTP	Regional Transportation Plan
SB	southbound
SIP	State Implementation Plan
SO2	sulfur dioxide
SR	State Route
SWMP	Storm Water Management Plan
SWPPP	storm water pollution prevention plan
TASAS	Traffic Accident Surveillance and Analysis System
TMP	Transportation Management Plan
TNAP	Traffic Noise Analysis Protocol
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
WPCP	water pollution control plan

CHAPTER 1 PROJECT OVERVIEW AND BACKGROUND

INITIAL STUDY

This Initial Study has been prepared pursuant to Title 14, Section 15070 of the California Code of Regulations. This document has been prepared by the City of Chico (City) acting as state lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code Section 21069 and Guidelines Sections 15096 and 15381).

ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following chapters:

CHAPTER 1 – PROJECT OVERVIEW AND BACKGROUND: Provides summary background information about the project name, location, sponsor, and when the Initial Study was completed.

CHAPTER 2 – PROJECT DESCRIPTION: Provides a detailed description of the proposed project.

CHAPTER 3 – ENVIRONMENTAL CHECKLIST AND DISCUSSION: Contains the Environmental Checklist together with a discussion of the checklist questions. The Environmental Checklist is used to determine the following for the proposed project:

- "No Impact," identifying areas in which the project would have no impact.
- "Less Than Significant Impact," which identifies impacts that are considered less than significant and do not require the implementation of mitigation measures.
- "Less Than Significant Impact with Mitigation," which identifies impacts that could be mitigated with incorporation of mitigation measures which the City has agreed to implement as part of the proposed project.
- "Potentially Significant Impact," which identifies impacts that need additional study and require analysis in an environmental impact report (EIR).

The Environmental Checklist concludes with the determination as to whether additional environmental documentation is required.

CHAPTER 4 – LIST OF PREPARERS: Identifies the individuals who contributed to the environmental document.

CHAPTER 5 – REFERENCES CITED: Identifies the information sources used in preparing this environmental document

Technical appendices are found at the end of the report.

BACKGROUND

Project Name: State Route 32 Widening Project: State Route 99 to Yosemite Drive

Project Location: City of Chico, Butte County

Project Sponsor and Contact Person:

Bob Greenlaw, Project Manager
City of Chico Capital Project Services Department
411 Main Street
P.O. Box 3420
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530-879-6930

Environmental Contact Person:

Steve Peterson, Planning Services Director
City of Chico Planning Services Department
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speterso@ci.chico.ca.us
530-879-6500

PROJECT OVERVIEW

State Route 32 is a Caltrans owned and maintained facility. The City intends to widen and improve approximately 2.6 miles of State Route 32 using only local funds; no state or federal funds are anticipated. At the completion of the project, Caltrans would continue to own and maintain the facility.

The project is intended to accommodate increased traffic volumes that will occur because of the approved and proposed development within the State Route 32 corridor.

In summary, the project includes the following elements to improve traffic operations and circulation:

- Widen State Route 32 from two to four lanes,
- Modify the on- and off-ramp terminal intersections and the couplet at the State Route 99/State Route 32 interchange,
- Modify Fir Street to a three-lane, one-way northbound only street between 8th Street (westbound State Route 32) and 9th Street (eastbound State Route 32) and signalize both intersections of Fir Street,
- Modify the existing signalized intersections at Forest Avenue, El Monte Avenue, and Bruce Road to provide turn lanes,
- Install a signal and possibly construct the fourth (south) leg of the Yosemite Drive/State Route 32 intersection as required for the Oak Valley subdivision, and
- Construct a new bridge next to the existing bridge over Dead Horse Slough east of Forest Avenue, and extend or replace the existing South Fork Dead Horse Slough culvert just east of the Bruce Road intersection.

The proposed project would provide additional capacity needed to accommodate traffic generated by approved and planned growth in the City of Chico along the State Route 32 corridor. The project is needed because growth in the area will increase congestion due to inadequate capacity on State Route 32 and because of existing operational and safety concerns at the State Route 99/State Route 32 Interchange.

PURPOSE OF THIS DOCUMENT

The purpose of this Initial Study is to address specific impacts, which may occur due to the proposed project. This Initial Study is a public document that assesses the environmental effects of the State Route 32 Widening Project, as required by the California Environmental Quality Act (CEQA) and in compliance with the State CEQA Guidelines (Title 14 California Code of Regulations), which requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

An Initial Study is an analysis prepared by the lead agency (City of Chico), in consultation with other relevant agencies, to determine whether a mitigated negative declaration is needed or an environmental impact report (EIR) should be prepared. If an Initial Study concludes that all of the impacts of the project are either less than significant or can be reduced to a less-than-significant level with mitigation that is either incorporated into the project or agreed to by the project sponsor (City of Chico), the lead

agency can prepare a mitigated negative declaration. If, after preparing and issuing the Initial Study for public review, the lead agency determines that there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, it must prepare an EIR.

In reviewing the site specific information provided for the proposed project, the City has analyzed the potential environmental impacts created by this project and has concluded that a focused EIR should be prepared to address aesthetics and noise.

This environmental document describes the proposed project, the existing environmental setting before implementation of the project, and the potential environmental impacts of the proposed project. Mitigation measures are identified to avoid, reduce, and minimize the environmental impacts of the project. All of the mitigation measures in this document have been reviewed and approved by the City of Chico and must be implemented as part of the project.

The City of Chico is soliciting views of interested persons and agencies on the content of the information presented in this environmental document. Due to the time limits mandated by state law, your response must be sent at the earliest possible date, but no later than the 30 days after receipt of this document and publication/posting of the Notice of Availability of the Initial Study.

Please mail or email written comments to:

Holly Keeler
City of Chico Planning Services Department
411 Main Street
P.O. Box 3420
Chico, CA 95927
hkeeler@ci.chico.ca.us
530-879-6500

CHAPTER 2 PROJECT DESCRIPTION

PROJECT LOCATION

The proposed project is located on State Route 32 between State Route 99 to the west and Yosemite Drive to the east in the City of Chico, Butte County (Figures 1 and 2; all figures are located at the end of this chapter). State Route 32 crosses State Route 99 and is a two- and four-lane, east-west highway providing connections between Interstate 5 to the west with Chico and rural communities to the north and east of Chico.

Through the project area, State Route 32 transitions from west to east as a one-way city couplet (East 8th Street and East 9th Street) to a four-lane State highway to a two-lane State highway west of Forest Avenue and extending past Yosemite Drive. The Caltrans Transportation Concept Report for State Route 32 (Caltrans, March 1997) identifies the ultimate facility within the project limits as a six-lane Conventional Highway with Access Control (Segment 8, from Fir Street to Yosemite Drive). Caltrans and the City are working together to change the classification to a four-lane Conventional Highway with Access Control.

DESCRIPTION OF THE PROJECT AREA

State Route 32 in the project area serves primarily local traffic associated with development north and south along the project corridor. Caltrans maintains access control along State Route 32 which prohibits breaks in access and requires all development to use existing intersections. There are five intersections along the project corridor: Fir Street, Forest Avenue, El Monte Avenue, Bruce Road, and Yosemite Drive. In addition, there are four signalized ramp intersections associated with the State Route 99 Interchange.

Land uses along the project corridor vary from offices and businesses near State Route 99 to offices and residences further east. Land between State Route 99 and El Monte Avenue is generally developed, primarily with residential uses on the north and office, commercial and residential uses on the south. Two park-and-ride lots are located between the eastbound and westbound lanes on both sides of Fir Street. Dead Horse Slough crosses under State Route 32 just east of Forest Avenue. There are a few undeveloped parcels along this section; however, most of this area is developed. All of the development backs up to State Route 32 with backyard fences and landscaping separating the development from the highway.

Land between El Monte Avenue and Yosemite Drive along the project corridor is generally undeveloped with the exception of an office and residential development located on the north side of State Route 32 between Bruce Road and Yosemite Drive

and recent building activity on the south side of State Route 32 east of El Monte Avenue. The undeveloped land is characterized by an almost flat topography with nonnative annual grassland, isolated wetlands and vernal pools. The South Fork Dead Horse Slough crosses under State Route 32 in a culvert just east of Bruce Road. Hank Marsh Junior High School is located just south of State Route 32 at the intersection of Humboldt Road and El Monte Avenue. The Humboldt Road Burn Dump is located east of Bruce Road south of State Route 32.

The existing drainage along State Route 32 consists of roadside ditches that generally parallel the road and convey flow to Dead Horse Slough and the South Fork Dead Horse Slough.

There are several utilities that cross State Route 32 in the project area including water and wastewater pipes, electrical lines and a Western Area Power Administration 230 kV transmission line just east of the Yosemite Drive intersection; however, there are no known utilities that parallel the facility.

There are no pedestrian or bicycle facilities existing or proposed along State Route 32. Pedestrian and bicycle facilities exist on the parallel roads north and south of State Route 32.

PROJECT PURPOSE AND NEED

Project Purpose

The purpose of the proposed project is to provide additional capacity needed to accommodate approved and planned development on and near the State Route 32 corridor between State Route 99 and Yosemite Drive. The widening of State Route 32 is consistent with the City's General Plan and will reflect Caltrans' Transportation Concept Report with its next update.

Project Need

The project is needed because local growth in the area is anticipated to increase traffic beyond current capacity on State Route 32, resulting in congestion. There are existing operational and safety concerns at the State Route 99/State Route 32 Interchange which can be expected to worsen if the intersections of the two state highway facilities are not improved. The intersection improvements will also help maintain and improve connectivity between the neighborhoods north and south of State Route 32.

Without the proposed project, the congestion and safety issues will increase and substantially degrade the operations of State Route 32 and State Route 99 in the project area.

PROJECT DESCRIPTION

State Route 32 is owned and maintained by Caltrans and improvements to the highway are required to comply with the Caltrans Highway Design Manual unless a design exception is approved by Caltrans. The proposed project complies with all the Caltrans design requirements with the following design exception:

- Section 309.1 of the Highway Design Manual requires a minimum Clear Recovery Zone (CRZ[1]) along the highway. The speed limit in this section is posted at 45 miles per hour, but the 85th percentile speed reaches 54 miles per hour, thus Caltrans considers this section of road to be a high-speed facility. No 'hit tree' accidents have been reported in the last three years.

  Approximately 67 trees are located within the 20-foot CRZ between Fir Street and El Monte Avenue. The City submitted a request for a design exception to Caltrans to change the CRZ from Fir Street to El Monte Avenue from 20 feet to 17 feet. Caltrans has approved this design exception.

The proposed project would widen and improve approximately 2.6 miles of State Route 32, beginning at State Route 99 at the west end of the project corridor and extending east past Yosemite Drive. The project would widen the highway to include a median and four lanes with most of the widening to the north within existing state right of way. As the project approaches Bruce Road, the widening would likely become more symmetrical around the centerline with most of the widening to the north and some widening to the south. The project would extend four lanes past Yosemite Drive and would then taper back to two lanes east of Yosemite Drive.

The project would provide safety improvements by widening the existing roadway to provide standard (8-foot) shoulders and a grassy or paved center median. This median would be 14-feet wide (edge of traveled way to edge of traveled way) from east of Fir Street to Bruce road and 6-feet wide from Bruce Road to the easterly project limits.

Specific improvements from west to east include (Figures 3a through 3d):

- State Route 32 (eastbound) would be improved from the State Route 99 northbound off-ramp to approximately 600 feet east of Fir Street by adding a third through lane. This third lane would extend through the Fir Street intersection and then taper back to two eastbound lanes.

- State Route 32 (westbound) would be improved from approximately 600 feet east of Fir Street to the State Route 99 northbound on-ramp. One lane would

[1] Clear recovery zone is an area clear of fixed objects adjacent to the roadway to provide a recovery zone for vehicles that have left the traveled way. The Caltrans clear recovery zone for Conventional Highways with no curbs is 20 feet.

serve as a trap lane onto northbound State Route 99, and the remaining two lanes would extend through the intersection. Three lanes would be provided underneath the existing State Route 99 structure, with one lane for the left-turn movement onto the southbound couplet and two lanes continuing west towards downtown Chico.

- State Route 99 (northbound and southbound) exit ramps would be improved by adding an additional lane at State Route 32 (two thru lanes and one right-turn lane).

- The State Route 99/State Route 32 couplets would be improved to add one lane both eastbound and westbound (to give a total of three lanes) and squaring up the intersections to remove the free right-turn lanes.

- Fir Street would be signalized at both intersections with State Route 32 and converted to a one-way northbound movement with two lanes turning west on State Route 32 and a third lane going north to East 8th Street.

- El Monte Avenue would be widened to include a separated left turn lane and a shared thru/right lane in the southbound direction. Northbound traffic will be accommodated with an exclusive left turn lane, a shared thru/left turn lane, and a separated right-turn lane. Left turns to and from the existing driveway on the east side of the roadway will be eliminated with a raised center island. The southbound movement from El Monte Avenue onto Humboldt Road would include an exclusive left lane and a shared through left lane.

- Forest Avenue will be widened to include southbound thru, left-, and right-turn lanes and northbound dual lefts, right, and thru lanes. An additional southbound thru lane is proposed south of State Route 32, and a raised center island will be constructed to eliminate left turns to/from the existing driveways on the east and west sides of the road between State Route 32 and Humboldt Road.

The project would result in minor changes to the park-and-ride lots and the removal of a minor amount of landscaping to minimize tree removal on the south side of State Route 32. None of the work proposed would affect the number of spaces in the lots or the operation of the lots.

Work at the intersections would require reconstruction of curb returns, relocation of traffic signals and lighting facilities, relocation of utilities and drainage facilities, and conform paving along the side streets as needed to match the existing configuration of the side streets. In addition, the project design includes the south leg of the Yosemite Drive intersection which may be constructed at the same time as the project to provide access to the Oak Valley subdivision which was recently approved by the City of Chico. The existing crosswalks at Forest Avenue and El Monte Avenue would be maintained and the project would replace the existing sidewalk on the northeast side of State Route

32 and Bruce Road. The project would evaluate the need and possibly construct additional crosswalks at Bruce Road and Yosemite Drive.

Class II bicycle lanes will be included to cross State Route 32 at Forest Avenue, El Monte Avenue and Bruce Road.

The widening would result in two 12-foot lanes and 8-foot shoulders in both directions with no curbs or dikes at the edge of pavement. Street lighting is proposed at the intersections. Roadway drainage would sheet flow to the adjacent roadside ditches. Modifications to the existing drainage system would focus on developing bio-swale type roadside ditches, with gentle side slopes and hydroseeding to prevent erosion. Culverts would be constructed along some project segments and also across Forest Avenue and El Monte Avenue to connect the roadside drainage system to Dead Horse Slough.

Construction of the project would require the removal of some existing vegetation and trees along the north and south sides of State Route 32 primarily between Fir Street and El Monte Avenue. A tree survey conducted for the project identified a total of 344 trees in the project area. Tree species included camphor, Chinese pistache, cork oak, crab apple, elm, live oak, poplar, redwood, Valley oak, and walnut. The diameter at breast height (DBH) of the trees ranged from 1 inch to 41 inches. There are several species with trees with a diameter at breast height larger than 30 inches (Chinese pistache – 2, redwood – 25, Valley oak – 5, and walnut – 1).

Bridge / Culvert Design

The project corridor includes one bridge crossing of Dead Horse Slough (Bridge Number 12-0135) just east of Forest Avenue, and one culvert crossing of the South Fork Dead Horse Slough just east of Bruce Road. Bridge 12-0135 is a four span flat slab bridge that is approximately 124 feet long and 32.5 feet wide. The project would construct a new bridge 49 feet wide on the north side of the existing bridge resulting in two lanes in each direction with a 14-foot median. Based on preliminary design information, it is anticipated that the new bridge would be a four span, reinforced concrete flat slab structure, similar to the existing bridge. The length of the new bridge would be approximately 125 feet. An Advanced Planning Study preliminary design of the bridge is shown in Figure 4 at the end of this chapter.

The culvert crossing of South Fork Dead Horse Slough located just east of the Bruce Road intersection would either be lengthened or replaced with either a new, longer culvert or a parallel culvert.

Utility Information

Preliminary design indicates the possible need for future crossings of State Route 32 in the project area to accommodate various utilities such as water, wastewater, drainage, electrical, communications, telephone, gas, etc. Therefore, the project includes the construction of utility crossings at the intersections along State Route 32 on an 'as-

needed' basis as determined in coordination with the various service providers. In addition, a second sewer crossing will be constructed adjacent to the existing sewer line east of El Monte Avenue. These utility crossings would 'stub out' within the project limits on the north and south sides of State Route 32 to allow future connection, if deemed necessary by the City or County, to various services. The project does not include the installation of any utilities outside the State Route 32 right-of-way project limits; future projects, if proposed, would require separate environmental review.

There is a pump house and a well with a 6-inch steel casing located adjacent to the existing right of way fence line on the north side of the road just east of El Monte Avenue. The pump house is outside Caltrans right of way, and the 6-inch steel casing is on the Caltrans side of the fence. The proposed grading limits end on the inside of the existing fence, and the proposed edge of travel way is about 25 feet south of the existing well. The well casing is proposed to remain.

Other minor utility relocation may be required for the project; however, any utility relocation would be within the same area of impact as identified for the proposed project.

Sound Walls

The proposed project would increase the number of through travel lanes from two to four, and would shift the travel way closer to existing residential uses on the north side of the corridor. Increased traffic volumes would result in increased traffic noise levels. Caltrans and the City have committed to use open graded asphalt concrete (OGAC) on the project which would reduce long-term operational noise levels along the corridor. Even with open graded asphalt concrete, projected noise increases at some of the residential uses may be considered substantial; therefore, the City is evaluating the possibility of constructing sound walls at various locations along the corridor.

The location of the possible sound walls is based on the noise study which indicates sound walls would be needed in some locations to reduce noise impacts under CEQA to a less-than-significant level. One location of the possible sound walls is on the north side of the road from State Route 99 east to El Monte Avenue. A second possible sound wall would be on the south side of State Route 99 near Forest Avenue. The maximum height of the sound wall would be 6 feet above the edge of travelway. Detailed discussion of the possible sound walls is provided in the noise section of the Initial Study.

Hazardous Materials

The Humboldt Road Burn Dump is located east of Bruce Road and south of State Route 32. The dump is a former solid waste disposal facility from which there is known migration. The City has been working with various federal and state regulatory agencies to remediate the site. Although the site has been undergoing remedial action over the past three years; residual waste may still be present in locations that could affect the

proposed widening of State Route 32. Construction activities, including possible replacement of the box culvert east of Bruce Road will occur in the area where impacted sediments are present within the South Fork Dead Horse Slough. Therefore, specific measures will need to be taken to comply with federal and state requirements prior to road widening construction. Detailed discussion of this issue is provided in the hazardous materials section of the Initial Study.

Right-of-Way

The existing state right-of-way along the project corridor is generally 142 feet wide. The width adjacent to the park-and-ride lots and interchange extends to over 300 feet. Based on preliminary design, the proposed project can be accommodated within the existing right of way and no permanent right of way is required along State Route 32 with the exception of the segment near Bruce Road. The improvements associated with the signalization of Bruce Road would require the acquisition of a minor amount of right-of-way in the northeast quadrant (varying in width from 28 to 45 feet for approximately 800 feet from Bruce Road east to widen the road on the north side). In addition, small temporary construction easements may be required to construct the Dead Horse Slough Bridge and to extend or replace the South Fork Dead Horse Slough culvert east of Bruce Road. A minor amount of right-of-way may be acquired or may be dedicated to construct the proposed improvements along El Monte Avenue and Forest Avenue between Humboldt Road and State Route 32.

CONSTRUCTION INFORMATION

Extent of Ground Disturbing Construction Activity

The maximum depth of construction activity varies from approximately 3 to 4 feet or less for the road construction activity, to approximately 8 to 10 feet for any utility relocation and traffic signal and lighting work. The ground disturbance associated with the proposed new bridge at Dead Horse Slough would require the construction of footings and possibly pile foundations; the depth of construction activity for this work is estimated at 40 to 50 feet deep.

Equipment Storage/Vehicle Storage/Staging Areas

Two potential construction staging areas have been identified along the project corridor at the existing park-and-ride lots at the west end of the project corridor at Fir Street. All equipment and material staging for the project would occur within these areas, within existing public right-of-way, or on private property subject to landowner approval.

Due to the environmental sensitivities of the project corridor (i.e., wetlands and special-status species), any additional staging areas proposed by the contractor on land that is currently undeveloped may require separate environmental review.

Construction Information and Traffic Handling

The project can be constructed without significant closures or delay to traffic. The majority of the widening will be outside of the existing traveled way, which will allow for traffic to remain in its existing location, and the existing traffic signals will be able to remain in operation for the first stage of roadway construction. The general sequence of the first stage of construction is as follows:

- Rough grading and culvert construction
- Roadway and bridge widening construction
- New signal construction

The second stage of roadway construction would consist of switching to the new traffic signals, constructing the overlay of the existing roadway, and final roadway striping.

The Dead Horse Slough bridge widening would be constructed to the north with traffic remaining in its existing location. After construction of the new structure, the new structure would be connected to the existing structure with a closure pour.

The contractor would be required to prepare a traffic management plan and submit it to Caltrans and the City for review and approval prior to commencement of construction. No road closures or nighttime work are anticipated; however, Caltrans may require that improvements to State Route 99 ramps be conducted at night to minimize conflicts with the heavier traffic volumes associated with daytime traffic.

Road construction activities would include standard widening and road rehabilitation practices. Temporary access controls during road construction may require the use of a one-way reversible lane controlled by flaggers. Only temporary minor delays are anticipated. Construction contractors would schedule construction operations so that conflicts with traffic on State Route 32 are minimized.

Bridge construction and culvert activities in Dead Horse Slough would occur during the summer dry months.

PROJECT SCHEDULE

Depending on funding, development in the project area, and project needs, construction activities could begin in 2008 and be completed by 2010. The City intends to construct the entire project in one construction contract. However, if phasing is required (due to funding constraints, regulatory requirements or other reasons), the City will work with Caltrans to determine which project components should be constructed first. If the project is phased, the City has identified the need to construct the interchange improvements before the road widening improvements. In addition, Caltrans has

requested that the contaminated materials found in the South Fork Dead Horse Slough be remediated before the remaining work at the Bruce Road intersection is completed.

PROJECT FUNDING

The total estimated cost of the project is $15.7 million, including construction items, stormwater costs, and right of way and utility costs. It is anticipated that the project would be constructed entirely using local funds; no state or federal funds are anticipated. Sound walls, if constructed, would add an additional $2.3 million to project cost.

DESIGN FEATURES CONSIDERED AND WITHDRAWN

Because the project is a City-sponsored project on a Caltrans facility, the City and Caltrans are coordinating preliminary design of the project. Two design features considered by the City and Caltrans during preliminary design are raised medians and roundabouts.

The City originally asked Caltrans to consider a design exception that would allow construction of a raised median (with or without landscaping) along the project corridor from the east end of the park-and-ride lot to Bruce Road. Caltrans' design requirements do not allow raised medians on roadways with speeds greater than 45 mph. A recent speed study confirmed that speeds on the project corridor are greater than 45 mph; therefore, it was determined that no raised curbs would be considered by Caltrans at this time. In the event that future speed surveys indicate speeds have lowered below 45 mph, Caltrans would consider construction of a raised median. The project has been designed to allow future construction of a raised median.

Due to community sensitivity concerning increased traffic and traffic speeds along State Route 32, the City and Caltrans studied the feasibility of constructing roundabouts at several of the intersections along the project corridor. Based on preliminary design, the project development team (with representatives from the City, Caltrans and Butte County Association of Governments) determined that roundabouts are not feasible along the project corridor due to the following:

- concerns about impacts to existing development,
- ease of use by pedestrians, school-age children and bicyclists,
- engineering design considerations (steep grade),
- operational concerns (substantially higher volumes on some movements than other movements result in inefficient operation), and
- failure to achieve a minimum 10-year traffic capacity design life.

The results of the various analyses that were conducted for possible roundabouts along the corridor are on file at the City offices.

ANTICIPATED PERMITS AND CONSULTATIONS

The permits and consultations identified in Table 1 are anticipated to be required to construct the project:

Table 1. Anticipated Permits and Consultations

Agency	Approval or Permit	Approval or Permit Status
U.S. Army Corps of Engineers (Corps)	Clean Water Act (CWA) Section 404 individual permit. Cleanup activities in the South Fork Dead Horse Slough will require approval by the Corps	Wetland delineation has been verified (Corps regulatory number 200501152). Section 404 individual permit to be submitted.
U.S. Fish and Wildlife Service (USFWS)	Section 7 consultation with the Corps for Threatened and Endangered Species (listed vernal pool invertebrates, Butte County meadowfoam and giant garter snake) Cleanup activities in the South Fork Dead Horse Sough will require approval by the USFWS	Biological Assessment has been prepared and will be submitted to the Corps to initiate consultation with USFWS.
State Office of Historic Preservation (OHP)	Section 106 consultation with the Corps	Cultural resources documentation has been prepared and will be submitted to the Corps to initiate consultation with OHP.
Central Valley Regional Water Quality Control Board (Regional Board)	All Section 404 permits require a Clean Water Act Section 401 water quality certification from the Regional Board. In addition, Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) requires enrollment into the Statewide Construction General Permit	City will apply for permits after completion of environmental documentation.
Regional Board or Department of Toxic Substances Control	A report of waste discharge, remedial action plan, and/or remedial design and implementation plan will need to be submitted to the Regional Board to obtain a waste discharge requirement order or permit to remove hazardous materials within South Fork Dead Horse Slough	City will obtain a waste discharge requirement order or permit after completion of environmental documentation.

Table 1. Anticipated Permits and Consultations		
Agency	**Approval or Permit**	**Approval or Permit Status**
California Department of Fish and Game (DFG)	A Section 1602 streambed alteration agreement is required because the project requires construction in creeks and streams subject to DFG jurisdiction (Dead Horse Slough and South Fork Dead Horse Slough). Cleanup activities in South Fork Dead Horse Slough will require DFG approval (Section 1602). A DFG Incidental Take Permit or Consistency Determination under Section 2080.1 of the California Endangered Species Act is required to allow the take of Butte County meadowfoam and giant garter snake.	City will apply for agreement after completion of environmental documentation. The City will apply for the Section 2080.1 determination after completion of Section 7 consultation with the USFWS.
State Reclamation Board	A Reclamation Board permit is required before the start of any work in Dead Horse Slough, including excavation and construction activities, where the Reclamation Board exercises their authority.	The City will apply for the Reclamation Board permit after completion of the environmental documentation.
Butte County Air Quality Management District	An Authority to Construct permit will be required from the Air District before any work in South Fork Dead Horse Slough near the Humboldt Road Burn Dump.	The City will apply for any necessary permits after completion of the environmental documentation.

The City contacted the State Lands Commission regarding the possible need for a land use lease if the project uses sovereign lands of the State of California. A land use lease is not required per the State Lands Commission (File SD 2066-04-27.3)

LIST OF SEPARATELY BOUND TECHNICAL REPORTS

The following technical reports have been prepared to support preliminary design of the project and are available for review at the City of Chico Community Services Department offices during normal business hours.

- Combined Project Study Report/Project Report (PSR/PR) for the State Route 32 Widening – State Route 99 to Yosemite Drive, prepared by Mark Thomas & Company

- Traffic Report for the State Route 32 Widening Project Report/Environmental Document, prepared by Fehr & Peers Transportation Consultants

- Air Quality Report, State Route 32 Widening Project, prepared by Illingworth & Rodkin, Inc.

- Noise Impact Assessment, State Route 32 Widening Project, prepared by Illingworth & Rodkin

- Wetland Delineation Report, State Route 32 Widening Project (Corps Identification Number 200501152), prepared by Gallaway Consulting, Inc.

- Natural Environment Study, State Route 32 Road Widening Project, prepared by Gallaway Consulting, Inc.

- Biological Assessment, State Route 32 Road Widening Project, prepared by Gallaway Consulting, Inc.

- Historic Property Survey Report, State Route 32 Widening Project, prepared by Pacific Legacy, Inc.

- Archaeological Survey and Test Excavation Report for the State Route 32 Widening from State Route 99 to Yosemite Drive Project, prepared by Pacific Legacy, Inc.

- Preliminary Geotechnical Report, State Route 32 Widening, prepared by Taber Consultants

- Initial Site Assessment and Aerially Deposited Lead Sampling Report, State Route 32 Widening, prepared by Taber Consultants

- Hazardous Materials Report for Humboldt Road Burn Dump Area, State Route 32 Widening Project, prepared by EMKO Environmental, Inc.

- Bridge Design Hydraulic Study for the State Route 32 Widening between Fir Street and Yosemite Drive at Dead Horse Slough and South Fork Dead Horse Slough, prepared by WRECO

- Location Hydraulic Study Report for the State Route 32 Widening between Fir Street and Yosemite Drive at Dead Horse Slough and South Fork Dead Horse Slough, prepared by WRECO

- Storm Water Data Report for the State Route 32 Widening between Fir Street and Yosemite Drive at Dead Horse Slough and South Fork Dead Horse Slough, prepared by WRECO

RELATED PROJECTS

There are several projects in the project area as described below.

State Route 99 Auxiliary Lane Project

The State Route 99 Auxiliary Lane project is a project proposed by the Butte County Association of Governments and the City of Chico, in conjunction with Caltrans and the Federal Highway Administration, to improve operations and safety on State Route 99 from State Route 32 to East First Avenue in Chico. Proposed operational and safety improvements would primarily consist of adding northbound (NB) and southbound (SB) auxiliary lanes on State Route 99 between State Route 32 and East First Avenue interchanges, the widening of State Route 32 on- and off-ramps and East First Avenue on- and off-ramps. Included in the widening for the East First Avenue NB off-ramp would be the provision for dual left turn lanes to facilitate the turning movements of existing northbound traffic to westbound traffic on East First Avenue and the widening of East First Avenue.

The Butte County Association of Governments certified the EIR in January 2004 and selected the inside widening alternative together with signalized ramp intersections at East First Avenue. Caltrans approved the project in March 2005. The consultant has prepared Plans, Specifications and Estimate (PS&E) for a Phase 1 project with a total estimated cost of $7.4 million dollars. The Phase 1 project will improve the lower half of the northbound State Route 99 off-ramp to East First Avenue and construct improvements to East First Avenue, including reconstruction of the existing signals. Construction for the Phase 1 project is likely to begin in Spring 2008. The remainder of the project has been defined as Phase 2 and Phase 3 projects, each of which would construct an auxiliary lane in the northbound and southbound directions including on- and off-ramp improvements at State Route 32 and the southbound on-ramp at East First Avenue. Phases 2 and 3 are expected to be constructed together at a total estimated cost of $40 million dollars with expected programming occurring in Summer 2007 for construction in 2010 and 2012. Copies of the environmental documents (State Clearinghouse Number 2002112002) can be reviewed at the Butte County Association of Governments' offices during normal business hours.

Oak Valley Conceptual Master Plan and Subdivision Project

The Oak Valley Conceptual Master Plan and Subdivision project encompasses approximately 340 acres and is generally bounded by State Route 32 on the north, Bruce Road on the west, a Pacific Gas and Electric Company 500 kV transmission line on the east, and Humboldt Road on the south. The Conceptual Master Plan would

include 230 acres of single and multi-family residential units and approximately 109,000 square feet of community commercial uses on 10 acres. The Plan includes a total of approximately 864 single-family units and 260 multi-family units. In addition, 200 very low-density residential units would be developed using a clustered housing concept. The applicant proposes to develop a first phase subdivision including 159 single family homes on 14.6 acres, multi-family residential on 8.2 acres and approximately 20 acres of open space and setback from State Route 32.

The City of Chico was lead agency for the EIR on the project and prepared a Draft EIR, a Recirculated Draft EIR and a Final EIR. The EIR evaluates the impacts associated with buildout of the Conceptual Master Plan at a programmatic level of detail and the impacts of the first phase 43-acre portion of the subdivision map at a project-specific level. The project has been approved by the Chico City Council. Copies of the environmental documents (State Clearinghouse Number 1998032048) can be reviewed at the City of Chico Planning Services Department's office during normal business hours.

Humboldt Road Burn Dump

The Humboldt Road Burn Dump is located in Chico near the intersection of State Route 32 and Bruce Road. The site consists of 157 acres, operated as a burn dump and disposal area for municipal solid waste until the 1960s. The City of Chico voluntarily assumed the role as lead responsible party for the investigation and cleanup of six parcels located within the burn dump. The Regional Water Quality Control Board is the lead regulatory agency. The City completed a remedial investigation, baseline risk assessment, feasibility study, two health risk assessments and a remedial action plan. The selected remedy for the site is consolidating the waste and capping it. The City intends to maintain the capped waste area as undeveloped open space, allowing for pedestrian access. Copies of the environmental documents (State Clearinghouse Number 2004042085) prepared for this project can be reviewed at the City of Chico offices during normal business hours.

Meriam Park

The City of Chico has prepared a Draft Program EIR for the Meriam Park project (State Clearinghouse Number 2005072045). The Meriam Park project is a mixed-use development of 272 acres located in the southeast quadrant of the City of Chico. The project site is located south of State Route 32 and west of Bruce Road. The Meriam Park Master Plan proposes four zoning districts for the project site:

- Traditional Neighborhood Development (210.0 acres)
- Primary Open Space, Preserve (39.0 acres)
- Primary Open Space, Greenway (19.9 acres)
- Public/Quasi-Public Facilities (2.9 acres)

The Draft EIR identified significant impacts in several areas and also identified mitigation measures to reduce significant impacts to a less-than-significant level. Significant and unavoidable impacts for the project and cumulative development were identified in the following areas: traffic and transportation, air quality, and noise. The Draft EIR was released in October 2006 and is available for review at the City of Chico offices during normal business hours.

ENVIRONMENTAL REVIEW PROCESS

The City of Chico held a public workshop on March 9, 2006 to present the project to the public and interested agencies, and to obtain input on issues and design aspects. Individuals were encouraged to submit verbal and written comments about the project and issues of concern.

The issues identified at the public workshop included (in no particular order):

- Increased noise levels
- Tree and vegetation removal
- Specific traffic improvements
- Bicycle path
- Pedestrian traffic crossing the State highway
- Sound walls
- Increased water runoff and possible flooding
- Speed limits
- Importance of the project to Chico
- Aesthetics of the project as it relates to landscaping, a median, roadway designs, and right turns
- Speed limits and need for sound walls to provide noise reduction and increased safety
- Coordinating the signals to encourage slower speeds
- Slowing traffic on State Route 32
- Using sound-dampening asphalt
- Safety for pedestrians and bicyclists crossing State Route 32
- Landscaped median and retaining and/or planting native vegetation along the sides of the road
- Traffic calming measures to slow traffic and improve safety
- Aesthetically pleasing sound walls (locate the walls as close to the roadway as possible, plant trees or vines along the road side of the wall)
- Aesthetics of the project; keep Chico as green as possible; remove as little vegetation as possible
- Increased speed due to additional lanes which will impact safety
- Decrease in travel time / increase in speed associated with the project
- Raised curbs and vegetated medians to reduce speeds

- Cost per residence for the sound walls
- Leave as much vegetation as possible between the sound walls and the residences
- Air quality mitigation needed during construction and operation
- Reduce speeds to 40 mph to allow the construction of curbs and landscaping; synchronize the lights; provide substantial trees and vegetation from Highway 99 to Forest
- Design the project to be similar to the Avenues section of the Esplanade
- Construct sound absorbing walls on raised berms to reduce tire noise
- Plant riparian trees where the road crosses riparian areas
- Design the roadside vegetation to integrate into the natural landscape; plant vernal pool species near vernal pools and oaks near riparian areas (subject to appropriate soils and watering systems)
- Incorporate wildlife crossings, as needed, for frogs, turtles, snakes, etc.
- Design the South Fork Dead Horse Slough culvert to allow wildlife passage
- Treat and mitigate urban runoff by using best management practices including bioswales, recessed tree areas, and other means of containing and biologically treating runoff
- Tribal consultation process is requested to be developed for the project to address negotiations for mitigation of inadvertent discovery, destruction of sensitive traditional plant materials, and monitoring protocols and implementation
- Tribal monitors are requested during construction
- Would a light rail system eliminate the need for this project?
- Bike lanes or widening of the Highway 99 underpass should be required for this project; no safe way to cross under 99
- Current design (four lanes narrowing down to two lanes) is a built in "traffic-calming device" which has effectively controlled and managed traffic so that a higher degree of safety between automobiles and pedestrians/bicyclists has been maintained.

The City has prepared this Initial Study and determined that the project may result in a significant effect on the environment; therefore, the City has prepared a Notice of Preparation (NOP) of an Environmental Impact Report (EIR). The NOP will be circulated for 30 days to solicit public and agency comments. During or shortly after the 30-day review period, the City will hold a public meeting to solicit comments on the Initial Study and NOP. After the comment period closes, the City will prepare a focused Draft EIR and circulate the Draft EIR for review and comment by the public, as well as all responsible and other interested jurisdictions, agencies, organizations and individuals. Written comments received on the Draft EIR during the public review period, and oral testimony received at any public hearing, will be addressed in the Final EIR. The Final EIR will be reviewed by the City Council for certification in accordance with CEQA and the City Guidelines. After certification of the EIR, the City Council and Caltrans will consider approval of the project.

MITIGATION MONITORING PROGRAM

CEQA requires a lead agency to adopt a mitigation monitoring program for mitigation measures included in an Initial Study and EIR that would avoid or mitigate significant environmental effects. The City has chosen to prepare a mitigation monitoring program so that members of the public, responsible agencies and others can review the program before it is adopted (Appendix A). The mitigation monitoring program is required to ensure compliance with the mitigation measures identified in the Initial Study, pursuant to Section 21081.6 of the Public Resources Code.

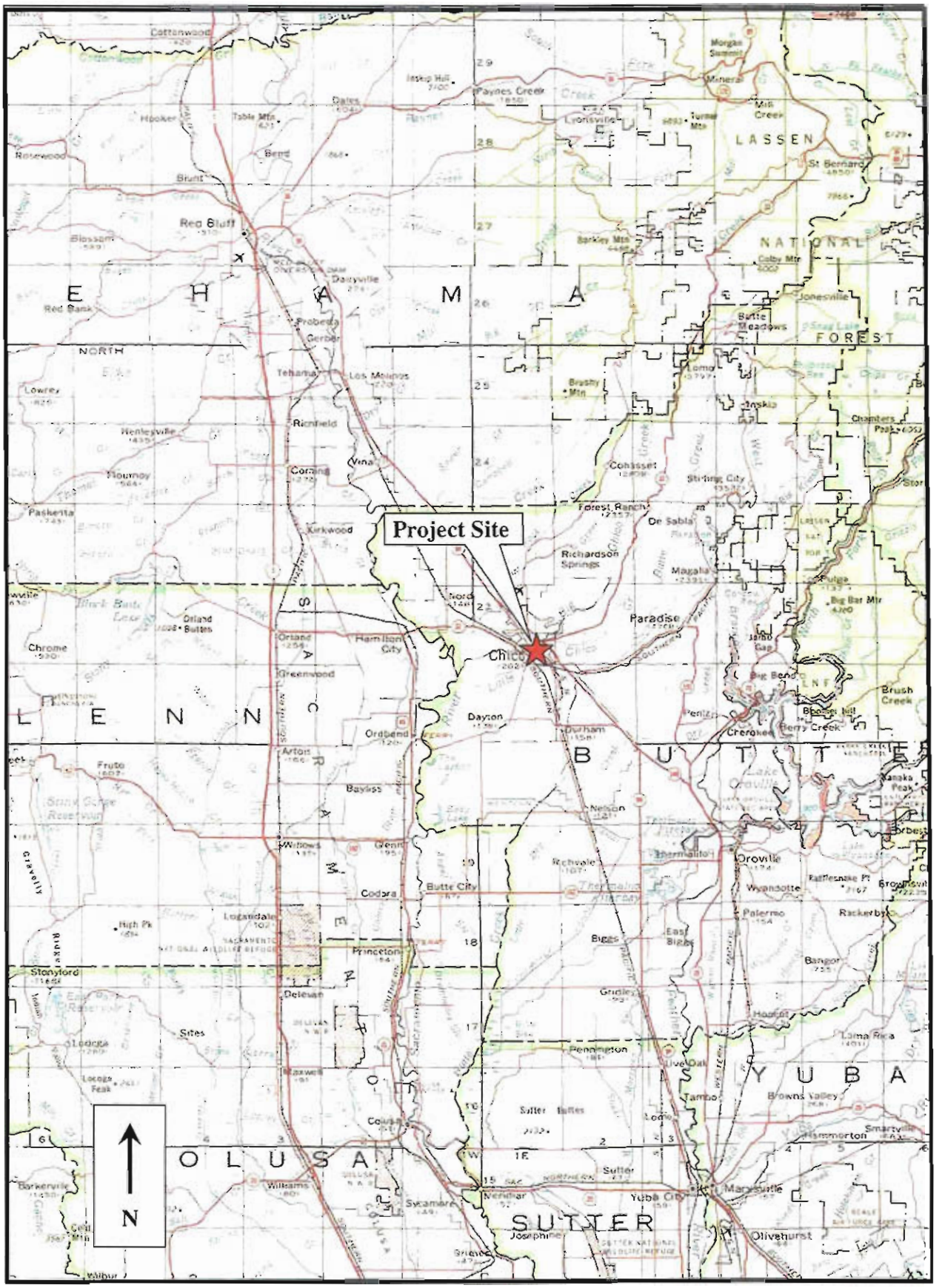


Figure 1. Regional Location

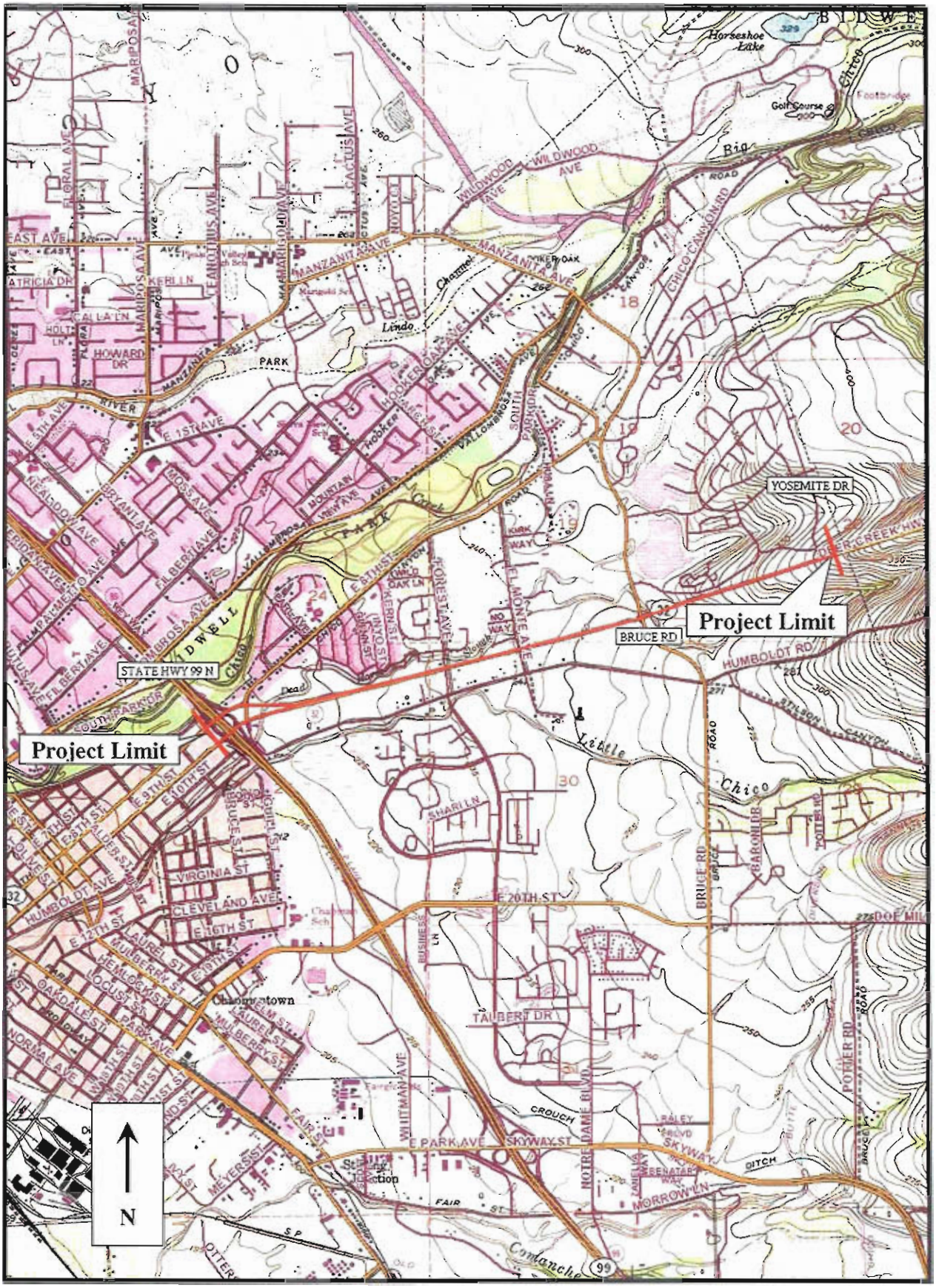
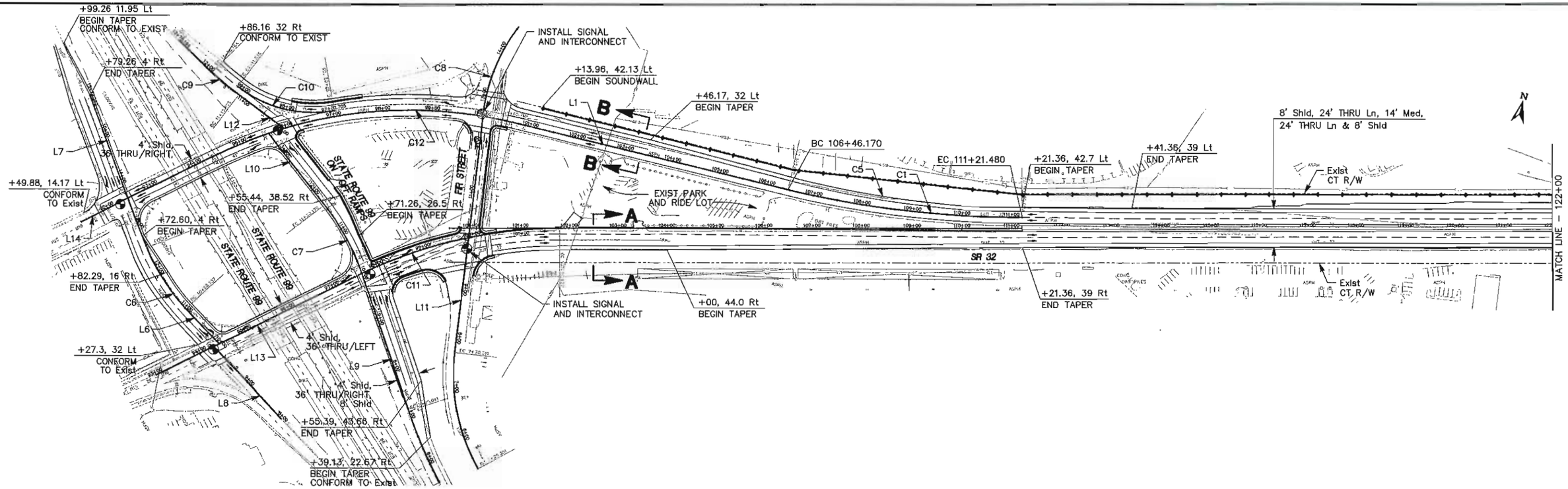
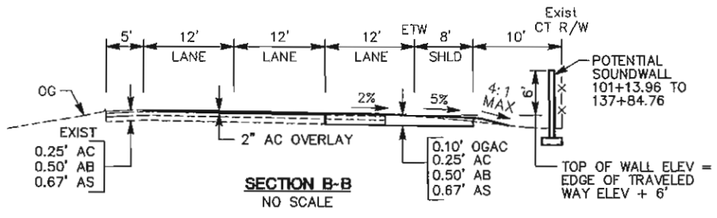


Figure 2. Project Location





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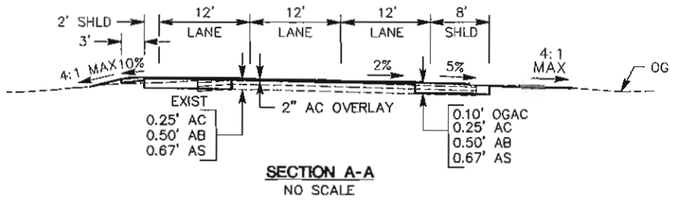


SECTION A-A
NO SCALE

0 100 200 400

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	TANGENT
C1	2000.00	13°37'00"	475.31	238.78
C2	3000.00	1°16'39"	66.89	33.45
C3	3000.00	1°16'39"	66.89	33.45
C4	10012.00	3°24'00"	594.12	297.15
C5	1984.25	9°35'36"	323.23	166.51
C6	386.00	22°07'07"	149.01	75.45
C7	500.00	18°21'19"	160.18	80.78
C8	350.00	56°27'27"	344.88	187.90
C9	500.00	8°03'07"	70.27	35.19
C10	252.00	47°33'29"	209.17	111.04
C11	912.00	26°31'18"	422.16	214.93
C12	880.00	40°06'08"	615.93	321.18

LINE TABLE		
LINE	LENGTH	BEARING
L1	584.44	N89°05'19"E
L2	6497.28	N75°27'30"E
L3	471.35	N76°44'09"E
L4	220.54	N75°27'30"E
L5	4589.07	N75°27'30"E
L6	98.14	N57°46'16"W
L7	332.11	N35°39'09"W
L8	200.00	N57°46'16"W
L9	294.96	N32°58'31"W
L10	185.22	N52°20'54"W
L11	492.49	N07°51'21"W
L12	115.90	N68°10'37"W
L13	458.47	N48°56'12"E
L14	309.52	N48°59'11"E

LEGEND

SIGNALIZED INTERSECTION

POTENTIAL SOUNDWALL

NOTE:
1. STRUCTURAL SECTIONS SHOWN ARE PRELIMINARY AND WILL BE VERIFIED PENDING GEOTECHNICAL INVESTIGATIONS.

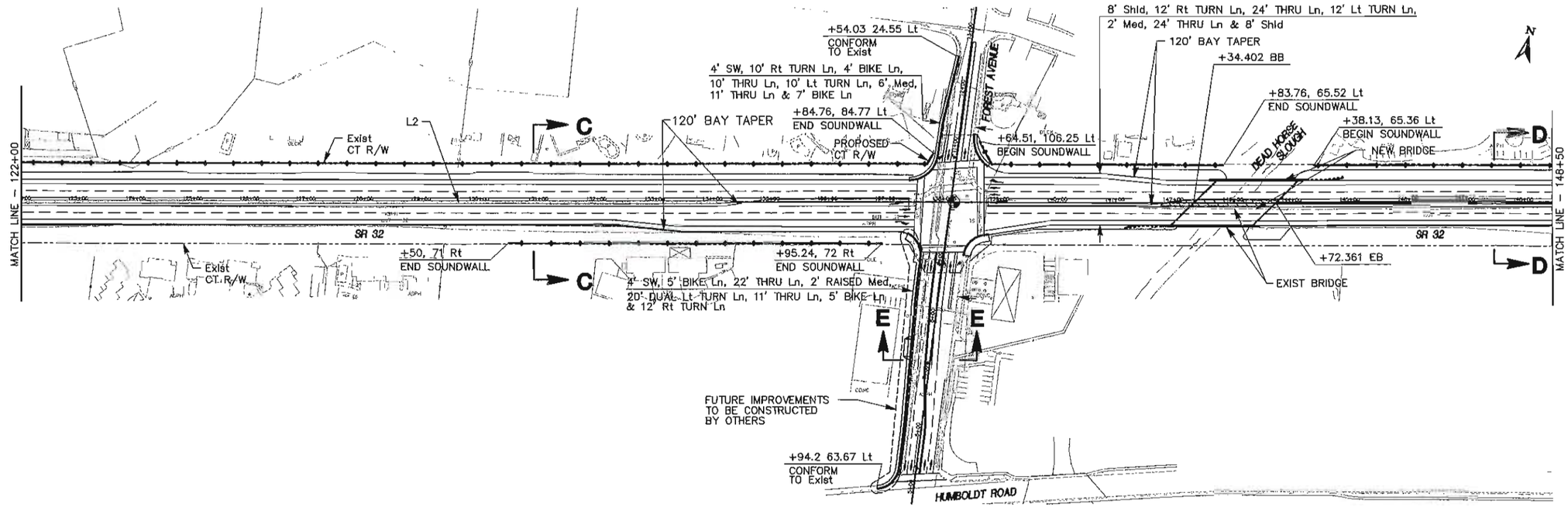
FIGURE 3a

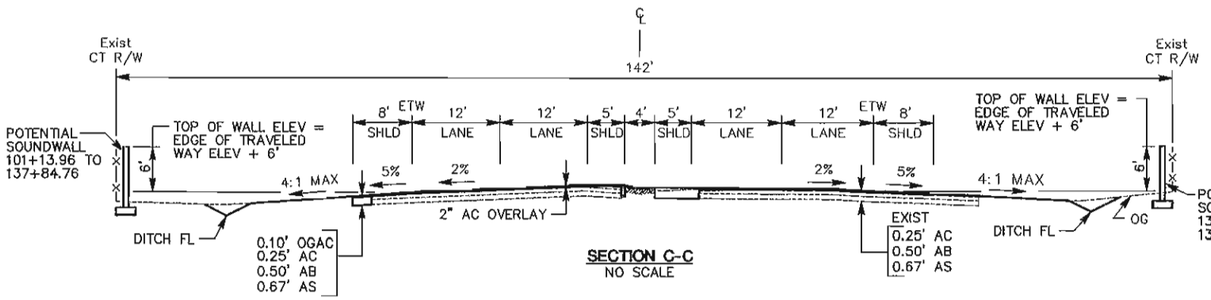
PRELIMINARY PROJECT DESIGN (1 OF 4)

MARK THOMAS & COMPANY, INC.
7300 FOLSOM BOULEVARD, SUITE 203
SACRAMENTO, CALIFORNIA 95826
(916) 381-9100

February 5, 2007

CITY OF CHICO
SR32 WIDENING
PM 10.14 to 12.65
(SR99 TO YOSEMITE DRIVE)





SECTION C-C
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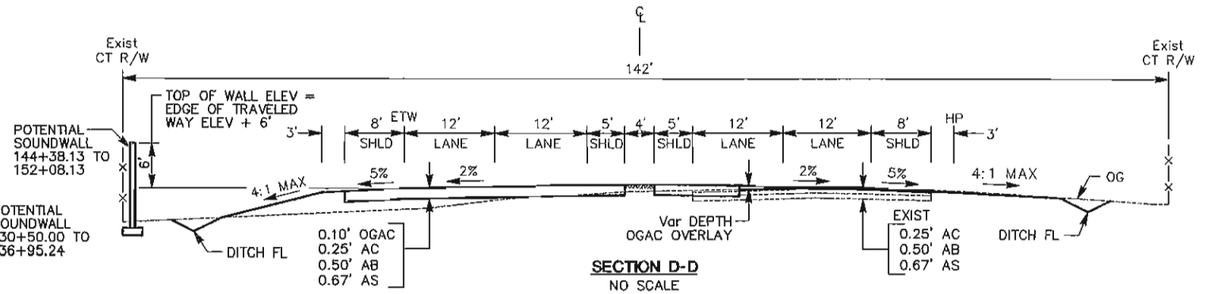

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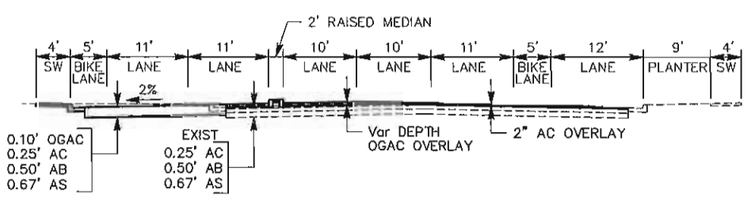

SECTION E-E
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FIGURE 3b

PRELIMINARY PROJECT DESIGN (2 OF 4)

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(916) 381-9100

CITY OF CHICO
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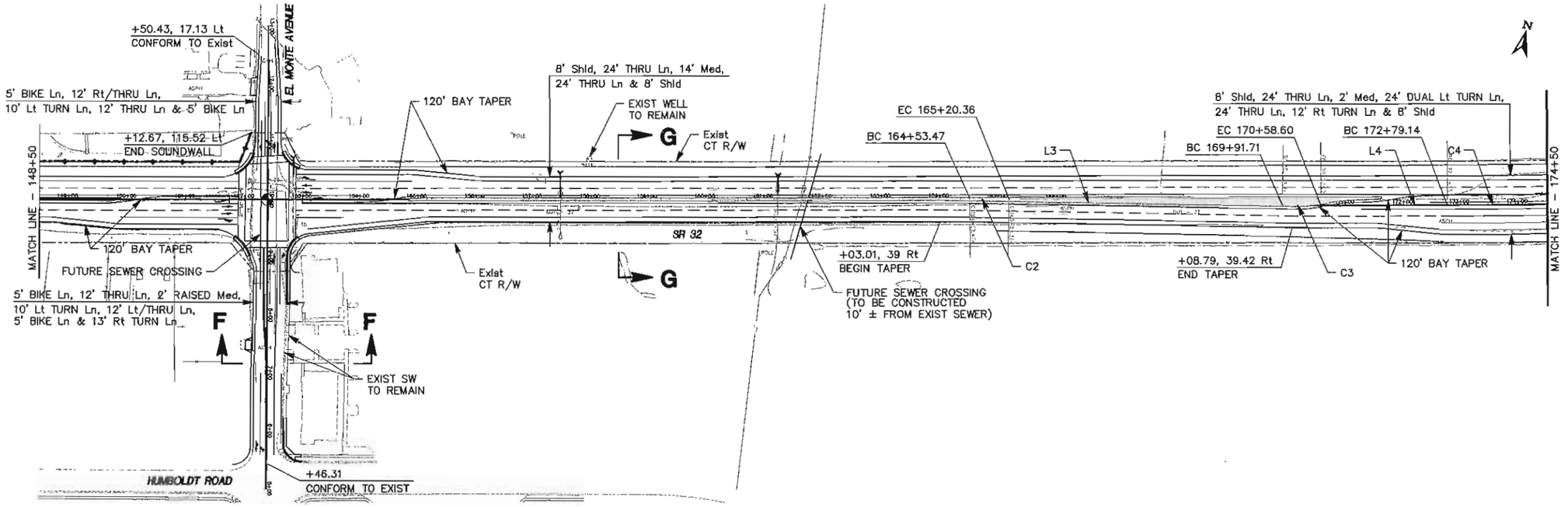
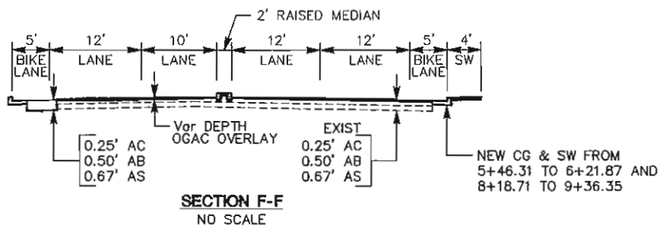
February 5, 2007





SECTION F-F
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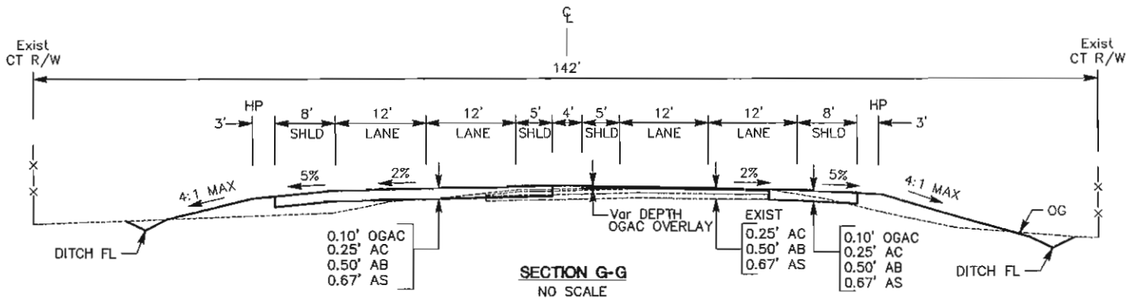

SECTION G-G
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FIGURE 3c

PRELIMINARY PROJECT DESIGN (3 OF 4)

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(916) 381-9100

February 5, 2007

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SR32 WIDENING
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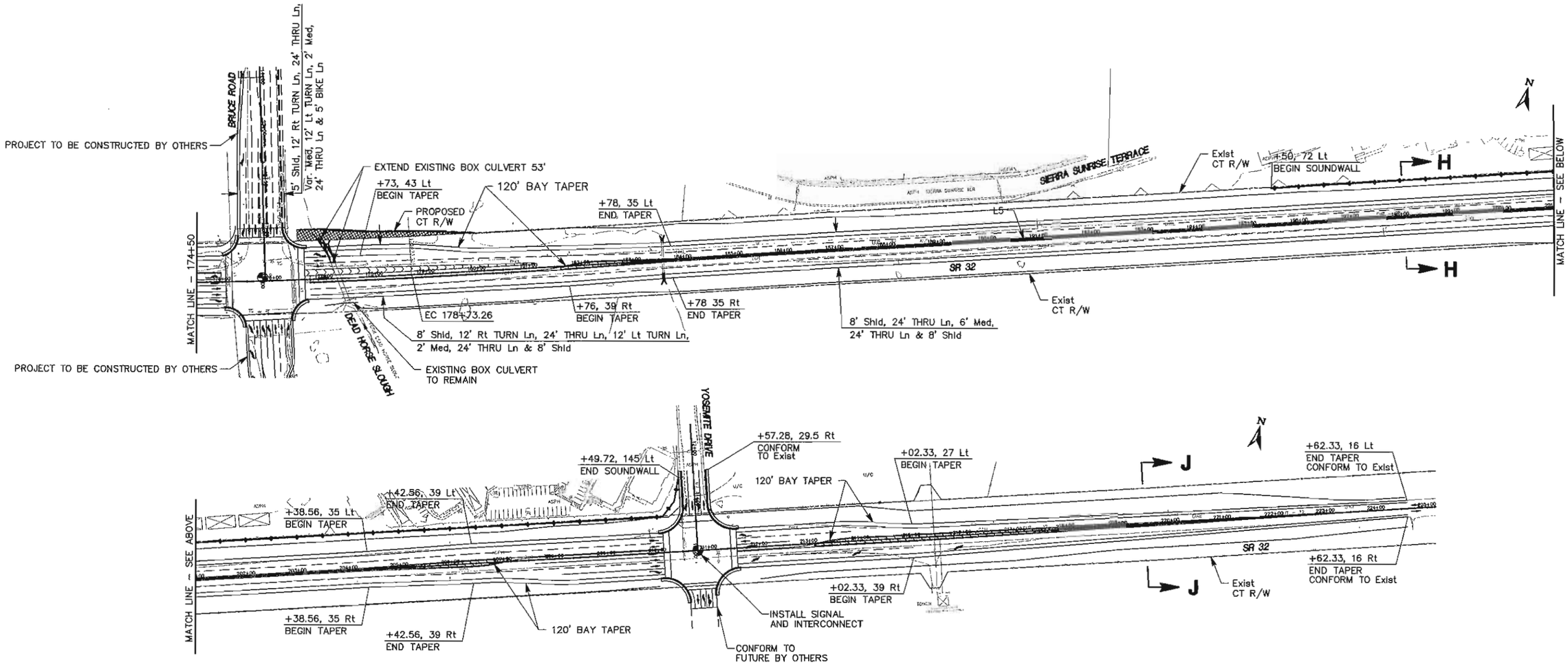

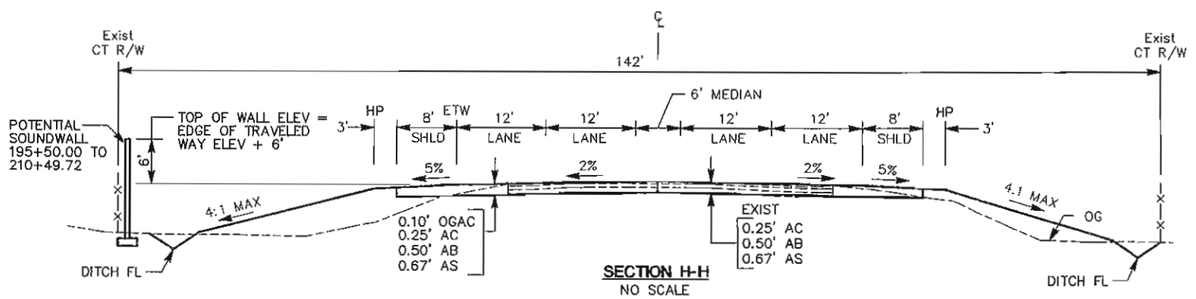

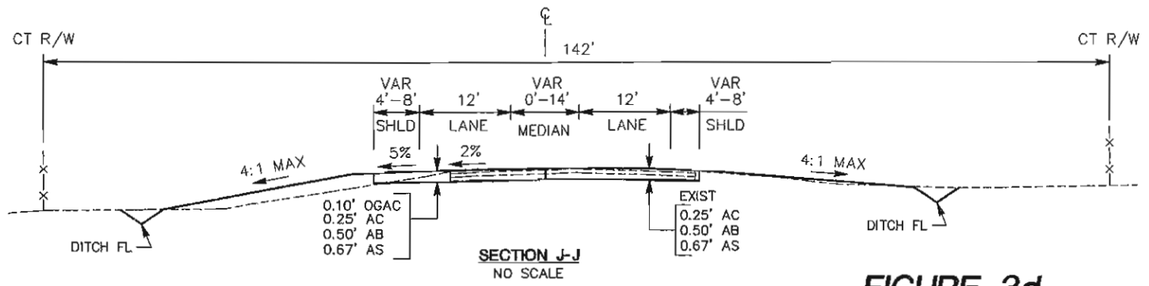

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FIGURE 3d

PRELIMINARY PROJECT DESIGN (4 OF 4)

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(916) 381-9100

February 5, 2007

CITY OF CHICO
SR32 WIDENING
PM 10.14 to 12.65
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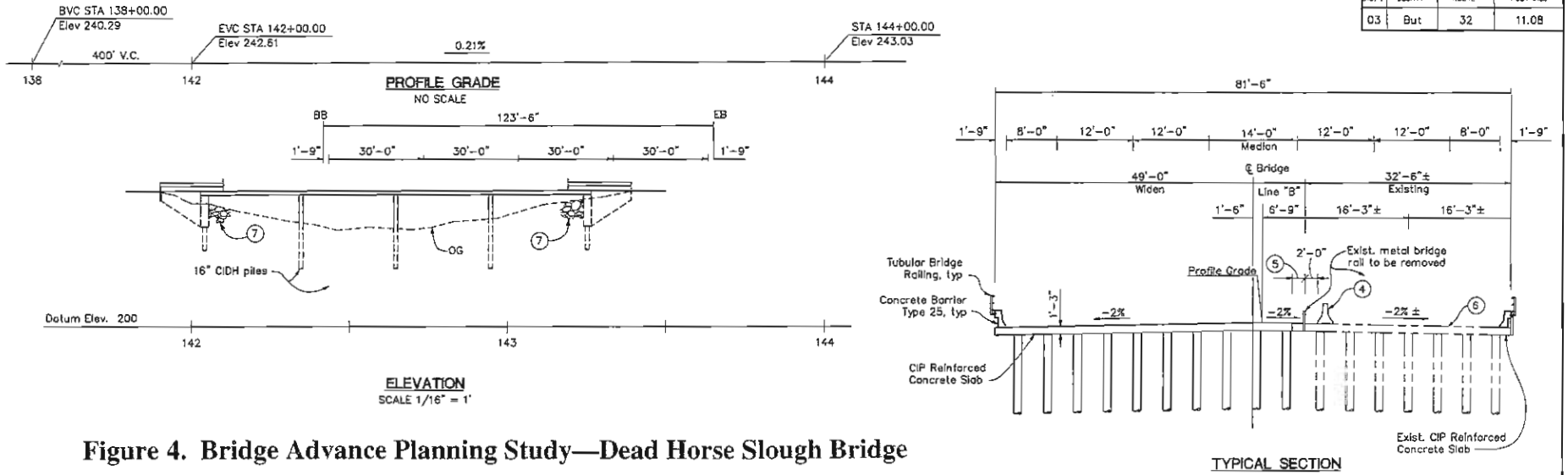
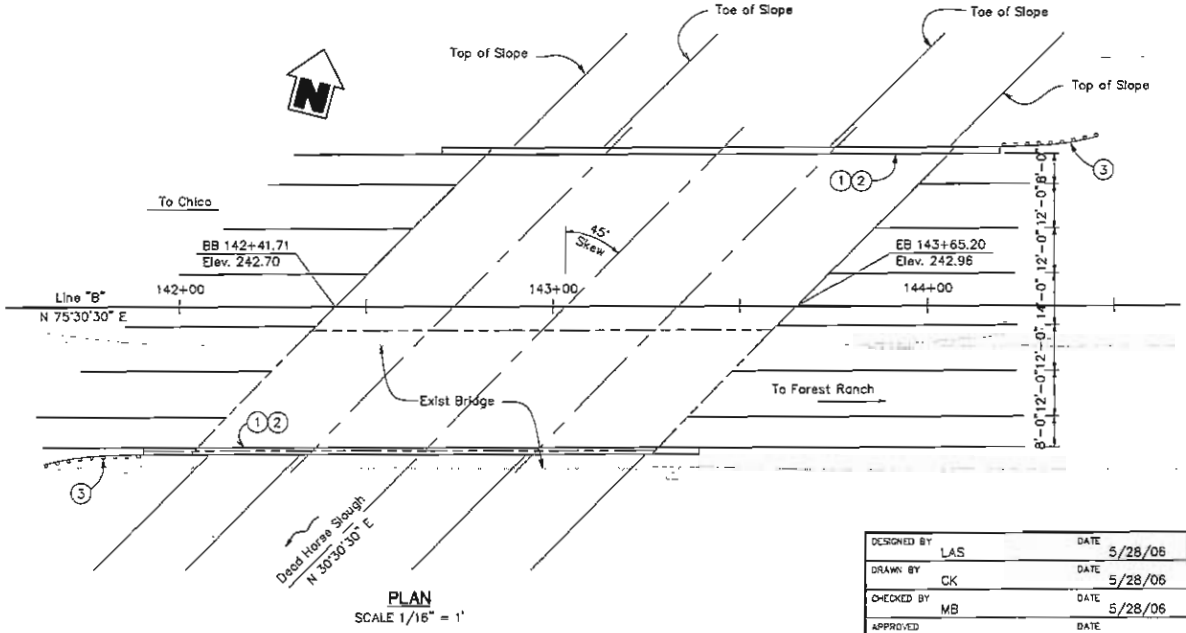


DIST.	COUNTY	ROUTE	POST MILE
03	But	32	11.08

Figure 4. Bridge Advance Planning Study—Dead Horse Slough Bridge



Date of Estimate	= May 2006
Str Depth	= 1'-3"
Length	= 123.5 ft
Width	= 49.0 ft
Area	= 6052 ft²
Cost/Sq.ft including 10% Mobilization 25% Contingency	= 175.00 $/ft²
Total Cost	= $1,050,000

Notes:

1. Point Bridge Number
2. Point Bridge Name
3. MBGR, see "Road Plans"
4. Temporary Rail Type K
5. 2'-0" Closure Pour
6. Place methacrylate on existing deck
7. Rock Slope Protection

DESIGNED BY	LAS	DATE	5/28/06
DRAWN BY	CK	DATE	5/28/06
CHECKED BY	MB	DATE	5/28/06
APPROVED		DATE	

FILE => $REQUEST

MARK THOMAS & COMPANY, INC.
7300 FOLSOM BOULEVARD,
SUITE 203
SACRAMENTO, CALIFORNIA 95826
(916) 381-9100

PLANNING STUDY

DEAD HORSE SLOUGH BRIDGE (WIDEN)

BRIDGE NO.	12-0135	DU	03
SCALE:	AS NOTED	EA	1E4900

PREPARED FOR THE STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

CHAPTER 3 ENVIRONMENTAL CHECKLIST

This chapter of the Initial Study incorporates the Environmental Checklist contained in Appendix G of the CEQA Guidelines along with specific environmental issues pertaining to the City of Chico. The environmental setting, discussion of checklist items along with potential impacts and mitigation measures are included for each environmental topic areas.

A. AESTHETICS

1. Environmental Setting

The State Route 32 project corridor traverses commercial uses near State Route 99 and residential uses further east. Between State Route 99 and El Monte Avenue, views of the project corridor from State Route 32 are narrow, delimited by mature roadside landscaping adjacent to commercial parcels and rear yard fences and landscaping associated with residential development. East of El Monte Avenue, views of the project corridor from State Route 32 are expansive, encompassing primarily undeveloped grasslands and scattered trees, with one area of residential development to the north (Figure 5). Views of the project corridor from State Route 99 encompass the highway ramps, the park and ride lots, and adjacent businesses. These views are generally fleeting as motorists focus on entering or exiting traffic, with an orientation toward their destination. Views of the project corridor from adjacent residential developments are generally obscured by rear yard fencing and landscaping. However, two corner units of the Yosemite Terrace Apartments located in the northwest quadrant of the Yosemite Road/State Route 32 intersection, have expansive views that extend south across State Route 32 into undeveloped grasslands. Overall, the project corridor reflects the visual character of an area in transition, with both the rural character of expansive grasslands and the definitively urban character of adjacent residential and commercial development. The project corridor is not designated as a state scenic highway or local scenic roadway.

A tree survey conducted for the project identified 344 trees within the project limits including:

- 62 Chinese pistache trees (4 inches DBH to 32 inches DBH)
- 2 elm trees (13 inches DBH and 18 inches DBH)
- 9 poplar trees (4 inches DBH to 17 inches DBH)
- 70 redwood trees (10 inches DBH to 41 inches DBH [25 trees have a DBH of 30 inches or greater])

- 172 Valley oaks (1 inch DBH to 38 dbh [5 trees have a DBH of 30 inches or greater)

- 5 walnut trees (15 inches DBH to 37 inches DBH)

Chico General Plan. The Community Design Element, the Land Use Element and the Transportation Element of the City of Chico General Plan all contain policies applicable to the proposed project. The guiding principles of the Community Design Element, which serve as the basis for Community Design Element policies, recognizes the importance of strengthening the visual and physical connection of the City to the surrounding landscape, as well as balancing the needs of transportation, circulation and parking with the role of streets in defining a sense of place. Community Design Element Policies CD-G-4 and CD-G-5 direct the City to consider emphasizing key City entrances by maintaining and enhancing the character of entry points through the treatment of landscape and built elements in the area, and minimizing the intrusion of Highway 99 and its interchanges on the visual character of the City by completing landscape improvements along the highway. Additionally, Community Design Element Policy CD-G-6 directs the City to consider streetscape improvements, planting, and other treatments within the limits of existing development and right-of-way along the City's major linear corridors, which includes State Route 32.

Land Use Element Policy LU-I-76 and Transportation Element Policy T-I-43 direct the City to consider designating State Route 32 east of El Monte as a local scenic highway and to develop standards for setbacks, landscaping and development design to enhance views from this roadway. As of October 2006, the City has not designated State Route 32 east of El Monte as a local scenic roadway.

Noise Element Policies N-I-13 and N-I-14 direct the City to consider noise attenuation programs that avoid the use of visible sound walls. Where noise barriers are necessary to attenuate noise, Policy N-I-13 requires landscaping to reduce negative visual impacts to the community.

2. Environmental Checklist

AESTHETICS – Would the project or its related activities:	**Potentially significant impact**	**Less than significant impact with mitigation incorporated**	**Less than significant impact**	**No impact**
1) Have a substantial adverse effect on a scenic vista, including scenic roadways as defined in the General Plan, or Federal Wild and Scenic River (e.g., Big Chico Creek)?				X

2) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
3) Affect land preserved under a scenic easement or contract?				X
4) Substantially degrade the existing visual character or the quality of the site and its surroundings including the scenic quality of the foothills as addressed in the General Plan?	X			
5) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

3. Discussion

Implementation of the proposed project involves structural improvements such as pavement, signage, and the construction of a new bridge over Dead Horse Slough. Street lighting is proposed at the intersections. Construction of the project would require the removal of existing vegetation within the state right-of-way. Although the proposed project does not include landscaping, it does not preclude future streetscape improvement projects. Based on preliminary design, the project would require removal of extensive volunteer vegetation and mature trees on the north and south side of the road between Fir Street and El Monte Avenue. The City, however, requested and received approval of an advisory design exception from Caltrans that would allow some of the existing large trees near Fir Street to remain after construction.

Numerous trees would need to be removed to construct the project. As shown in Table 2, the number of trees to be removed differs depending on some future decisions about sound walls. If no sound walls are built, the number of trees removed would be approximately 48. If sound walls are constructed in the proposed locations, the number of trees removed would increase to 132.

Table 2. Estimated Tree Removal

Project Feature with and without sound walls		Trees to be removed				
			By Species			
		Total	Valley Oak	Redwood	Chinese Pistache	Other
No Design Exception	Trees removed within Clear Recovery Zone – no sound wall	**67**	26	15	16	10
	Trees removed within Clear Recovery Zone – with sound wall	**147**	79	15	30	23
With Design Exception	Trees removed within modified 17-foot Clear Recovery Zone – no sound wall	**48**	19	12	9	8
	Trees removed within modified 17-foot Clear Recovery Zone – with sound wall	**132**	74	12	25	21

Notes:

1. Clear recovery zone is 20 feet from the edge of traveled way (ETW)
2. Sound wall construction impacts set at 15 feet from face of sound wall; 18 feet from existing right of way
3. Trees on private property are assumed to remain
4. Design exception – modified clear recovery zone: 17 feet from ETW

Note: the design exception has been approved by Caltrans.

The noise analysis indicates that sound walls are required to reduce noise impacts to a less-than-significant level at various locations along the north and south sides of State Route 32 between Fir Street and El Monte Avenue, and at the east end of the project between Bruce Road and Yosemite Drive. Chico General Plan Policy N-I-13 requires barriers (sound walls) to be landscaped to reduce negative visual impacts to the community.

Removal of trees between Fir Street and El Monte Avenue would increase the visibility of development, with views of the project corridor from State Route 32 having a more defined urban character adjacent to developed uses. Additionally, the removal of tall trees within the project right-of-way would slightly alter adjacent residential rear yard views (Between Fir Street and El Monte Avenue) by removing a natural background component of these views. Figure 6 is an index map identifying locations in the project area where photographs were taken and photosimulations prepared. Figures 7 through 11 present 'before' and 'after' photographs. The 'before' photographs show existing conditions; the 'after' photographs are computer-generated photographs that show the anticipated conditions if sound walls are constructed with the project. The sound wall

heights throughout the project limits would vary from 8 feet to 12 feet high (the sound walls need to be 6 feet higher than the height of the future edge of traveled way). Additionally, since City policies require landscaping of sound walls, the photographs show an artistic rendering of landscaping along the sound walls.

If mature trees within the right-of-way are replaced with sound walls between Fir Street and El Monte Avenue, the introduction of an extensive hardscape feature would substantially heighten the urban character of views from State Route 32 (Figure 7). Since the sound wall height is required to be 6 feet higher than the height of the future roadway, at this location it is anticipated that the sound wall would be 12 feet high with approximately 6 feet of sound wall visible above the fence in adjacent rear yard views, altering the natural character of the background components of these views (Figure 8).

At the Yosemite Drive/State Route 32 intersection, the corner two story unit of this apartment complex is situated approximately 11 feet below the grade of adjacent State Route 32. An approximately 4-foot high retaining wall currently borders the edge of the corner unit. Construction of a sound wall at the edge of the right-of-way at this location would require an approximately 10-foot high wall, all of which would be visible from the corner first and second-story units. At this location, sound walls constructed along the State Route 32 right-of-way would restrict currently expansive views of undeveloped land to the south and southeast from primarily the second floor unit and would likely contribute to interior shading of the first floor unit (Figure 11). The visual changes would be similar for units of Sierra Manor Apartments and Sierra Sunrise Village Apartments that front State Route 32.

4. Impacts

The proposed project would not adversely affect a scenic vista, views of a federally designated Wild and Scenic River or scenic resources associated with a state or locally designated scenic roadway. The proposed project would not affect land preserved under a scenic easement or contract. The construction of street lights would not be a source of significant lighting or glare to nearby land uses.

The proposed project has the potential to significantly alter the visual character and quality of views from State Route 32 and the rear yards of residences adjacent to State Route 32 between Fir Street and El Monte Avenue through the removal of a substantial extent of mature vegetation and the potential installation of sound walls.

The installation of sound walls along the north side of State Route 32 west of Yosemite Drive would essentially limit southern views of apartment units that front the roadway; replacing views of open grassland across State Route 32 with views of a block masonry wall. Additionally, the installation of a sound wall at this location may substantially contribute to the interior shading of residential units that front State Route 32.

Aesthetic impacts are considered potentially significant; mitigation is identified below.

Aesthetics Mitigation Measures

1. *The City shall request an Advisory Design Exception from Caltrans to retain large existing trees located more than 17 feet from edge of traveled way (7 feet from edge of pavement) along the project corridor within the state right-of-way.* Note: the design exception was recently approved by Caltrans.

2. *Consistent with Caltrans' policies, the City shall minimize vegetation removal by requiring the construction contractor to prune vegetation and limb overhanging trees to the maximum extent practicable (prune rather than remove) throughout the project corridor.*

3. *In coordination with Caltrans, the City shall develop and implement a landscape plan for the project extent of State Route 32 to include vegetation planting adjacent to the roadway limits in areas where extensive vegetation removal is required. The landscape plan shall be developed by a licensed landscape architect and be designed consistent with all applicable City of Chico General Plan principles and polices and Caltrans standards related to the location, type, size, and extent of woody vegetation permitted within a state right-of-way. Caltrans and the City shall establish a maintenance agreement, as necessary, for the long-term maintenance of the landscaping. The landscape plan will be prepared in consultation with biologists who are familiar with the biological resources along the project corridor; see biological resources mitigation measures.*

4. *If sound walls are constructed as part of the proposed project, the City, as required by City of Chico General Plan Policy N-I-13, shall landscape the State Route 32 face of all sound walls. The City, in coordination with Caltrans, shall develop and implement a sound wall landscape plan meeting Caltrans policies related to location, size, and type permitted within State right-of-way focused on softening the visual appearance and providing visual variety and a natural component to the sound walls. The sound wall landscape plan shall be developed by a licensed landscape architect and shall include maintenance and or replacement planting sufficient to achieve at least 75 percent survival of all plantings 5 years following installation.*

5. *The City shall provide each homeowner with rear yards abutting the State Route 32 Widening Project with information on free and/or low cost tree and landscaping programs, including but not limited to, state and federal forest service tree planting programs, local energy purveyor shade tree programs, native plant programs, and other such programs that may be locally available, such that residents affected by the extensive vegetation removal may, at their own cost and discretion, effectively enhance their rear yard landscaping to offset either vegetation removal or the proposed installation of sound walls.*

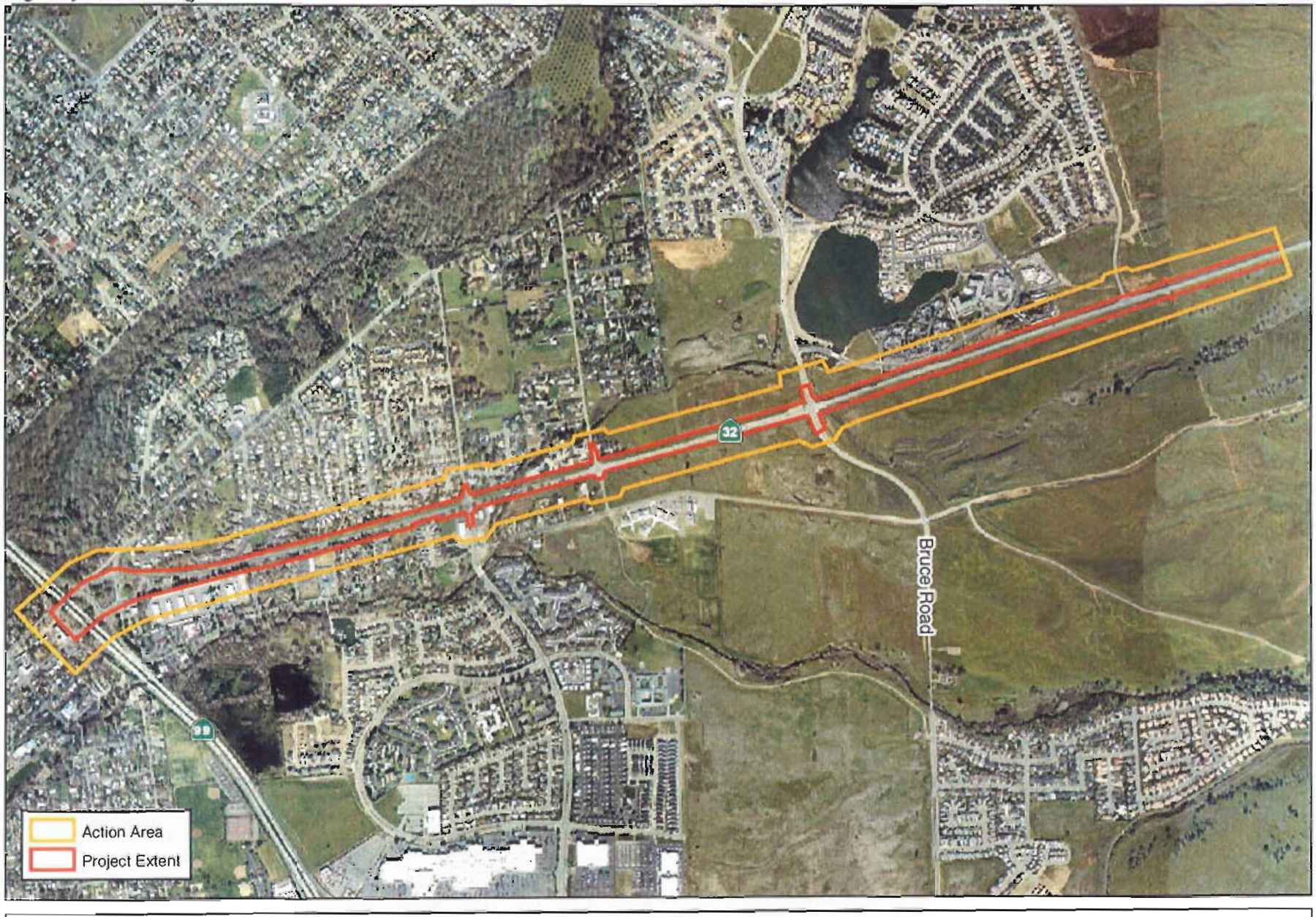

Highway 32 Widening
Action Area
Bruce Road
32
99
Action Area
Project Extent
City of Chico, Butte County, CA.
Map Date: Nov. 11, 2005.
0 500 1,000 1,500 2,000 Feet
GALLAWAY
CONSULTING, INC.

Figure 5.

LEGEND

EXISTING RIGHT OF WAY (PROPERTY LINE)

① PHOTOSIMULATION LOCATION

Figure 6.

PHOTOSIMULATION INDEX MAP

MARK THOMAS & COMPANY, INC.
Providing Engineering, Surveying and Planning Services

10-16-06

SHEET NUMBER	TOTAL SHEETS
1	1

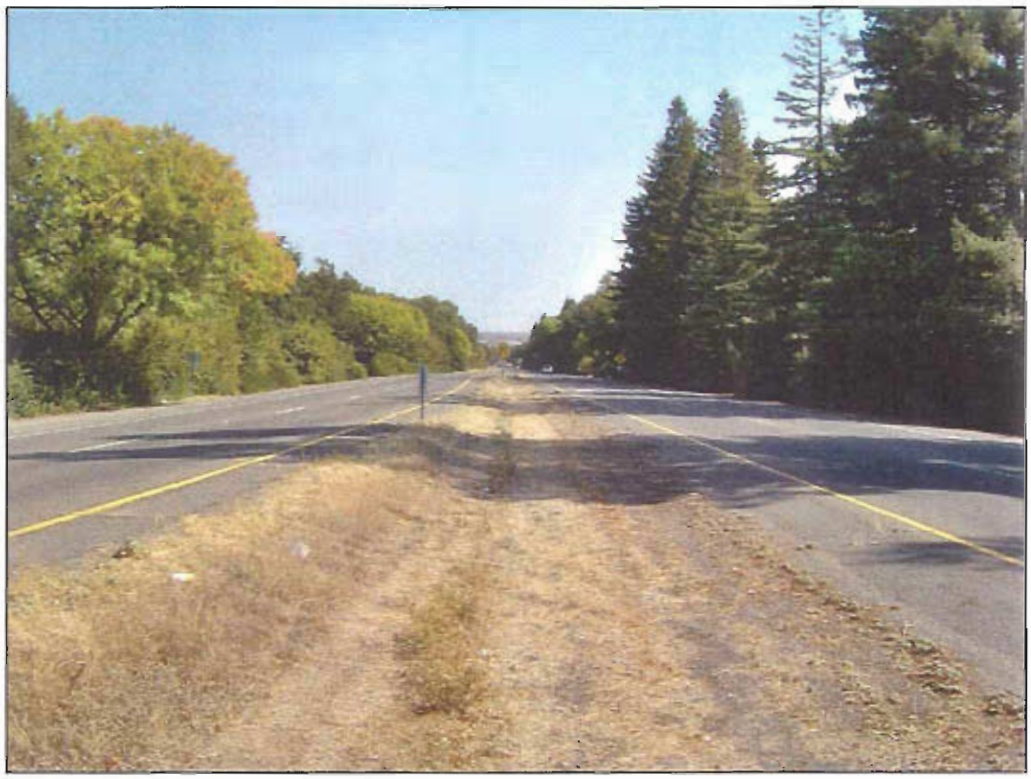
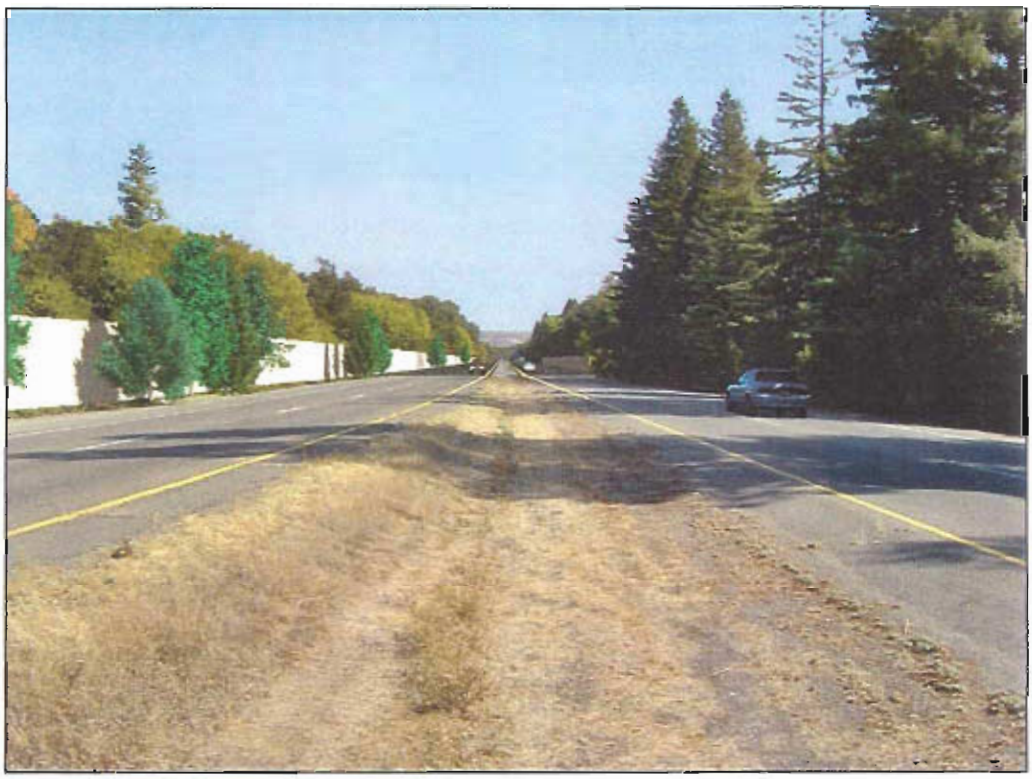
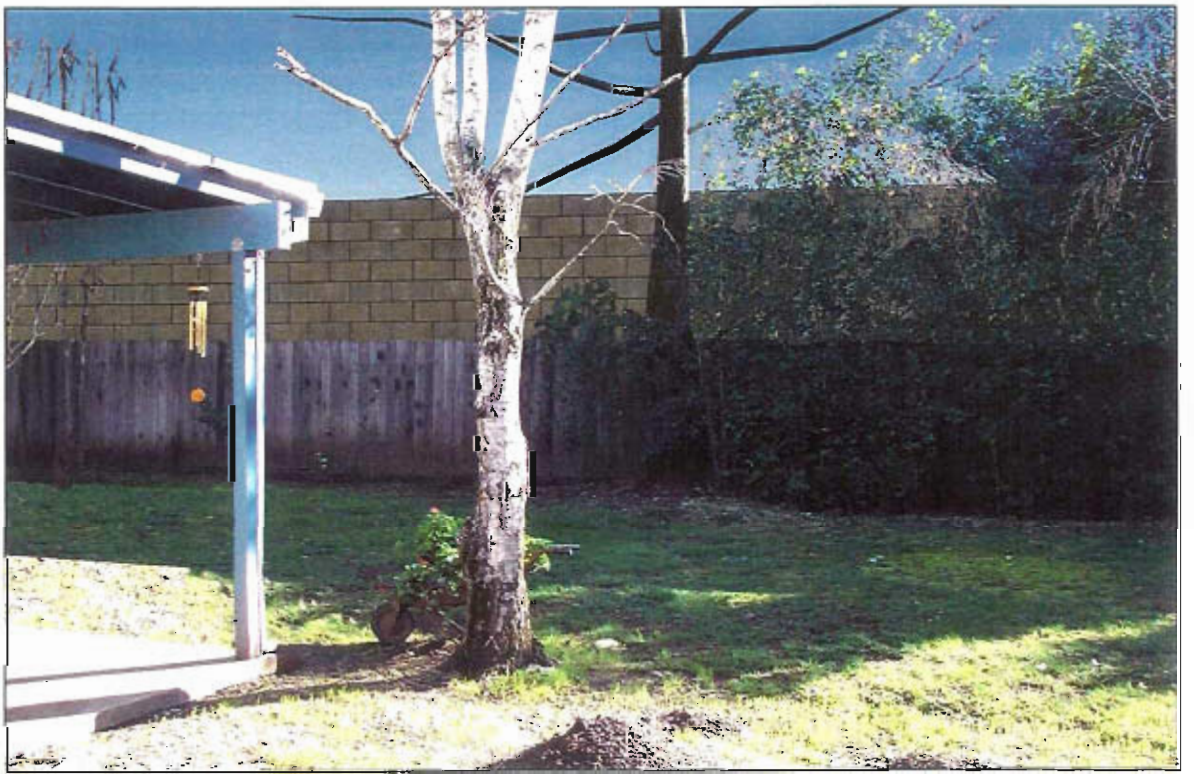


Figure 7. Existing conditions (January 2006) looking east along State Route 32 from the road median just east of the park-and-ride lot.



This computer-generated photosimulation (#1) is an artistic representation of the proposed project plus sound walls plus landscaping adjacent to the sound walls. The sound walls would be constructed on the State right-of-way boundary and have a height extending 6 feet above the future roadway elevation. Sound wall design is based on a design example provided by the City of Chico and is subject to change based on final project design. This rendering approximates the appearance of vegetation after 5 years.

Figure 8. Existing conditions (January 2006) looking south toward SR 32 from a residential rear yard on Merle Court.



This computer-generated photosimulation (#2) is an artistic representation of the proposed project plus sound walls. The height of the sound wall needs to be 6 feet above the height of the pavement. The sound wall would be visible in adjacent rear yard views.

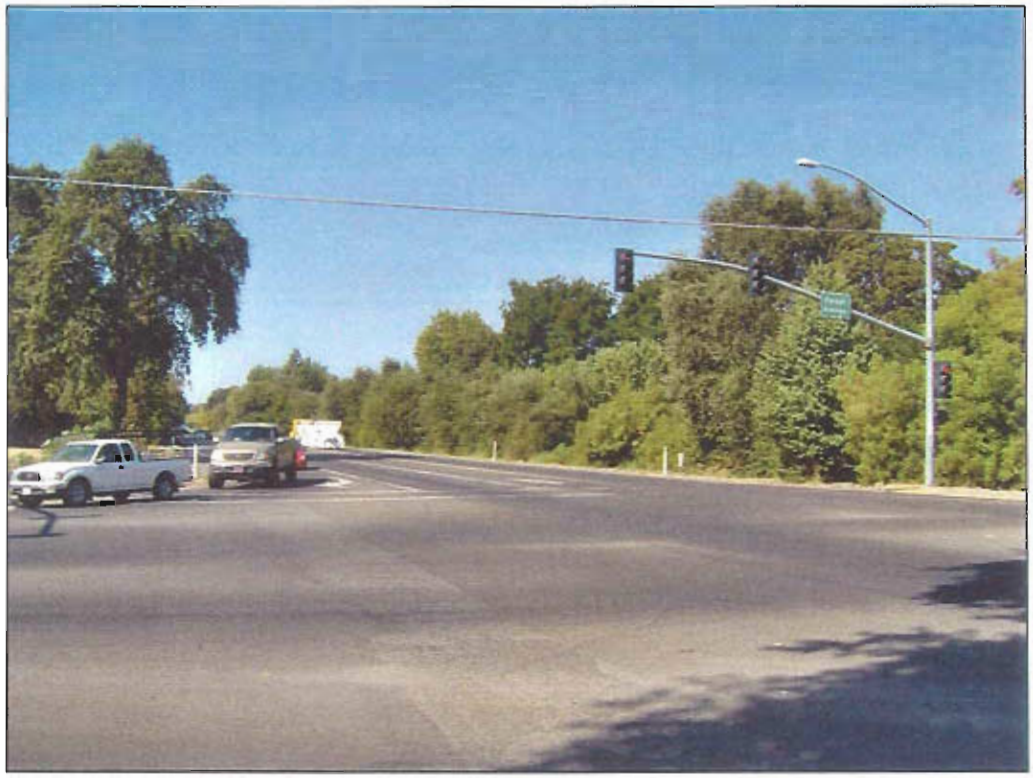
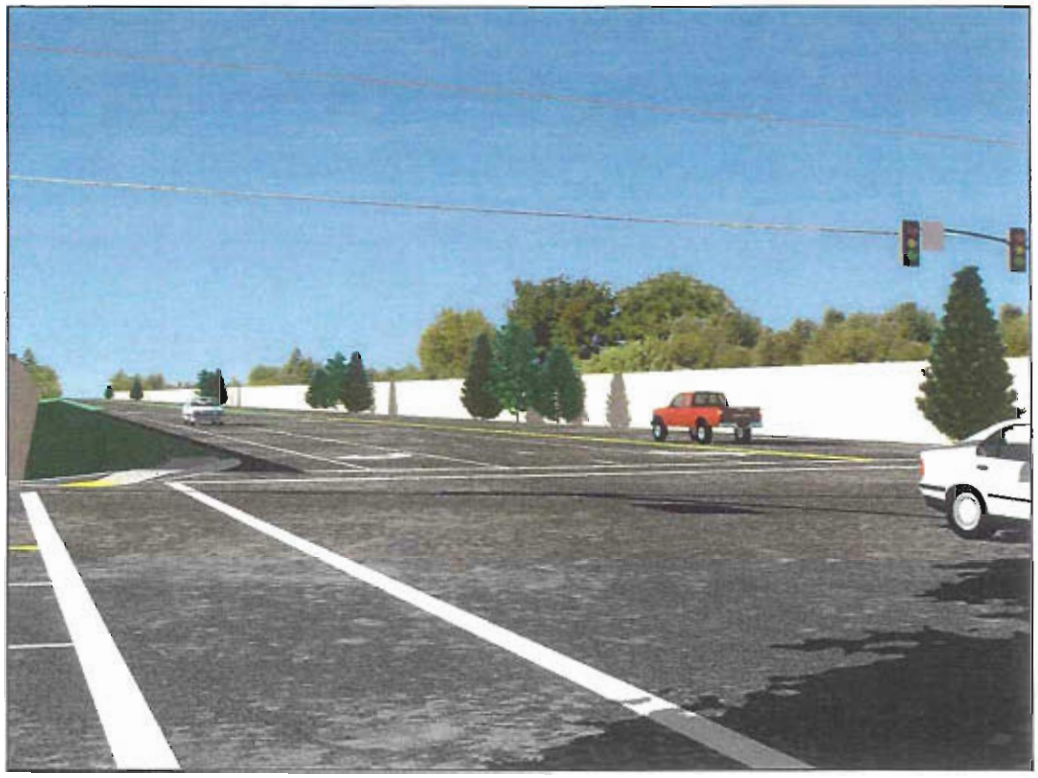


Figure 9. Existing conditions (January 2006) looking west along State Route 32 at the Forest Avenue intersection.



This computer-generated photosimulation (#3) is an artistic representation of the proposed project plus sound walls plus landscaping. Sound wall design is based on a design example provided by the City of Chico and is subject to change based on final project design. This rendering approximates the appearance of vegetation after 5 years.

Figure 10. Existing conditions (January 2006) looking northeast at the Forest Avenue intersection.

This computer-generated photosimulation (#4) is an artistic representation of the proposed project plus sound walls plus landscaping. Sound wall design is based on a design example provided by the City of Chico and is subject to change based on final project design. This rendering approximates the appearance of vegetation after 5 years.

Figure 11. Existing conditions (January 2006) looking southwest adjacent to the corner unit of the Yosemite Terrace Apartments located in the northwest quadrant of the Yosemite Drive/State Route 32 intersection.

This computer-generated photosimulation (#5) is an artistic representation of the proposed project plus sound walls. An approximately 10-foot high sound wall would be required in this location.

B. AIR QUALITY

The following discussion is based on the Air Quality Report prepared for the project.

1. Environmental Setting

The project area is subject to air quality planning programs established by the federal Clean Air Act of 1970 and the California Clean Air Act of 1988. Both of these acts provide for the protection of public health, timetables for achieving and maintaining ambient standards and a requirement to develop a plan to assist in guiding air quality improvement efforts of state and local agencies. National and state ambient air quality standards have been identified for a number of criteria pollutants which include ozone (O3), carbon monoxide (CO), nitrogen oxides (NOX), sulfur dioxide (SO2), and particulate matter, both PM10 and PM2.5, to list a few. A complete list of all the federal and state criteria pollutants is provided in the Air Quality Report prepared for the project.

Transportation projects receiving federal funding or approval must be found to conform to the current State Implementation Plan (SIP). Each region in the state submits its emissions budgets and strategies for reducing air emissions or air pollutants that are above national ambient air quality standards to the California Air Resources Board (ARB), which prepares the SIP.

Transportation planning is coordinated with this "conformity" process. The Regional Transportation Plan (RTP) contains a long-range plan for transportation projects and emissions budgets for those projects within jurisdiction of a local regional transportation agency (e.g., Butte County Association of Governments). The RTP must conform to the SIP by having an emissions budget from its planned projects that does not exceed the emissions budget in the SIP. For an individual project to conform to the SIP, it must be contained in a conforming RTP.

The project lies within the Northern Sacramento Valley Air Basin (NSVAB) which includes Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties. The Butte County Air Quality Management District (AQMD) regulates air quality in Butte County.

The major criteria pollutants of concern in the Northern Sacramento Valley Air Basin (NSVAB) are described below.

- Ozone (O3) is the main component of photochemical smog. Ozone is not emitted directly into the air, but is formed through a series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROG) and nitrogen oxides (NOX). The time period required for ozone formation allows the reacting compounds to spread over a large area, producing a regional pollution problem. Ozone problems are the cumulative result of regional development patterns,

rather than the result of a few significant emission sources. This area is classified non-attainment for both the federal and state ambient air quality standards for this pollutant.

- Nitrogen dioxide (NO2) is a reddish brown gas that is produced by fuel combustion. Nitric oxide (NO), a colorless gas, combines with NO2 to form nitrogen oxide (NOX), which contributes to ozone (smog) formation. This area is classified attainment for both the federal and state ambient air quality standards for this pollutant.

- Particulate Matter Less than 10 Microns in Diameter (PM10) and Particulate Matter Less than 2.5 Microns in Diameter (PM2.5) emissions are generated by a variety of sources. The primary sources of PM10 and PM2.5 in the NSVAB are entrained road dust, farming operations, and open burning of agricultural and residential waste. Traffic generates PM10 and PM2.5 emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. This area is classified attainment for federal ambient air quality standards and non-attainment for state ambient air quality standards of these pollutants.

- Carbon monoxide (CO) is an odorless, colorless gas, and is the product of incomplete combustion. The primary sources of CO are motor vehicles. CO tends to dissipate rapidly into the atmosphere. Consequently, violations of the CO standards are generally limited to major intersections during peak hour traffic conditions. This area is classified attainment for both the federal and state ambient air quality standards for this pollutant.

- Sulfur dioxide (SO2) can damage and irritate lung tissues, accelerate the corrosion of materials and harm vegetation. SO2 is a colorless gas created by combustion of sulfur-containing fossil fuels. This area is classified attainment for both the federal and state ambient air quality standards for this pollutant.

- Diesel exhaust is classified as a mobile source air toxic (MSAT). This is a particular issue on facilities with large volumes of truck traffic. It is known that exposure to diesel exhaust over time can have negative effects on health. Criteria and quantitative methods for assessing diesel impacts are not yet developed at the regulatory level. However, it is important to document any "sensitive land uses" in the "vicinity" of the project.

    - "Sensitive Land Uses" are schools, medical centers and similar health care facilities, child-care facilities, parks and playgrounds.

    - Project "vicinity" is 500 feet from the edge of the nearest traveled lane.

Within the project limits there are no parks, playgrounds or medical centers within 500 feet of the project. There is one Assisted Living Facility, Community Care Options, located within 500 feet of the travel way at 1530 Humboldt Road.

This project is in the category of Exempt projects or projects with No Meaningful Potential MSAT Effects. The project will have no meaningful impacts on traffic volumes or vehicle mix and the average daily traffic (ADT) is below 150,000 with 5% trucks.

High temperatures and low humidity typically characterize summer conditions in the NSVAB, with prevailing winds from the south. Summer temperatures average approximately 90 degrees F during the day and 50 degrees F at night.

Occasional rainstorms interspersed with stagnant and sometimes foggy weather characterize winter conditions. Winter daytime temperatures average in the low 50s and nighttime temperatures average in the upper 30s. During winter, north winds become more frequent, but winds from the south predominate. Rainfall occurs mainly from late October to early May, averaging 25 inches per year, but varies significantly each year.

In addition to prevailing wind patterns that control the rate of dispersion of local pollutant emissions, the NSVAB counties experience two types of inversions that affect air quality. The first type of inversion layer contributes to photochemical smog problems by confining pollution to a shallow layer near the ground. This occurs in the summer, when sinking air forms a "lid" over the region. The second type of inversion occurs when the air near the ground cools while the air aloft remains warm. These inversions occur during winter nights and can cause localized air pollution "hot spots" near emission sources because of poor dispersion.

Pollution potential in the area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily PM2.5 or PM10) and ground-level ozone are of most concern to regional air quality officials. Local carbon monoxide "hot spots" are important to a lesser extent.

Meteorological conditions such as wind speed, atmospheric stability and mixing height affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while changes in meteorological conditions, such as inversions, cause short-term variations. Inversions have a great influence on the rate of dispersion of air pollutants.

The Northern Sacramento Valley region exceeds California ambient air quality standards for ground-level ozone and PM10. On occasion the region exceeds the federal standard for ozone.

Under the federal Clean Air Act, the Chico area is designated as non-attainment area for the 8-hour ozone standard. The area is considered in attainment (levels are below standards) or unclassified for all other pollutants regulated by the federal Clean Air Act. Under the California Clean Air Act, the NSVAB is considered "moderate" nonattainment for the 1-hour state ozone standard and nonattainment for both PM10 and PM2.5 standards. The area is considered in attainment (levels are below standards) or unclassified for all other pollutants regulated by the California Clean Air Act.

2. Environmental Checklist

AIR QUALITY – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Conflict with or obstruct implementation of the applicable air quality plan (e.g., Northern Sacramento Valley Air Basin 2003 Air Quality Attainment Plan, Chico Urban Area CO Attainment Plan, and Butte County Air Quality Management District Indirect Source Review Guidelines)?			X	
2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
4) Expose sensitive receptors to substantial pollutant concentrations?			X	
5) Create objectionable odors affecting a substantial number of people?			X	

3. Impacts

Construction Impacts. Construction is a source of dust emissions that can have temporary impacts on local air quality (i.e., exceed state or national air quality standards for PM10). Construction emissions would result from earthmoving (fugitive dust) and heavy equipment use (vehicle exhaust). These emissions would be generated from land clearing, ground excavation, cut and fill operations, and the construction of the project facilities. Dust emissions would vary from day to day depending on the level of activity, the specific operations, and the prevailing weather.

In addition to particulate emissions from earth moving, combustion emissions from fuel-powered construction equipment may create a temporary impact on local air quality.

Butte County AQMD CEQA Guidelines do not provide a numerical threshold of significance for these emissions. Instead, the emphasis is on mitigation of this type of temporary impact. Butte County AQMD Rule 205 specifies mitigation measures for controlling fugitive dust emissions. Mitigation measures for this impact are described below.

Traffic-related Carbon Monoxide Impacts. Project impacts from local traffic were evaluated by modeling roadside CO concentrations. The modeling was conducted for intersections on State Route 32 where there would be a combination of the highest traffic volumes, greatest project traffic contribution, and highest level of congestion. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of CO. Of the two standards for CO, the 8-hour standard is the more stringent. Therefore, this analysis evaluated impacts against the 8-hour standard.

Carbon monoxide concentrations were modeled using traffic volumes, emissions, meteorology, and the roadway/receptor geometry. This analysis used the Caline4 Line-Source dispersion model and procedures developed by Caltrans and approved by the EPA. For this assessment, meteorological conditions most conducive for high carbon monoxide concentrations in the Central Valley, PM peak-hour traffic conditions, and emission factors generated by the ARB emission factor model (EMFAC2002) were used as input. Conditions included wind speed of 0.5 meters per second, "F" stability, worst-case wind angle search, sigma theta (wind fluctuation) of 10°, and temperature of 40°F. Receptors were placed near the edge of the roadway, regardless of the land use. Fehr & Peers Transportation Consultants provided forecasted traffic conditions for the existing and future build conditions. Emission factors were adjusted (based on modeling guidelines) to reflect the level of congestion. The modeling assumptions are used to predict the worst-case carbon monoxide concentrations that could be associated with the project. Modeled concentrations were added to background levels (average of annual maximum level measured in Chico over the last three years) to predict total carbon monoxide concentrations. The 8-hour carbon monoxide background level is 3.4 ppm.

This assessment was conducted for existing conditions in 2005 and future build conditions in 2030. The results indicate that current CO concentrations are below ambient air quality standards and that future levels with the project would remain below the standards. The predicted decrease in future levels is due to vehicle fleet turnover, with newer (less polluting) vehicles replacing older vehicles. No mitigation is required for this impact.

Regional Cumulative Impacts. Operation of the proposed project would result in regional emissions of ozone precursors (nitrogen oxides and reactive gases), carbon monoxide, and inhalable particulate matter (PM10) that could have a cumulative effect with other pollutant sources in the area. These emissions would normally be addressed and accounted for in the regional analysis that is performed for a proposed project's

inclusion in the RTP for Butte County. This project was not in the existing RTP that was found to conform to the SIP. Mitigation for this impact is described below.

Project Conformity to the State Implementation Plan. Section 176(c) of the Clean Air Act Amendments (CAAA) require that Federally funded or approved transportation plans, programs, and projects conform to the State Implementation Plan, which contains the controls necessary for the State to meet the National Ambient Air Quality Standards. The EPA promulgated 40 Code of Federal Regulations Parts 50 and 93 to implement Section 176 (c) of the CAAA. The Butte County RTP is a federally approved transportation plan that conforms to the State Implementation Plan.

The California ARB has determined that the Butte County RTP emission projections are consistent with the region's emissions budget. The project design and scope evaluated in this analysis were not included in the RTP that was found to conform with the SIP. Hot spot modeling of CO concentrations from project traffic indicate that CO concentrations attributable to the proposed project would not increase the number or severity of exceedances of the National Ambient Air Quality Standards. Under 40 CFR Part 93, the proposed project is found not to be in conformance with the SIP. Mitigation for this impact is described below.

Mobile Source Air Toxics. The purpose of this project is to accommodate future traffic volumes and relieve congestion, and lower the accident rate by constructing one additional travel lane in each direction and adding turn lanes. The project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in air emissions impacts relative to the no-build alternative. As such, the City has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants. This project has not been linked with any special Mobile Source Air Toxics (MSAT) concerns; consequently, this project is exempt from analysis for MSATs.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in vehicle miles traveled (VMT), the FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project. No mitigation is required.

Air Quality Mitigation Measures.

1. *The City and the Butte County AQMD require measures to minimize fugitive dust during construction activities. The following construction dust and equipment exhaust emissions measures shall be required, as appropriate, during all phases of construction work.*

a. *The contractor shall prepare and submit a fugitive dust control plan to the City and Butte County AQMD acknowledging responsibility for implementing the fugitive dust control mitigation measures. The plan will be submitted to the district for approval 30 days prior to the commencement of construction. The plan will include the following measures.*

   i. *The contractor shall water all active construction sites at least twice daily. Frequency shall be based on the type of operation, soil, and wind exposure. Water will be applied at rates that do not result in runoff from the construction area.*

   ii. *The contractor shall apply chemical soil stabilizers (compatible with adjacent vernal pools and wetlands) to inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). Chemical soil stabilizers will be applied at rates that do not result in runoff off the construction area.*

   iii. *The contractor shall limit on-site construction vehicle speeds to 15 mph on unpaved areas.*

   iv. *The contractor shall suspend land clearing, grading, earthmoving, or excavation activities when winds exceed 20 mph averaged over 1 hour.*

   v. *The contractor shall apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations, and the area shall be hydroseeded.*

   vi. *The contractor shall hydroseed all disturbed areas as soon as possible.*

   vii. *The contractor shall cover all inactive soil storage piles.*

   viii. *During initial grading, earthmoving, or site preparation, the contractor may be required to construct a paved (or dust-palliative treated) apron, at least 100 feet in length, onto the project site from adjacent staging areas, if applicable.*

   ix. *The contractor shall sweep or wash paved streets adjacent to the project site at the end of each day as necessary to remove excessive accumulations of silt and/or mud which may have accumulated as a result of construction activities.*

x. *The contractor shall post a publicly visible sign, listing the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 24 hours. The telephone number of Butte County AQMD shall also be visible to ensure compliance with Butte County AQMD Rule 201 and 205 (Nuisance and Fugitive Dust Emissions).*

xi. *The contractor will provide temporary traffic control as appropriate during all phases of construction to improve traffic flow.*

xii. *The contractor will maintain equipment engines in good condition and in proper tune according to manufacturer's specifications.*

xiii. *The contractor shall not let construction equipment idle for long periods (over 15 minutes).*

xiv. *The contractor shall schedule construction activities that direct traffic flow to off-peak hours as much as practicable.*

xv. *The contractor shall minimize the area disturbed by construction at all times.*

b. *The contractor shall implement the following measures to reduce diesel emissions during construction.*

i. *Diesel equipment idling shall be minimized.*

ii. *Diesel equipment shall be located away from sensitive receptors.*

iii. *As feasible, newer, cleaner diesel equipment will be used, rather than older equipment.*

2. *The City of Chico shall work with the Butte County Association of Governments to ensure that the project is included in the Regional Transportation Plan and other air quality conformity documents prior to approval of the environmental document.*

C. BIOLOGICAL RESOURCES

1. Environmental Setting

The following information on biological resources within the project area is based on biological resource reports prepared by Gallaway Consulting, Inc. (Gallaway). The reports were prepared to determine the presence of sensitive or biologically important

natural resources within the project area and whether or not these resources would be impacted by the proposed project.

The project extent occurs in an alluvial fan terrace comprised largely of annual grasslands that are at the base of the foothills to the east. This close proximity to the foothills plays a significant role in the soil type and various wetland communities found within and adjacent to the project extent. A large vernal pool landscape is found at the eastern end of the project route on the south side of the road. This unique landscape is also the site of special-status flora and fauna that inhabit and are dependent upon vernal pools.

The elevation for the project route begins at about elevation 225 at the west end of the project, rising gently to elevation 250 near Bruce Road, and then rising somewhat more steeply to about elevation 375 near the end of the project east of Yosemite Drive. This increase in elevation extending from west to east has a significant effect on the plant communities along the project route. The section of road between State Route 99 and El Monte Avenue remains relatively flat; and the section of State Route 32 between El Monte Avenue to just beyond Yosemite Drive begins to gradually ascend into the Sierra Nevada foothills. Vernal and wetland features are located between El Monte Avenue to just beyond Yosemite Drive. Dead Horse Slough meanders through the project corridor crossing State Route 32 east of Forest Avenue and again just east of Bruce Road. The land adjacent to State Route 32 between State Route 99 and El Monte Avenue has already been heavily developed. As the elevation increases eastward, the plant community changes to a drier habitat represented by valley oak savannah along the eastern portion of the project corridor.

Known populations of Butte County meadowfoam (BCM) are found both east and west of Bruce Road south of State Route 32, with one small population on the south side of State Route 32 within the project extent east of the South Fork Dead Horse Slough. The most dense and extensive occurrences are located 2 to 4 feet above the road elevation and outside the project extent.

The vegetation assemblages occurring in the project extent include Blue oak woodland and California annual grassland. Habitat types within the project extent include annual grasslands, blue oak woodland, northern hardpan vernal pool, and seasonal wetland.

Waters of the United States

A delineation of waters of the United States was conducted for the project. Prior to field investigation, personnel reviewed aerial photographs, topographic maps, and soils survey data. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Wetland Training Institute 1995).

The term "waters of the United States" is an encompassing term and includes "wetlands" and "other waters". Wetlands have been defined for regulatory purposes as follows: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.2 [b], 40 CFR 230.3). Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology).

The wetland delineation identified a total of 0.759 acre of jurisdictional features within the environmental study limit (ESL) including vernal pools and vernal swales, seasonal wetlands, fresh emergent and riparian wetlands, and other waters of the U.S. (including ephemeral and intermittent drainages). Seasonal wetlands and vernal pools occur in the eastern portion of the project corridor.

Special-Status Species

Biological surveys were conducted for the project, including protocol-level surveys for BCM during the appropriate BCM survey windows in 2004 and 2005. Prior to conducting the surveys, a list of potentially occurring special-status plant and wildlife species occurring within the ESL was created by accessing all pertinent databases, contacting appropriate state and federal personnel and reviewing pertinent file data. After analyzing the distribution and habitat requirements of listed, proposed, and candidate species, and the occurrence of habitat types within the ESL, the species listed in Tables 3 and 4 were determined to have the potential to occur in the study area. Table 3 includes vernal pool critical habitat that occurs within the project corridor. Figure 12 shows the occurrences of special status species as monitored by the California Natural Diversity Database.

Special-status species include:

1. Wildlife and plant species that are listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations 17.11 for wildlife and 50 Code of Federal Regulations 17.12 for plants; various notices in the Federal Register for proposed species);

2. Wildlife and plant species that are candidates for listing as threatened or endangered under the federal ESA (64 Federal Register 205, 57533-57547; October 25, 1999);

3. Wildlife species that are federal species of concern (these species receive no legal protection under the federal ESA and use of the term does not

CNDDB Occurrences provided by CDFG (Nov. 2003).
Critical Habitat provided by USFWS (2005).
Map Date: Aug. 10, 2006.

0 0.25 0.5 Miles

Figure 12.

necessarily mean that the species will eventually be proposed for listing as threatened or endangered but they are being monitored);

4. Species that are listed or proposed for listing by the State of California as threatened or endangered under the California ESA (California Administrative Code, Title 14, Section 670.5);

5. Wildlife species identified by DFG as species of concern;

6. Wildlife species that are designated as fully protected by DFG (California Administrative Code, Title 14, Section 670.5);

7. Plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered in California and elsewhere (Skinner and Pavlik 1994); and

8. Plant species that meet the definition of rare or endangered under CEQA (1970).

Native and Non-native Trees

A tree survey was conducted to identify trees within the project corridor that may be affected by the project. An arborist recorded native oak trees (i.e., valley oak and live oak) occurring in the survey area that were greater than 2 inches in diameter at breast height (DBH) (with the presumption they would be 4 inches DBH by construction), and recorded all other tree species 4 inches or greater in DBH as required by Caltrans guidelines. (Caltrans considers any species 4 inches or greater in DBH a tree, whereas the City of Chico requires any tree 6 inches or greater be catalogued in pre-construction surveys.) For every tree cataloged during the survey, a measurement of DBH was taken, a health score was prescribed, a canopy cover area was estimated, and the location of the tree was logged into a GPS unit.

Sensitive Natural Communities and Natural Communities of Special Concern

For this assessment, the term "sensitive natural community" or "natural community of special concern" includes those communities that, if eliminated or substantially degraded, would sustain a significant adverse impact as defined under CEQA. The DFG-identified sensitive natural communities in the Sacramento Valley include, but are not limited to, Great Valley Oak Riparian Forest, Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, Great Valley Willow Scrub and California valley oak woodland. These community-types are important as further degradation and destruction threatens populations of dependent plant and wildlife species and significantly reduces their regional distribution and viability. Natural communities of special concern include vernal pools, vernal swales, seasonal wetlands and ephemeral and intermittent drainages.

Table 3. Listed and Proposed Plant Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

COMMON NAME *Scientific Name*	Status			General Habitat Description	Habitat Present/ Absent?	Rationale
	Federal	State	CNPS			
NORTHERN VOLCANIC MUD FLOW VERNAL POOL	Critical habitat	DFG	--	These pools occur on tertiary volcanic mudflows called lahars. The pools are small, forming in irregular depressions in gently sloping surfaces.	P Critical habitat	Observed on-site
PLANTS						
RED BLUFF DWARF RUSH *Juncus eiospermus* var. *leiospermus*	--	--	1B	Moist seepages, vernally wet swales, vernal pool margins, often on Tuscan soils and basalt tablelands. 200–3,300 ft	A	Not observed during protocol level surveys
HOOVER SPURGE *Chamaesyce hooveri*	FT	--	--	This species grows as a mat on relatively barren soil; prefers large, deep vernal pools along the eastern edge of California's Central Valley.	A	Not observed during protocol level surveys
BUTTE COUNTY CALYCADENIA *Calycadenia oppositifolia*	--	LSC	4	Meadows and seeps, valley and foothill grassland	A	Not observed during protocol level surveys
BUTTE COUNTY MEADOWFOAM *Limnanthes floccossa* ssp. *californica*	FE	SE	1B	Vernally moist drainages and pools from Chico Municipal Airport southward to Shippee Road (the type locality) and the Thermalito Forebay. It has also been recorded for North Table Mountain.	P	Known to occur on-site
PINK CREAMSACS *Castilleja rubicundula* ssp. *rubicundula*	--	LSC	1B	Meadows and seeps, valley and foothill grassland	A	Not observed during protocol level surveys
AHART'S PARONYCHIA *Paronychia ahartii*	--	--	1B	Thin soils of grassy and rocky fields. 100–1,000 ft	A	Not observed during protocol level surveys
ADOBE LILY *Fritillaria pluriflora*	--	CSC	1B	Chaparral, cismontane woodland, valley and foothill grassland / often adobe	A	Not observed during protocol level surveys
BUTTE COUNTY FRITILLARY *Fritillaria eastwoodiae*	--	--	3.2	Chaparral, cismontane woodland, lower montane coniferous forest (openings)/sometimes serpentinite	A	No habitat present
BUTTE COUNTY CHECKERBLOOM *Sidalcea robusta*	--	--	1B	Chaparral, cismontane woodland	A	No habitat present
VEINY MONARDELLA *Monardella douglasii* ssp. *venosa*	--	--	1B	Chaparral, cismontane woodland, valley and foothill grassland/ heavy clay	A	No habitat present

COMMON NAME *Scientific Name*	Status			General Habitat Description	Habitat Present/ Absent?	Rationale
	Federal	State	CNPS			
BIDWELL'S KNOTWEED *Polygonum bidwelliae*	--	--	4	Chaparral, Cismontane woodland, Valley and foothill grassland.	P	Known to occur on-site

Status Explanations

FE = Federal listed Endangered
FT = Federal listed Threatened
FPT = Federal Proposed Threatened
FSC = Federal Species of Concern
FC = Federal Candidate Species

SE = State listed Endangered
ST = State listed Threatened
SPT = State Proposed Threatened
CSC = California Species of Concern
LSC = Local Species of Concern

List 1B--List 3 = CNPS Rare, Threatened or Endangered plants
A = Species Absent
HP = Habitat Present
P = Species Present

Table 4. Listed and Proposed Wildlife Species Potentially Occurring or Known to Occur in the Project Area

COMMON NAME *(Scientific Name)*	Status		General Habitat Description	Habitat Present/ Absent?	Rationale
	Federal	State			
INVERTEBRATES					
VERNAL POOL FAIRY SHRIMP *Branchinecta lynchi*	FT	--	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.	P	Known to occur within 0.5 mile of the ESL in hydrologically connected vernal pools. Assumed present.
VERNAL POOL TADPOLE SHRIMP *Lepidurus packardi*	FE	--	Tadpole inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet to the 89-acre Olcott Lake at Jepson Prairie.	P	Known to occur within 0.5 mile of the ESL in hydrologically connected vernal pools. Assumed present.
CALIFORNIA LINDERIELLA FAIRY SHRIMP *Linderiella occidentalis*	FSC	--	California fairy shrimp tend to live in large, fairly clear vernal pools and lakes. However, they can survive in clear to turbid water with pH from 6.1 to 8.5, and they have been found in very small pools. They are tolerant of water temperatures from 41° to 85° F, making them the most heat tolerant fairy shrimp in California.	P	Known to occur within 0.5 mile of the ESL in hydrologically connected vernal pools. Assumed present.
CONSERVANCY FAIRY SHRIMP *Branchinecta conservation*	FE	--	Conservancy fairy shrimp tend to live in large turbid, vernal pools with a pH between 6.8 and 7.5. They are tolerant of water temperatures from 41° F to 75.2° F.	A	Vernal pools are too shallow and small. No known occurrence within 8 miles of the ESL.
VALLEY ELDERBERRY LONGHORN BEETLE *Desmocerus californicus dimorphus*	FT	--	Within stems of blue elderberry bushes (*Sambucus mexicana*).	A	No suitable habitat
FISH					
DELTA SMELT *Hypomesus transpacificus*	FT	ST	Estuarine systems in the Sacramento-San Joaquin Delta	A	No connection to Delta
CHINNOK SALMON SPRING RUN *Oncorhynchus tshawytscha*	FT	ST	Unimpeded access to the Pacific Ocean and upstream spawning habitat	A	No connection to anadromous fisheries; not essential fish habitat

COMMON NAME *(Scientific Name)*	Status		General Habitat Description	Habitat Present/ Absent?	Rationale
	Federal	State			
CHINOOK SALMON WINTER RUN *Oncorhynchus tshawytscha*	FE	SE	Unimpeded access to the Pacific Ocean and upstream spawning habitat	A	No connection to anadromous fisheries; not essential fish habitat
CENTRAL VALLEY STEELHEAD *Oncorhynchus mykiss*	FT	--	Large freshwater streams	A	No connection to anadromous fisheries
BIRDS					
WESTERN BURROWING OWL *Athene cunicularia hypugaea*	FSC	--	Open country, golf courses, road cuts, airports.	A	Not observed during surveys
WHITE-TAILED KITE *Elanus laucurus*	FSC	CSC	Breed in lowland grasslands, agriculture, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. Believed to be resident, becoming nomadic during periods of low prey abundance.	P	Observed during surveys
OAK TITMOUSE *Baeolophus inornatus*	LSC	--	Open mixed hardwood and mixed hardwood conifer woodlands. Will forage and breed in riparian areas.	P	Not observed during surveys
SWAINSON'S HAWK *Buteo swainsoni*	--	ST	Soars over open plains and prairie. Perches on posts, banks, or stones.	P	Not observed during surveys
TRICOLORED BLACKBIRD *Agelaius tricolor*	FSC	CSC	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland blackberry or grainfields; nesting habitat must be large enough to support 50 pairs	A	No habitat present
BALD EAGLE *Haliaeetus leucocephalus*	F	SE	Extended limbs of large trees, snags, and sometimes large rocks as hunting perches, large dominant conifer trees, invariably within 1-mile of feeding area. Bald eagles have been observed in the Chico area; however, there are no known nest sites within 5 miles of the project.	A	No habitat present. Not observed during surveys
REPTILES & AMPHIBIANS					
WESTERN SPADEFOOT TOAD *Spea hammondii*	FSC	CSC	Western spadefoot toads breed from January to May in temporary pools. Water temperatures in these pools must be between 48° F and 86° F.	P	Not observed during surveys
NORTHWESTERN POND TURTLE *Clemmys marmorata marmorata*	FSC	CSC	Permanent or nearly aquatic habitats by slow moving waters with abundant aquatic vegetation.	A	No habitat present

COMMON NAME *(Scientific Name)*	Status		General Habitat Description	Habitat Present/ Absent?	Rationale
	Federal	State			
GIANT GARTER SNAKE *Thamnophis gigas*	FT	ST	Marshes, sloughs, ponds, small lakes, low gradient streams, irrigation and drainage canals, and rice fields. Permanent aquatic habitat, or seasonally flooded during the snake's active season (early-spring through mid-fall), with herbaceous wetland vegetation.	P	Not observed during field surveys
CALIFORNIA RED-LEGGED FROG *Rana aurora draytonii*	FT	CSC	Ponds and small reservoirs, but may also be found along lakeshores and in marshy areas.	A	No habitat present
MAMMALS					
SILVER-HAIRED BAT *Lasionycteris noctivagans*	--	CSC	Coniferous and/or mixed deciduous forests adjacent to ponds or other sources of water.	A	No habitat present

Status Explanations

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FSC = Federal Species of Concern
FC = Federal Candidate Species

SE = State listed Endangered
ST = State listed Threatened
SPT = State Proposed Threatened
CSC = California Species of Concern
LSC = Local Species of Concern

2. Environmental Checklist

BIOLOGICAL RESOURCES – Would the project or its related activities:	Potentially significant impact	Less than significant impact 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 in the Master Environmental Assessment (MEA) or in other local or regional plans, policies, or regulations, or by the California Department of Fish and Game 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 the MEA or in other local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, 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) Result in the fragmentation of an existing wildlife habitat, such as blue oak woodland or riparian, and an increase in the amount of edge with adjacent habitats?				X
6) Conflict with any local policies or ordinances, protecting biological resources?			X	

3. Discussion

Waters of the United States

Because of the presence of jurisdictional waters, special status species and other sensitive resources, efforts were made during preliminary design to minimize and reduce impacts to biological resources; however, due to the linear nature of the project, and the locations of the resources, it was not logistically feasible to avoid all of the biological resources.

The ESL contains fresh emergent wetlands, riparian wetlands and other waters of the U.S. Fresh emergent wetlands are those that can be defined as having emergent vegetation. Emergent vegetation consists of rooted plants that have parts extending above the water surface for at least part of the year, and is intolerant of complete

inundation over prolonged periods. Riparian vegetation is present along the banks of Dead Horse Slough and the South Fork Dead Horse Slough. There is a total of 0.759 acre of waters of the U.S., including wetlands, in the ESL. The wetland delineation has been verified by the Corps (Corps Identification Number 200501152).

Construction of the project would result in direct and indirect impacts to waters of the U.S., including wetlands. Direct impacts occur at, or very close to, the time of the project. Examples include loss of habitat or sedimentation resulting from construction activities including the movement of heavy equipment to construct the project. Indirect impacts are caused by, or result from a proposed project, occur later in time, and are reasonably certain to occur.

Special Status Species

The special status plant species in the project area is BCM. Special status animal species include vernal pool species (vernal pool fairy shrimp, vernal pool tadpole shrimp, California fairy shrimp, and western spadefoot toad), giant garter snake, nesting swallows, tree nesting raptors, and Swainson's hawk. Detailed information for each of these species is included in the Natural Environment Study and the Biological Assessment and summarized below.

Butte County Meadowfoam. Butte County meadowfoam is a federally listed endangered species; a state listed endangered species, and has a CNPS listing of 1B. BCM is found primarily in vernal swales and to a lesser extent on the margin of vernal pools. Occupied swales are inundated periodically by water from the surrounding uplands, causing the soil to become saturated. However, BCM does not persist in pools or swales that are inundated for prolonged periods or remain wet during the summer months, nor does it occur in drainages where water flows swiftly. BCM was detected on the south side of the project corridor near Bruce Road during botanical surveys conducted for the project. Implementation of the project would result in direct and indirect impacts to BCM (Figure 13).

Vernal Pool Species. Vernal pools provide habitat for several species including federally listed vernal pool fairy shrimp and tadpole shrimp, California linderiella, and western spadefoot toad. The seasonal wetlands and swales in the project area are treated as habitat for vernal pool invertebrates based on the following parameters:

- Close proximity to vernal pools (step-over habitat),
- Hydrological connection to vernal pools during flood events,
- Seasonal fluctuation of water depth, which is required for the survival of vernal pool species, and
- Potential to support vernal pool species.

Implementation of the project would result in direct and indirect impacts to habitats that support vernal pool species.

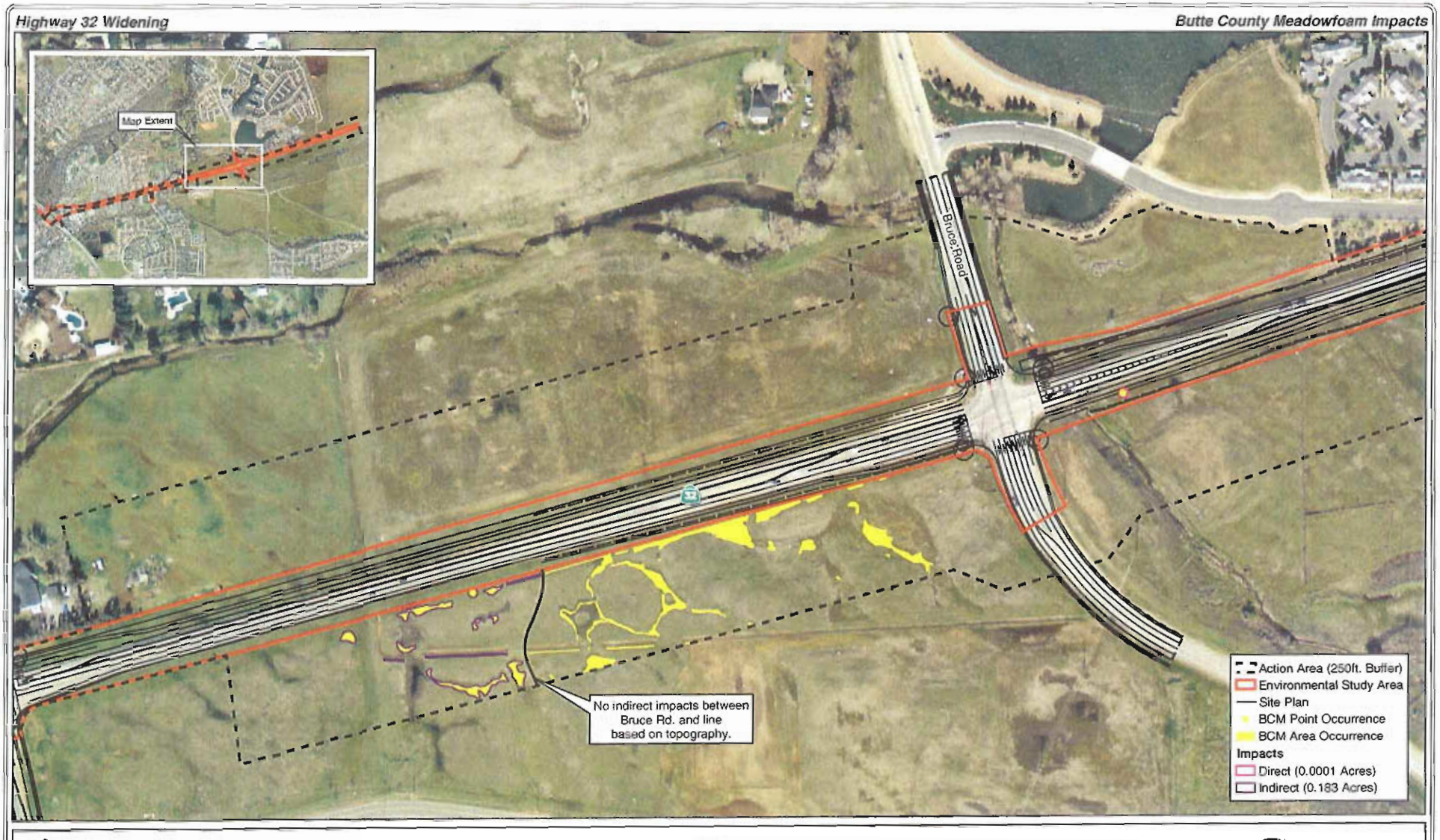


Figure 13.

GALLAWAY CONSULTING, INC.

Giant Garter Snake. Giant garter snake (GGS) is a federal and state listed threatened species. The GGS inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Primary habitat requirements consist of 1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; 3) grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge from floodwaters during the snake's dormant season. Dead Horse Slough and the South Fork Dead Horse Slough provide habitat for GGS.

Implementation of the project would result in temporary and permanent effects to aquatic and upland GGS habitat due to construction activities at Dead Horse Slough and South Fork Dead Horse Slough.

Nesting Swallows. Cliff swallows are known to nest under bridges. Swallows have been observed nesting under the bridge at Dead Horse Slough and may be nesting in the culvert that carries the South Fork Dead Horse Slough under State Route 32. Cliff swallows are not considered sensitive species, but their occupied nests and eggs are protected by both the federal and state laws, including the Migratory Bird Treaty Act and the California Fish and Game Code.

Implementation of the project would result in the potential loss of nesting swallow habitat depending on the timing of construction activities.

Nesting Tree Raptors. A white-tailed kite was observed foraging within the ESL. According to Mayer and Laudenslayer (1998-90), white-tailed kites are common to uncommon, yearlong residents in coastal and valley lowlands; rarely found away from agricultural areas. They inhabit herbaceous and open stages of most habitats mostly in cismontane California and have extended range and increased numbers in recent decades. White-tailed kites prey mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians. They forage in undisturbed, open grasslands, meadows, farmlands and emergent wetlands.

Hawks, eagles, and falcons, and owls are protected in varying degrees under California Fish and Game Code, Section 3503.5, the Migratory Bird Treaty Act, as well as state and federal ESAs and CEQA.

Implementation of the project would result in the potential loss of nesting raptor habitat depending on the number of trees removed for the project and the timing of tree removal.

Swainson's Hawk. The Swainson's hawk is a medium-sized hawk with relatively long, pointed wings and a long, square tail. Central Valley birds winter in Mexico and

Columbia. Hawks from northeastern California have been satellite-transmitter tracked to Argentina. The diet of the Swainson's hawk is varied with the California vole being the staple in the Central Valley. A variety of bird and insect species are also taken. Over 85% of Swainson's hawk territories in the Central Valley are in riparian systems adjacent to suitable foraging habitats. Swainson's hawks often nest peripherally to riparian systems of the valley as well as utilizing lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet are the most commonly used nest trees in the Central Valley. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Suitable nest sites may be found in mature riparian forest, lone trees or groves of oaks, other trees in agricultural fields, and mature roadside trees. Swainson's hawk foraging and nesting habitats exist on-site within the ESL.

Implementation of the project would result in the potential loss of Swainson's hawk nest trees and loss of Swainson's hawk foraging habitat.

Anadromous Fish. Dead Horse Slough is a tributary to Little Chico Creek. Based on discussions with staff at DFG and National Oceanic Atmospheric Administration Fisheries Service (NMFS), Little Chico Creek does not support a self-sustaining population of Central Valley steelhead and Central Valley spring-run Chinook salmon. Dead Horse Slough and Little Chico Creek are not hydrologically connected to the Sacramento River or any other anadromous streams, and it is unlikely that federally listed Central Valley spring-run Chinook salmon and Central Valley steelhead can access this stream channel and be directly or indirectly affected by the project.

Native and Non-native Trees

The tree survey identified 345 trees of varying species that were either native oaks 2 inches or greater or other tree species 4 inches or greater DBH within the ESL. The majority of trees surveyed occur between State Route 99 and Forest Avenue both north and south of State Route 32. There are 173 valley oaks located primarily along existing fence lines separating private property from the State Route 32 right-of-way, both on the north and south sides of State Route 32. Fifty-nine trees in the study area have a DBH of 24 inches or greater. There are 60 redwood trees located on the south side of State Route 32 between State Route 99 and Forest Avenue. These trees are quite large and range from 10 to 41 DBH, most are 25 inches or greater DBH. Chinese pistache occur frequently (n=62) throughout the survey area. Other species occurring less frequently in the project area are: catalpa, walnut, pecan, black locust, willow, mimosa, crab apple, magnolia, elm, ornamental plum, cork oak, poplar, and camphor.

The survey area is also highly vegetated by understory plants that were both landscape planted and which have naturally propagated on their own. These include redbud, bottlebrush, holly, toyon, privet, manzanita, and California grape. Although these

species were prevalent in the survey area, they were not more than 4 inches or greater in DBH and therefore were not mapped.

Implementation of the project would result in the removal of trees to widen the road and construct the bridge. Additional trees would be removed if the sound walls were constructed.

4. Impacts

Implementation of the project would result in the following biological impacts:

- Loss of 0.374 acre of seasonal wetlands (fresh emergent wetlands and riparian wetlands)
- Direct loss of 0.242 acre of habitat that may support federally listed vernal pool species and indirect loss of an additional 0.939 acre of habitat.
- Direct loss of 0.0001 acre (two square feet) of BCM and/or BCM suitable habitat and the indirect loss of 0.1829 acre of BCM and/or BCM suitable habitat.
- Direct impacts to 2.25 acres of aquatic and upland GGS habitat.
- Possible temporary loss of nesting cliff swallow habitat during work on Dead Horse Slough and South Fork Dead Horse Slough.
- Loss of 15.46 acres of Swainson's hawk foraging habitat.
- Possible loss of nesting raptor habitat due to tree removal.
- Possible impacts to fish species in Dead Horse Slough during construction of the bridge.
- Possible spread of invasive species during construction.

The following mitigation measures are required to reduce these impacts to a less-than-significant level.

Biological Resources Mitigation Measures. *The following measures will be reviewed and updated, as necessary, after receipt of the Section 404 permit from the U.S. Army Corps of Engineers, completion of ESA consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game, and receipt of the Section 401 water quality certification from the Regional Water Quality Control Board.*

1. *The City will obtain a Section 404 permit from the Corps to conduct activities in waters of the U.S. (jurisdictional wetlands) before construction begins.*

2. *The City will obtain a Section 401 water quality certification from the Regional Water Control Board before construction begins.*

3. *The City will obtain a Section 1602 streambed alteration agreement from the DFG before construction of Dead Horse Slough bridge or work on the South Fork Dead Horse culvert.*

4. *The contractor will be responsible for understanding and following the guidelines set forth in all the permits, including the Section 404 permit, Section 401 water quality certification, Section 1602 streambed alteration agreement, and Section 2080.1 consultation.*

5. *The City will comply with final compensation requirements and mitigation ratios for the project as determined through the Section 7 consultation between the Corps and the USFWS. The exact cost to purchase preservation credits for project-related impacts will be determined at the time of purchase. Mitigation credits will be purchased and/or a conservation area and management plan will be established prior to any ground-disturbing activities in the project area, including grading.*

6. *The City will obtain an Incidental Take Permit or Consistency Determination from the DFG under Section 2080.1 of the California Endangered Species Act as required for impacts to BCM and GGS.*

7. *The final design plans will be reviewed by the City to ensure that all conditions that are attached to the state and federal permits are implemented prior to or during construction.*

8. *The City shall include a copy of all permits within its construction documents making the contractor responsible for implementing all requirements and obligations included within all permits, including the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion and other permits. A copy of the contract documents containing the biological opinion and other permits also will be provided to the Chief of Endangered Species (Central Valley) at the U.S. Fish and Wildlife Service Sacramento office.*

9. *At least 30 days prior to initiating construction activities, the contractor shall submit the names and curriculum vitae (resume) of the biological monitor(s) for the proposed project to the City, USFWS and DFG.*

10. *The contractor will be responsible for providing worker awareness training. A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a USFWS-approved biologist for all construction workers, including contractors, prior to the commencement of*

construction activities. The program shall provide workers with information on:

a. *Their responsibilities with regard to BCM, vernal pool crustaceans, and GGS.*

b. *An overview of the life-history of these species.*

c. *The importance of irrigation canals, marshes/wetlands, and seasonally flooded areas, such as rice fields, to the GGS.*

d. *Information on take prohibitions and that unlawful take of these species or destruction of habitat is a violation of the Endangered Species Act.*

e. *Protections afforded these species under the ESA*

f. *An explanation of the relevant terms and conditions of the biological opinion.*

g. *Written documentation of the training must be submitted to the USFWS within 30 days of the completion of training. As needed, training shall be conducted in Spanish for Spanish language speakers.*

h. *The City inspector and other City staff working on the project will participate in the worker awareness training.*

11. *The contractor will be responsible for hiring a qualified biologist to inspect construction-related activities at the project site to ensure that no unauthorized take of federally-listed species or destruction of their habitat occurs. The biologist shall be available for monitoring throughout all phases of construction that may result in adverse effects to BCM, GGS, or vernal pool crustaceans.*

12. *Prior to the commencement of construction activities, a qualified biologist will be hired by the contractor to determine the location of high visibility fencing to be erected around the habitats of the federally listed species to identify and protect these Environmentally Sensitive Areas (ESAs) from encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing shall be inspected before the start of each work day and maintained by the contractor until completion of the project. The fencing may be removed only when construction of the portion of the project adjacent to the resource is completed.*

    a. *Fencing will be established 2 feet from the edge of pavement or a minimum of 50 feet from the suitable vernal pool crustacean habitat.*

b. *Fencing will be established 2 feet from the edge of pavement from the suitable BCM habitat.*

c. *At the discretion of the biologist, fencing will be established around Dead Horse Slough to minimize the amount of disturbance to the creek channel.*

13. *Signs will be posted every 100 feet along the edge of the ESAs. The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction. The signs will have the following information:*

> *"This area is habitat of federally-threatened and/or endangered species and must not be disturbed. These species are protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines and imprisonment."*

14. *The contractor will be responsible for complying with all work windows in regards to special-status species. Work windows for this project include:*

a. *Work in GGS habitat (within 200 feet of Dead Horse Slough and South Fork Dead Horse Slough) must be conducted between May 1 and October 1 (this is the active period for GGS).*

b. *During January-February of the construction year, the bridge and culvert will be inspected by a qualified biologist and all old swallow nests will be removed. Swallow nesting during the construction year will be prevented (see later mitigation measures).*

c. *Tree removal during the raptor nesting season (generally March 1 through September 15) will be avoided; tree removal during the raptor nesting season can only occur after a pre-construction raptor survey by a qualified biologist.*

d. *Construction activity within 250 feet of active raptor nests shall be minimized.*

15. *The contractor is responsible for notifying the Sacramento Fish and Wildlife Office within one (1) working day of the finding of any dead federally-listed species or any unanticipated harm to the species addressed in the Section 7 biological opinion. The Service contact person for this is the Chief, Endangered Species Division at (916) 414-6620 and the Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.*

16. *The contractor and the City must report to Caltrans, Corps and the Service immediately (within one working day) any information about take or suspected take of federally-listed species not authorized in the Section 7 biological opinion. Notification must include the date, time, and location of the incident*

or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

17. *Any contractor or employee who during routine operations and maintenance activities inadvertently kills or injures a State-listed species must immediately (within one working day) report the incident to the City, Caltrans and California Department of Fish and Game. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.*

18. *The City will compensate for direct impacts to fresh emergent wetlands and riparian habitat, and other waters of the U.S. at a ratio of 1:1 as approved by the Corps in the Section 404 permit. The City will purchase 0.374 acre of seasonal wetland mitigation credits at a wetland mitigation bank or mitigate offsite at a Corps-approved location. The estimated mitigation cost per acre is $150,000; the estimated cost to purchase 0.374 acre of mitigation is $56,100. The actual fee paid will be that in effect at the time of payment.*

19. *The City will compensate for indirect impacts to potential habitat for federally listed vernal pool tadpole and fairy shrimp by preserving additional habitat for these species at a ratio of 2:1 (2 acres preserved for every 1 acre of habitat affected). The exact amount of impact and mitigation must be confirmed after 65% preliminary design is completed. The following three preservation options are being considered by the City:*

    a. *Purchase vernal pool preservation credits from Dove Ridge Mitigation Bank. The estimated mitigation cost per acre $85,000; the estimated cost to preserve vernal pool habitat is $159,630. The actual fee paid will be that in effect at the time of payment.*

    b. *Establish vernal pool habitat preserve at the proposed Bidwell Ranch conservation area located north and east of the Sycamore Creek Diversion channel, about 2 miles north of the project. As part of the mitigation plan for the Chico Municipal Airport project, Bidwell Ranch has been proposed by the City as a suitable vernal pool conservation area; however, USFWS approval has not been obtained and a final management plan must be prepared. A final management plan would be developed by the City and approximately 50 acres of vernal pool habitat would be available for preservation credits at Bidwell Ranch after the City's existing mitigation obligations for the Chico Municipal Airport project are met.*

    c. *Establish a vernal pool habitat preserve within a USFWS pre-approved off-site location. The City would be responsible for developing a monitoring plan, placing the property in a conservation easement, and*

assuring an endowment fund would be available to appropriately manage the property in perpetuity.

20. *The City will compensate for direct effects to potential habitat for federally listed vernal pool tadpole and fairy shrimp by creating suitable habitat at a ratio of 1:1 (1 acre created for every 1 acre of habitat affected), for a total of 0.242 acre per the predetermined ratios set forth by the USFWS programmatic for Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California. The City proposes to purchase vernal pool creation credits from a USFWS-approved mitigation bank if credits become available prior to the start of construction or create features within in a USFWS approved off-site location. The estimated mitigation cost per acre is $150,000; the estimated cost is $36,300. The actual fee paid will be that in effect at the time of payment.*

21. *The City will compensate for 0.0001 acre of direct impact and 0.1829 acre of indirect impact to BCM and/or BCM suitable habitat by preserving and/or creating additional habitat for BCM, using compensation ratios previously approved by the USFWS or a combination of the following options as described below. The City will preserve directly impacted BCM habitat at a ratio of 19:1, for a total of 0.0019 acre (83 square feet), and indirectly impacted BCM habitat at a ratio of 5:1, for a total of 0.915 acre. Preservation credits must be acquired from a USFWS-approved mitigation bank or conservation area. The exact amount of impact and mitigation must be confirmed after preliminary engineering design is completed. The following three preservation options are being considered by the City:*

    a. *Purchase 0.917 acre of BCM credits (if available at the time of purchase) from Dove Ridge Mitigation Bank. The estimated cost to preserve one acre of BCM at Dove Ridge is $170,000 per acre or $183,223. The actual fee paid will be that in effect at the time of payment.*

    b. *Preserve and/or create 0.917 acre of BCM at the proposed Bidwell Ranch conservation area. As part of the mitigation plan for the nearby Chico Municipal Airport project, Bidwell Ranch has been proposed by the City as a suitable BCM conservation area; however, a final management plan must be prepared. A final management plan would be developed by the City prior to the start of construction on the State Route 32 widening.*

    c. *Establish 0.917 acre of new BCM preserve within a USFWS pre-approved off-site location. The City would be responsible for developing a monitoring plan, placing the property in a USFWS-approved conservation easement, and assuring an endowment fund would be available to protect the property in perpetuity.*

22. *Per the GGS programmatic agreement between the Corps and USFWS, the City will mitigate for 2.25 acres of direct impacts to GGS upland habitat at a ratio of 3:1. Temporary disturbances will be limited to one construction season (May to October), and on-site restoration in those areas will act as mitigation per the GGS programmatic. These calculations are based on 35% design. Once the project design has reached 65% design, the numbers will be recalculated and submitted to the USFWS to assess the required mitigation. The estimated mitigation cost per acre is $56,250 or $379,688. The actual fee paid will be that in effect at the time of payment.*

23. *The City will review the construction plans and specifications to ensure that the following terms and conditions are included for protecting GGS during construction:*

    a. *All construction activity within GGS habitat shall be conducted between May 1 and October 1. This is the active period for GGS and direct impacts are lessened, because snakes are actively moving and avoiding danger. More danger is posed to snakes during their inactive period, because they are occupying underground burrows or crevices and are more susceptible to direct effects, especially during excavation. If construction is required between October 2 and April 30, the contractor must contact the USFWS Sacramento Fish and Wildlife Office 30 days prior to these dates to determine if additional measures are necessary to minimize and avoid take.*

    b. *Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.*

    c. *Within 24 hours prior to commencement of construction activities, the site shall be inspected by a qualified biologist who is approved by the USFWS's Sacramento Office. The biologist will provide the USFWS with a field report form documenting the monitoring efforts within 24 hours of commencement of construction activities. The monitoring biologist needs to be available thereafter if a snake is encountered during construction activities. The monitoring biologist shall have the authority to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. Giant garter snakes encountered during construction activities should be allowed to move away from construction activities on their own. Capture and relocation of trapped or injured individuals can only be attempted by personnel or individuals with current USFWS recovery permits pursuant to Section 10(a)1(A) of the Act. The biologist shall be required to report any incidental take to the USFWS immediately by telephone at (916) 414-6600 and by written letter addressed to the Chief, Endangered Species Division, within one working day.*

d. *The project extent shall be re-inspected by the biologist whenever a lapse in construction activity of two weeks or greater has occurred.*

e. *Clearing of wetland vegetation will be confined to the minimal area necessary to excavate toe of bank for riprap or fill placement. Excavation of channel for removal of accumulated sediments will be accomplished by using equipment located on and operated from top of bank, with the least interference practical for emergent vegetation.*

f. *Movement of heavy equipment to and from the project extent shall be restricted to established roadways to minimize habitat disturbance.*

g. *Preserved GGS habitat shall be designated as an Environmentally Sensitive Area. The qualified biologist shall determine the need for ESA fencing for these areas.*

h. *After completion of construction activities, any temporary fill and construction debris shall be removed and, wherever feasible, disturbed areas shall be restored to pre-project conditions. Restoration work may include replanting emergent vegetation.*

i. *All wetland and upland areas created and provided for the GGS shall be protected in perpetuity by a USFWS-approved conservation easement or similarly protective covenants in the deed. The conservation easement on the mitigation habitat shall be recorded at the county recording office within 60 days of groundbreaking. The easement/deed, including a title report for the land area, shall be reviewed and approved by the USFWS prior to recording in the appropriate County Recorders Office(s). A true copy of the recorded easement/deed shall be provided to the USFWS within 30 days after recordation. Standard examples of deed restrictions and conservation easements are available from the USFWS upon request.*

24. *The City will mitigate for the loss of Swainson's hawk foraging habitat by either purchasing credits at a DFG-approved mitigation bank, purchasing or preserving Swainson's hawk foraging habitat, or by contributing to the Citywide in-lieu fund for the future purchase of Swainson's hawk habitat. The amount of mitigation will be determined in consultation with DFG and will depend on the proximity of known nest trees to the project site.* (Note: The City may ask DFG if this mitigation may be satisfied in whole or part by the BCM mitigation.) *The loss of Swainson's hawk foraging habitat is estimated at 15.46 acres with a replacement ratio of 0.75 acre mitigated for each acre lost (0.75:1). The mitigation cost per acre to contribute to the City's in-lieu fund is $3,000; the estimated cost of this mitigation is $62,438. The actual fee paid will be that in effect at the time of payment.*

25. *Work on the existing Dead Horse Slough bridge and the existing South Fork Dead Horse Slough culvert will be prohibited during the swallows nesting season (generally March 1 to August 1) if swallows are nesting on the structures. This work window can be avoided if all old swallow nests are removed from the structures prior to March 1 of the construction year and no new nests are constructed. The contractor will hire a qualified biologist to inspect the bridge and the culvert at South Fork Dead Horse Slough during January-February of the construction year, and either net the structures or install "bird tape" to prevent swallow nesting. Old nests can be removed with water and/or by knocking them down with poles and scrapers. Since swallows are strongly attracted to old nests or remnants of nests, all traces of mud should be removed. After all old nests have been removed, one of the following measures should be implemented:*

    a. *Exclusionary netting with a diameter of ¾-inch or less (high density, ultraviolet stabilized polyethylene twine) shall be installed on the underside of the structures and extended 3 to 4 inches from the sides of the structures so as to prevent swallows from gaining access.*

    b. *"Bird tape" shall be installed prior to egg laying (late Feb to early March).*

    After one of these measures are implemented, a qualified biologist will monitor the bridge and culvert structures on a regular basis (every 2-3 days, especially if construction is not ongoing) for nest starts and remove any nest starts with a pressure washer or shovel; whichever is the most convenient for the City. The biologist will make sure that no mud or other nesting material remains, because it increases the likelihood that the swallows will continue trying to build nests. The biologist will conduct regular monitoring during the swallows' nesting season (mid-February through August 15), as swallows are persistent nesters.

26. *The City will conduct a pre-construction raptor survey in April-May or 30 days prior to construction activities, to determine the presence and location of nesting raptors in the project area. Should nesting raptors be observed and impacted, appropriate mitigation or avoidance measures will be required in consultation with DFG. Direct take of active nests, eggs or birds is prohibited by the Fish and Game Code and measures must be taken to minimize disturbance. Construction should be avoided within 250 feet of active nests during nesting season from March-July.*

27. *Per City of Chico 'Standard Mitigation Measures for Sites Containing Oak Trees', all native oak trees over 6 inches in diameter at breast height (DBH) on the project site shall be preserved to the maximum extent practical. Removal of any site trees shall not be permitted without review and approval by the City of Chico Urban Forester. The 65%, 95%, and 100% design*

drawings shall depict all trees proposed for removal. Any native oak trees that are removed shall be replaced at a two to one landscaping oak tree replacement ratio along the project corridor. Prior to issuance of notice to proceed, the Contractor shall submit a tree preservation plan prepared by a qualified professional to the City Planning Services Department and Urban Forester for review and approval. The Tree Preservation Plan must meet standards outlined in the City's Tree Preservation Measures included in the City of Chico's 'Best Practices Technical Manual'. The Tree Preservation Plan shall also include the location and foliar extent of proposed pruning of tree branches, and the number, location, species, type and size of proposed replacement plantings.

28. *The contractor will implement best management practices described in the Storm Water Pollution Prevention Plan to control and prevent the spread of noxious weed infestations.*

29. *The contractor will clean construction equipment of mud and other debris before entering the construction area.*

30. *The contractor will seed all disturbed areas with certified weed-free native mixes where appropriate.*

31. *During construction operations, the number of access routes, number and size of staging areas, and the total area of proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance.*

32. *During construction operations, stockpiling of construction materials, portable equipment, vehicles and supplies will be restricted to the designated construction staging areas and exclusive of the ESAs which must be at least 200 feet from any GGS habitat.*

33. *After construction activities are complete, any temporary fill or construction debris shall be removed and disturbed areas restored and revegetated to their pre-project conditions. An area subject to "temporary" disturbance includes any area that is disturbed during the project, but that, after project completion, will not be subject to further disturbance and has the potential to be revegetated.*

34. *The contractor shall ensure that activities that are inconsistent with the maintenance of the suitability of vernal pool crustacean habitat and the associated on-site watershed are prohibited. These include, but are not limited to:*

a. *The alteration of existing topography that may alter hydrology into habitat for federally-listed vernal pool crustaceans.*

b. *The placement of any equipment within suitable habitat.*

c. *Dumping, burning and/or burying of rubbish, garbage, or any other wastes and fill material.*

d. *The use of pesticides or other toxic chemicals.*

35. *To minimize the introduction of exotic weeds, only certified weed-free straw/hay bales, if bales are used, should be used for erosion control or other purposes at the proposed project.*

D. CULTURAL RESOURCES

1. Environmental Setting

A cultural resources inventory and evaluation was conducted by Pacific Legacy in compliance with CEQA, NEPA and Section 106 of the National Historic Preservation Act (NHPA).

To identify cultural resources in the project area, Pacific Legacy conducted a record search at the Northeast Information Center of the California Historical Resources Information System at California State University, Chico; contacted the Native American Heritage Commission (NAHC) and Native American representatives with interest in the project area; and conducted an archaeological field survey. Pacific Legacy prepared a Historic Property Survey Report (HPSR), Archaeological Survey Report (ASR), and an Archaeological Evaluation Report. The results of these studies are summarized below.

2. Environmental Checklist

CULTURAL RESOURCES – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Cause a substantial adverse change in the significance of a historical resource as defined in Public Resources Code Section 15064.5?			X	
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Public Resources Code Section 15064.5?			X	
3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
4) Disturb any human remains, including those interred outside of formal cemeteries?				X

3. Discussion

A record and information search of the project area was conducted by the Northeast Information Center of the California Historical Resources Information System at California State University, Chico. The record search revealed that the project area had not been previously studied. Although there were 43 previous cultural resource studies within a 1-mile radius of the project, there are no recorded studies completed within the project area limits. Nineteen cultural resources have been recorded within a 1-mile radius of the project area. Of these, ten are recorded prehistoric sites, one is an informally recorded prehistoric site, seven are recorded historic sites, and one is an informally recorded historic stone wall.

A pedestrian survey of the project area was completed by Pacific Legacy in October 2005, July and November 2006. The surveys were conducted by walking the designated project area limits in five meter transects with special attention paid to landscaping features, rodent holes, ditches, and road- and creek-bank cuts that showed the soil profiles. In most areas, the right-of-way closer to the road provided sufficient surface visibility although grass cover was present.

The surveys did not result in the identification of any prehistoric sites within the project area limits. However, two historic period resources were recorded within the project limits. SR32-1 is an early to mid twentieth-century trash scatter and SR32-2 is an earthen ditch.

Caltrans requested that SR32-1 and SR32-2 be evaluated for eligibility to the California Register of Historic Resources and the National Register of Historic Places; therefore subsurface archaeological testing was conducted at SR32-1 and additional evaluation was conducted at SR32-2. Given the great horizontal extent of SR32-1, the lack of depth for the deposit, and the high degree of fragmentation of the recovered materials, it is most likely that SR32-1 represents a secondary deposit related to the construction of State Route 32. The deposit does not maintain a significant potential to yield information concerning activities that occurred at this location during a discrete period of time.

SR32-2 is an earthen ditch measuring 1.5 to 2 meters deep and approximately 4 meters wide. Construction of the ditch may be associated with construction of a sewer line that parallels the ditch to the east and has created a berm. SR32-2 most likely does not predate the construction of State Route 32 as it does not continue to the south of the highway. Although SR32-2 appears to retain the integrity of its original construction, the ditch is of modern origin and does not meet the minimum age requirements for consideration as a historical resource.

4. Impacts

Pedestrian survey of the project area identified two cultural resources: SR32-1 and SR32-2. Detailed investigations of both resources determined that these resources are

not eligible for the California Register of Historic Resources or the National Register of Historic Places. Since they are not eligible for either listing, and are not considered "unique archaeological resources" under Public Resources Code Section 21083.2), SR32-1 and SR32-2 are not considered "historic properties" as per Section 106 of the National Historic Preservation Act or "historical resources" as per the California Environmental Quality Act.

However, excavation and earthmoving activities could encounter potentially significant but as yet unidentified cultural/historic resources. If these deposits were determined to be significant under state or federal regulations, the disturbance of the buried deposits could be considered an adverse effect under the California Environmental Quality Act or Section 106 of the NHPA. The following mitigation measures are required for the project.

Cultural Resource Mitigation Measures

The City will include the following conditions in the construction documents for the project.

1. *If buried resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground-disturbing activities, the contractor will stop work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City, Caltrans and other appropriate agencies. Further mitigation and/or construction shall be consistent with the recommendations of the archaeologist.*

2. *Any cultural resources found during construction will be recorded or described in a professional report and submitted to the Northeast Information Center at CSU Chico. The City will be responsible for preparing the report.*

3. *If human remains are discovered during project construction, the contractor shall stop all work at the discovery location and any nearby area reasonably suspected to overlie adjacent human remains (Public Resources Code, Section 7050.5). The County Coroner shall be contacted to determine if the cause of death must be investigated.*

4. *If the coroner determines that the remains are of Native American origin, it shall be necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of Native American Heritage Commission (Public Resource Code, Section 5097). The coroner shall contact Native American Heritage Commission. The descendents or most likely descendents of the deceased shall be contacted. Work shall not resume until the descendents have made a recommendation to the*

landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in Public Resource Code, Section 5097.98. Work may resume if the Native American Heritage Commission is unable to identify a descendant or the descendant fails to make a recommendation. If human remains are found, the City and Caltrans will work with the NAHC as described on the NAHC web page regarding the treatment of human remain: http://nahc.ca.gov/profguide.html.

E. GEOLOGY AND SOILS

1. Environmental Setting

The project is located on the eastern side of the Great Valley geomorphic province of California. The west end of the project site is located about 7 miles from the Sacramento River and the east end is situated in the margin of the Sierra Nevada foothills. Surface elevation along the project alignment is approximately 225 feet at the west end of the project, rising gently to elevation 250 near Bruce Road and then rising somewhat more steeply to about elevation 375 at the east end of the project corridor east of Yosemite Drive. The area is characterized by gently to moderately rolling topography and drains to the southwest along Big Chico Creek, Dead Horse Slough, and Little Chico Creek. Dead Horse Slough Diversion Channel connects Dead Horse Slough to Little Chico Creek and crosses State Route 32 from north to south just east of Forest Avenue.

Natural ground along the project alignment is shown at about elev. 225± at the west end of the project, rising gently to elev. 250± near Bruce Road (5500±ft east) and then rising somewhat more steeply to about elev. 375± at the end of the project about 4500±ft east of Bruce Road.

The project area is underlain by three geologic units, Pleistocene age alluvium of the Modesto and Red Bluff formations mostly west of Bruce Road, and Tuscan formation rock of Pliocene age east of Bruce Road. The Red Bluff formation in this vicinity is of generally limited thickness (less than 6 feet). The Modesto and Red Bluff formations are characterized by gravel, sand, silt and clay derived from the Tuscan formation. The Tuscan formation can be generally characterized as a volcanic mudflow composed of volcanic fragments in a matrix of volcanic mudstone. The maximum thickness of the Tuscan formation is approximately 500 feet.

No faults or other geologic hazards such as landslides, springs or significant depth/areas of recent alluvium are known from the project area. The site is located approximately 12 miles west of the Big Bend fault; the style of this fault is listed as undetermined (per Caltrans "California Seismic Hazard Map 1996" and accompanying technical report). Depth to groundwater along the project corridor is estimated at approximately 105 to 125 feet below the existing ground surface.

A *Preliminary Geotechnical Report* has been completed for the project (Taber Consultants 2005). The purpose of the report is to present geotechnical information necessary for project planning and preliminary engineering.

2. Environmental Checklist

GEOLOGY/SOILS – Would the project or its related activities:	**Potentially significant impact**	**Less than significant impact with mitigation incorporated**	**Less than significant impact**	**No impact**
1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map as 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 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 waste water?				X

3. Discussion

The project area is located in gently rolling terrain, with a surface elevation of 225 to 375 feet mean sea level.

There are no active faults or Alquist-Priolo Earthquake Fault Zones in the vicinity of the project site. Consequently, the area is not subject to fault rupture hazards. The closest fault is the Big Bend Fault, located approximately 12 miles west of the project area. As assessed by the U.S. Geological Survey, the project area has a low probability of seismic hazard and is unlikely to experience strong seismic ground shaking. Although the overall potential for seismicity in the project area is low, the area could be subject to ground shaking. Caltrans and the City of Chico require all new bridges be constructed in accordance with state seismic requirements which would reduce seismic shaking hazards to a less-than-significant level.

Liquefaction is precipitated by strong seismic ground shaking that causes soils to lose shear strength, as such; the project area is unlikely to be susceptible to liquefaction except in the immediate vicinity of streams. Liquefaction is a secondary effect associated with seismic loading. The risk of liquefaction at the project site is expected to be generally low due to the relatively dense consistency of underlying soils, limited depth of recent alluvium and (typical) absence of ground water within the depth of recent alluvium. However, potentially susceptible soils may be present locally, particularly in and along stream channels. Liquefaction potential is higher in the vicinity of stream channels such as Dead Horse Slough.

Landslides are unlikely to occur in the project area as a result of the relatively flat topography. Subsidence is a potential risk of extensive groundwater pumping; however, there have been no reports of subsidence in the Chico Planning Area and groundwater systems in the area continue to recharge to prior levels, indicating that overdraft is not a problem.

The soil underlying the project area has been formed by alluvial fan deposits and has been classified as being derived from the Tuscan Formation. Tuscan association soils are typically well drained, but because of the presence of the Tuscan Formation just beneath the surface, overall permeability is severely limited. Tuscan association soils are highly expansive and subject to low erosion hazards.

The proposed project does not include the use of septic tanks or alternative wastewater disposal systems. Therefore, there would not be an impact related to soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems.

4. Impacts

Portions of the project area, including potentially saturated alluvial soils in the vicinity of Dead Horse Slough are subject to moderate liquefaction risk during seismic events. In addition, construction of the proposed improvements would disturb more than 5 acres of soil, which requires construction activities to comply with the state National Pollutant Discharge Elimination System (NPDES) permit and the City of Chico's Storm Water Management Program (SWMP) for construction site and post-construction runoff controls. As stated above, the proposed project would be required, by law, to comply

with seismic standards, NPDES and the City's SWMP. The following mitigation measures are required for the project.

Geology and Soils Mitigation Measures

1. *The project will be designed to conform to the conclusions and recommendations of the final geotechnical report as they relate to structural sections, earthwork, sound walls and drainage to mitigate potential geologic and soil constraints.*

2. *The project will be designed to conform to the conclusions and recommendations of the final foundation investigation as it relates to the design and construction of Dead Horse Slough bridge.*

3. *The contractor shall submit and obtain approval of an erosion control plan from the City of Chico. The erosion control plan will be designed to limit the effects of soil erosion and water degradation during construction. This plan will be prepared in accordance with City requirements.*

4. *Construction plans and specifications for all elements of the project shall include provisions for erosion control in the event of non-seasonal or early seasonal rainfall during construction, as well as for disturbed areas that remain unvegetated during the rainy season. In addition, rainy season control measures shall be in place and operational before October 15 of each year.*

F. HAZARDS AND HAZARDOUS MATERIALS

1. Environmental Setting

An Initial Site Assessment has been completed for the project by Taber Consultants (2006). The purpose of this study was to identify the presence or likely presence of hazardous substances or petroleum products under conditions that could significantly affect the feasibility or cost of the proposed project. The study included a search of federal, state, and local regulatory agency databases for records of known or potential hazardous waste storage or release sites on or near the study site, identification of past uses of the site, review of available information, telephone conversations with representatives of the California Regional Water Quality Control Board, and site reconnaissance. A Hazardous Materials Report was also prepared for the project by EMKO Environmental. This report also compiled information on known hazardous material storage or release sites, with particular emphasis on the status of the Humboldt Road Burn Dump, as EMKO has been involved with monitoring remedial activities at the site. The following information is summarized from the Initial Site Assessment and the Hazardous Materials Report.

Three geologic units are exposed within the project area: Pleistocene-age alluvium of the Modesto and Red Bluff formations mostly west of Bruce Road and Pliocene-age

Tuscan formation east of Bruce Road. The Modesto and Red Bluff formations comprise a single engineering unit with a generalized description of gravel, sand, silt and clay derived from erosion of the Tuscan formation. The Red Bluff formation is generally of limited thickness (less than 6 feet) in the project area.

The Tuscan formation is predominantly composed of angular to sub-rounded volcanic fragments as much as 10 feet in diameter in a matrix of gray-tan volcanic mudstone. Maximum thickness of this formation can be as much as 500 feet.

California Department of Water Resources (DWR) groundwater well database information indicates that the general water table fluctuates seasonally at depths of approximately 105 to 125 feet below ground surface in the project area. Geotechnical investigations, conducted mainly for bridge foundations/footings construction projects, have found a separate, shallow groundwater "perched" on top of relatively impermeable silt/clay layers or rock at a depth of approximately 10 to 15 feet below ground surface. The level of shallow groundwater is expected to vary seasonally and, at locations near channels, to follow channel water surface.

A review of historical maps and information for the area indicate that construction of the project segment of State Route 32 and existing Dead Horse Slough Bridge began in 1957. At the time, the project area was sparsely developed with several areas of orchard shown proximate to Dead Horse Slough, crossing the area of future State Route 32. These orchards, primarily located between Forest and El Monte Avenues were gone by the late 1970's. Over the past 50 years, increased development has occurred at the western end of the project alignment and adjacent properties, with more recent residential development in the area north of State Route 32 and east of Bruce Road. Aerial photographs also show the Humboldt Road Burn Dump, located north of Humboldt Road and bisected by the present Bruce Road. Based on historical photographs the Humboldt Road Burn Dump was active prior to 1952. The South Fork Dead Horse Slough is an intermittent stream which meanders through the Humboldt Road Burn Dump site.

The potential for an existing condition to affect the project depends, in part, upon the proposed construction that could encounter the condition. It is expected that construction of the proposed project could include relatively deep excavations (drilled piers or pre-drilling for piles) for bridge foundation elements. Otherwise, excavations below the existing surface are expected to be limited from approximately 3 to 4 feet or less for the road construction activity, to approximately 8 to 10 feet for any utility relocation and traffic signal and lighting work. Near surface (upper 10 feet) soils in the area of the site are indicated to be generally of mixed clay and cobbles, and horizontal migration of contamination above groundwater level is likely to be minimal.

Contaminated soil that might be encountered is therefore expected to be limited to soil at and immediately adjacent to the contaminant source and soil at or below the depth of historic high groundwater down-gradient from the contaminant source, with the possible

exception of the streambed sediments in the South Fork Dead Horse Slough located downstream of the former Humboldt Road Burn Dump. It appears that groundwater is unlikely to be encountered at locations other than excavations for bridge foundation elements and then only as perched groundwater.

A database search to identify sites within at least 0.5-mile of the project corridor with known releases of hazardous materials or petroleum products likely to affect the project identified a total of 13 sites with current or former environmental issues within the database search distance. These sites included businesses with underground storage tanks (gasoline stations and the California Highway Patrol) and other businesses classified as "small quantity generators". Cases involving leaking underground storage tanks have resulted in soil and/or groundwater contamination; all cases of leaking underground storage tanks within 0.5-mile of the project have been remediated and closed by the Regional Water Quality Control Board.

Small quantity generators involve the use or production of small quantities of non-acutely hazardous materials or waste. Hazardous materials associated with these industries include fuels, paints, adhesives, photochemicals, and other industrial materials. A release of perchloroethylene (PCE) into soil, groundwater, and a municipal well was recorded from a local dry cleaners; this release is unlikely to affect the proposed project given the depth of regional groundwater at the project and the distance of the project from the location of the release. All other identified small quantity generators had either no releases or violations or had received closure by the Regional Water Quality Control Board.

The Humboldt Road Burn Dump occupies 13 parcels both east and west of the present alignment of Bruce Road. The City of Chico, among others, owned and operated a landfill/burn dump at this location from the early 1900's to approximately 1965, with some illegal dumping continuing after the facility was officially closed around 1965.

The Humboldt Road Burn Dump is found on the Cortese list as a solid waste disposal facility from which there is known migration. Soil samples from the site indicated elevated lead contamination throughout the site with detections of arsenic, antimony, dieldrin (a pesticide) and low concentrations of dioxin. The site has been consolidated, capped and fenced to limit exposure to the lead contaminated soil and a Remedial Action Plan and design is in progress for the parcels which constitute the former burn dump area. The South Fork Dead Horse Slough is an intermittent stream which meanders through the landfill refuse and contamination and flows northwest under State Route 32 into the main branch of Dead Horse Slough, which flows into Little Chico Creek at the diversion channel approximately two miles to the west. Based on conversations with staff at the Central Valley Regional Water Quality Control Board, a potential exists for exposure of construction workers to lead contamination in streambed materials of the South Fork Dead Horse Slough.

As part of the Remedial Investigation of the Humboldt Road Burn Dump, soil samples were collected in 2001 in the area north of the historic disposal areas and south of State Route 32. Contaminants were not detected in these areas with two exceptions. Visible waste material, with elevated concentrations of lead, was found in sediments in South Fork Dead Horse Slough less than 100 feet south of State Route 32. In addition, waste material with elevated concentrations of lead was identified immediately adjacent to the east side of Bruce Road approximately 400 feet south of State Route 32. The lead concentration within the Dead Horse Slough sediments was 264 milligrams per kilogram (mg/kg, equivalent to parts per million, or ppm). The lead concentration in the waste material adjacent to Bruce Road exceeded 2,000 mg/kg in some samples. The cleanup goal for lead established for the Humboldt Road Burn Dump is 224 mg/kg.

Sampling in vicinity of the Humboldt Road Burn Dump was also conducted in July 2000 to determine the background concentration of lead and other metals, pesticides, polychlorinated biphenyls (PCBs), and dioxins/furans. Sampling sites included a location south of State Route 32 approximately 1.5 miles east of Bruce Road and a second location adjacent to the park-and-ride lot within the median of State Route 32, east of State Route 99. Pesticides and PCBs were not detected in the background samples. Reported dioxin/furan levels were within naturally-occurring background levels. The concentrations of chromium, lead, vanadium, and zinc in the two background samples collected along State Route 32 were slightly higher than the concentrations in other background samples collected in the area. It is likely that these slightly elevated concentrations are the result of fallout from vehicular traffic (e.g. leaded gas exhaust, brake-pad wear, etc.). The concentrations of metals detected in the two background samples collected along State Route 32, however, are well below concentrations that would be of concern for human health and are not indicative of the presence of toxic substances or hazardous materials that could affect the proposed project.

Throughout most of the year, surface water is not present within Dead Horse Slough at the two locations where the slough crosses the project corridor. During the rainy season, however, appreciable flows can occur within the slough. Flows coming from the South Fork Dead Horse Slough pass through the Humboldt Road Burn Dump. As part of the Remedial Investigation of the Humboldt Road Burn Dump, surface-water samples were collected in 2001 from several locations along Dead Horse Slough. Toxic substances and hazardous materials were not detected in these surface-water samples.

Remediation activities have been conducted by private parties in 2004, 2005, and 2006 and by the Chico Redevelopment Agency in 2005 and 2006. The remediation activities consisted primarily of the excavation of waste materials and contaminated soils and sediments, and placement of these materials into two permitted consolidation cells located along Humboldt Road to the east of Bruce Road. Oversight of the remediation activities was conducted by the Regional Water Quality Control Board.

2. Environmental Checklist

HAZARDS/HAZARDOUS MATERIALS – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Cause 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 for people residing or working in the project area?				X
6) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
7) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
8) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	

3. Discussion

The proposed project does not involve the emission of hazardous substances or the direct handling of acutely hazardous materials. However, the project is located proximate to the Humboldt Road Burn Dump, a hazardous waste and substance site included on the State of California Cortese list and a site from which the migration of materials is known. The Humboldt Road Burn Dump includes releases of toxic substances and hazardous materials within the project corridor. The two primary areas of concern include the South Fork Dead Horse Slough within at least 100 feet to the south of State Route 32, and the east side of Bruce Road within approximately 400 feet south of State Route 32. Recent remediation activities have resulted in the excavation

and consolidation of most of the waste material and contaminated soils and sediment at the Humboldt Road Burn Dump. These remediation activities, however, did not include the area of South Fork Dead Horse Slough within at least 100 feet to the south of State Route 32. In addition, waste material is still present extending underneath the pavement on the east side of Bruce Road within 400 feet south of State Route 32.

Although the time between construction of State Route 32 in 1957 and the phase-out and then banning of lead additive in gasoline is relatively short, the potential for significant concentrations of aerially deposited lead along the shoulders of the existing road could not be ruled out. Therefore, a program of soil sampling and analytical testing of the samples to assess the presence, concentrations and distributions of aerially deposited lead was conducted to determine whether hazardous levels of lead are present in the portion of the roadway fill to be excavated during road widening activities. Based on the results of the analyses, the excavated soil can be classified as non-hazardous and can be reused or disposed of without restriction with respect to lead content according to Caltrans provisions for health and safety and surplus material handling.

In order to assess whether hazardous levels of lead and chromium are present in the yellow thermoplastic striping on the roadway, two representative samples were collected on the east and west ends of the Dead Horse Slough bridge. Analytical results indicate that it is likely the yellow traffic striping is likely to be classified as hazardous material and would need to be removed and disposed of in a manner consistent with the handling of solids containing hazardous levels of metals.

Upon completion of the roadway improvements, project operations do not involve the transport, use or disposal of hazardous materials. Use of limited volumes of certain hazardous materials during construction (e.g., equipment fuels, solvents, lubricants, etc.) would be subject to best management practices that would ensure no significant impacts would result in case of accidental spills.

The proposed project is not located within an airport planning area. In addition, the proposed project is not located within the vicinity of a private airport.

Implementation of the proposed project would enhance the access for motor vehicles, therefore, the proposed project would not impact the implementation or obstruction of existing emergency response plans. Also, the project area is not designated as a high risk area for wildland fires. Therefore, people and structures within the project area are not exposed to significant risk loss, injury or death involving wildland fires.

4. Impacts

As noted above, the proposed project is located in vicinity of the Humboldt Road Burn Dump from which migration of toxic substances is known. Waste material present extending underneath the pavement on the east side of Bruce Road within 400 feet

south of State Route 32 and within sediments of Dead Horse Slough within at least 100 feet to the south of State Route 32 could be encountered during construction. The following mitigation measures are required for the project.

Hazardous Materials Mitigation Measures

1. *A focused site characterization report will be prepared and submitted to Regional Board describing sampling and analysis activities within the State Route 32 right-of-way along the South Branch Dead Horse Slough. Based on the findings of this report, a remedial design and implementation plan will be prepared and submitted to the Regional Board. Any soil found to contain hazardous material concentrations above any federal or state remediation action levels would be classified in accordance with Title 22 of the California Code of Regulations, and removed to a suitable off-site facility. Excavation activities would be conducted in accordance with the approval from Regional Board, the Streambed Alteration Agreement from DFG, and an Authority to Construct permit from Butte County AQMD. If testing indicated that the concentrations were below regulatory action levels, the soil may be used on-site or disposed of at a Class II or Class III landfill.*

2. *The contractor will develop and implement a spill prevention and control program to minimize the potential for—and effects from—spills of hazardous, toxic or petroleum substances during construction of the project. The program would be a component of the Storm Water Pollution Prevention Plan. If a spill is reportable under federal, state, or local regulations, the contractor would notify the City of Chico, Butte County Environmental Health and California Department of Toxic Substances Control, which has spill response and cleanup ordinances to govern emergency spill response. A written description of reportable releases would be submitted to the Regional Water Quality Control Board. This submittal would include a description of the release, including the type of material and an estimate of the amount spilled; the date of the release; an explanation of why the spill occurred; and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form.*

3. *Yellow traffic striping will be removed and disposed of in a manner consistent with the handling of solids containing hazardous levels of metals.*

G. HYDROLOGY AND WATER QUALITY

1. Environmental Setting

Surface Water. The project site is located in the Dead Horse Slough Watershed adjacent to the Little Chico Creek Watershed. Dead Horse Slough begins approximately 5.1 miles upstream of the project. South Fork Dead Horse Slough begins approximately 3.2 miles upstream of the project. Dead Horse Slough and its south fork drain a segment of the western slopes of Sierra foothills between Musty Buck and Doe Mill Ridges. The highest point in the watershed is at elevation 1,300 feet.

The Dead Horse Slough watershed is about 5.2 square miles at the State Route 32 Bridge. The South Fork Dead Horse watershed is about 0.9 square mile at the State Route 32 reinforced concrete box culvert.

South Fork Dead Horse Slough is a tributary to Dead Horse Slough. Dead Horse Slough is a tributary to Little Chico Creek. Little Chico Creek flows southwest to join Angel Slough. Angel Slough in turn flows south to join Butte Creek just upstream of where Butte Creek joins the Sacramento River.

Prior to the construction of State Route 32, Dead Horse Slough flowed west to Little Chico Creek. At the time State Route 32 was constructed, Dead Horse Slough was diverted just east of Forest Avenue to flow south to cross under State Route 32 and into Little Chico Creek. At the crossing of State Route 32, Dead Horse Slough occupies a well-defined, grassy channel with medium thick riparian growth along the embankments. The creek channel crossing of State Route 32 is approximately 41 degrees from perpendicular.

Upstream of the South Fork Dead Horse Slough crossing the creek channel is located in a gravel and cobble laden swale with mild embankment slopes. The embankments are almost exclusively vegetated with grasses, with very few shrubs or trees. Downstream of the crossing, the gravel and cobble channel is mostly clear of vegetation with heavy foliage on the banks.

Groundwater. The groundwater system underlying the City of Chico supplies most municipal and agricultural water demands of the area. All water supplies for the City are derived from groundwater. The groundwater system largely is sustained by streamflow infiltration from Big Chico Creek and Little Chico Creek and Lindo Channel, and to a lesser degree, by direct infiltration of precipitation. Significant recharge also occurs in the foothills located east of the project area and City. Most residents and business are served by the California Water Service Company (Cal Water), the Chico area water service agency, or private groundwater wells. Cal Water currently operates several municipal wells in the project area and is connected to the system serving the urban area. The groundwater underneath most of the City of Chico is divided into three zones of varying depths: the unconfined, upper confined, and lower confined aquifers. Of

these, the shallow unconfined zone is only sparsely tapped by private wells, whereas the deepest zone is more widely tapped by high-volume irrigation and municipal supply wells. The average amount of water drawn from this deeper aquifer is 19 million gallons per day (mgd).

A *Location Hydraulic Study Report* was prepared for the project (WRECO 2006a). The report evaluates the floodplain encroachment risk associated with the project. The report makes the following conclusions:

- The proposed project would not have a significant impact on Dead Horse Slough and its floodplain encroachment downstream of the bridge. There would be a slight increase (0.24 foot) in the 100-year water surface elevation upstream of the bridge because the highway widening creates more head losses through the bridge section because of the increased number of piles.

- The proposed bridge at the crossing of Dead Horse Slough would be able to contain the 100-year flow and not overtop.

- In general, the replacement or proposed lengthening of the reinforced concrete box culvert at the crossing of South Fork Dead Horse Slough would slightly increase water surface elevations upstream of the box culvert. The water surface elevations downstream of the box culvert are the same in the existing and proposed conditions.

- No significant impacts to beneficial floodplain values are expected, nor does the project promote incompatible floodplain development.

A *Bridge Design Hydraulic Study* was also prepared for the project (WRECO 2006b). The report provides hydrologic and hydraulic data for the design of the bridge and the box culvert. The report includes a hydrologic analysis of the watershed tributary to South Fork Dead Horse Slough to determine design flows, a hydraulic analysis to determine water surface elevations and flow velocities, and a scour analysis to determine potential scour depths and countermeasures.

2. Environmental Checklist

HYDROLOGY AND WATER QUALITY – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Violate any water quality standards or waste discharge requirements?		X		
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				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, in a manner which would result in substantial erosion or siltation on- or off-site?		X		
4) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?		X		
5) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
6) Otherwise substantially degrade water quality?			X	
7) Place real property within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
9) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
10) Inundation by seiche, tsunami, or mudflow?				X

3. Discussion

The roadway improvements would add additional impervious surfaces to the project area. Implementation of the proposed project would result in increases in runoff from the project area and result in increases in total annual discharge to the waterways that receive runoff from the area. However, the proposed project would comply with all applicable water quality standards and requirements included as part of the state NPDES and the City's SWMP to control construction site and post-construction runoff.

The proposed project does not include the extraction of groundwater or interfere substantially with aquifer recharge.

However, modifications to the existing drainage system would focus on developing bio-swale type roadside ditches, with gentle side slopes and hydroseeding to prevent erosion and promote water quality. Culverts would be installed along some project segments to drain portions of the project.

The proposed project does not include the construction of any dwelling units or other types of buildings. Therefore, real property would not be placed within a 100-year flood hazard area nor would the proposed project impede or redirect flood flows. The proposed project is not located in an area that could be affected by a tsunami event.

4. Impacts

The proposed project has the potential to violate waste discharge requirements; however, mitigation has been identified to comply with all applicable water quality standards and requirements included as part of the state NPDES and the City's SWMP to control construction site and post-construction runoff. In addition, although the project has the potential to increase flooding, the proposed project would include engineering designs (e.g. bio-swale type roadside ditches and new culverts) that would improve the existing drainage system.

Hydrology and Water Quality Mitigation Measures

1. *The project will be designed to conform to the conclusions and recommendations of the Final Location Hydraulic Study Report, Final Bridge Design Hydraulic Study, and Storm Water Data Report.*

2. *The contractor will avoid and minimize potential construction-related water quality impacts through compliance with the Regional Board by preparing and submitting the following water quality permits and plans.*

    a. *Enrollment into the National Pollutant Discharge Elimination System (NPDES) Statewide Construction General Permit by submission of a Notice of Intent.*

    b. *Preparation of a Storm Water Pollution Prevention Plan (SWPPP) for minimizing and avoiding impacts to water quality during construction activities.*

3. *The contractor will be responsible for understanding and following the guidelines set forth in the Caltrans Storm Water Quality Handbook, Construction Best Management Practices (BMPs) Manual, March 2003 or latest edition. Measures consistent with the current Caltrans' Construction Site BMPs Manual, including the Storm Water Pollution Prevention Plan*

(SWPPP) and Water Pollution Control Program (WPCP) Manuals, will be implemented to minimize effects to listed species during construction.

4. *The contractor will prepare a site-specific SWPPP for the project to protect receiving waters from pollution. The SWPPP will include standard sediment and erosion control measures which will include limiting soil disturbances during the winter rainfall season. Given the site-specific conditions of the project area, the SWPPP for this project will generally include limiting soil disturbances during the winter rainfall season of October 15 through April 15 and fully stabilizing disturbed areas prior to December 1. Standard sediment erosion control measures, such as silt fencing, straw bale barriers, sediment traps, or other measures could also directly reduce the offsite transport of sediment from disturbed slopes. Existing vegetation that can be preserved will be identified and flagged or fenced to avoid disturbance. Erosion in disturbed areas will be controlled through the use of grading operations that eliminate direct routes for conveying runoff to drainage channels and use of soil stabilization BMPs, such as mulching, erosion control fabrics, and/or reseeding with grass or other plants where necessary. Standard staging area practices for sediment tracking reduction also will be identified where necessary including vehicle washing and street sweeping. Temporary concentrated flow conveyance systems also will be considered, such as berms, ditches, and outlet flow-velocity dissipation devices to reduce erosion from newly disturbed slopes.*

5. *The contractor will regularly inspect and maintain the BMPs in good working order.*

6. *The City will incorporate permanent post-construction BMPs in the project design to avoid or minimize long-term water quality impacts, pursuant to the NPDES storm water permit. Appropriate BMPs for the project site could include stabilization measures such as preservation of existing vegetation, concentrated flow conveyance systems (ditches, berms, drains, flared culvert end sections, outlet protection, and flow-velocity dissipation), and slope roughening or terracing for new cut-and-fill slopes as deemed necessary by the project engineer. Slope protection measures will be implemented to control erosion such as reducing the length of disturbed slopes, reducing the gradient of slopes, and preventing concentrated flow over slope soils. The City will be responsible for long-term inspection and maintenance of the permanent BMPs to ensure that they are maintained in good working order.*

H. LAND USE AND PLANNING

1. Environmental Setting

The proposed project is located in the southeast portion of the City of Chico. The project corridor extends along State Route 32 from State Route 99 to Yosemite Drive.

State Route 32 provides access to downtown Chico and to the California State University, Chico campus. State Route 32 crosses Dead Horse Slough via bridge just east of Forest Avenue and again via culvert just east of Bruce Road. There are no existing bicycle facilities along State Route 32; however, there are parallel east-west bicycle routes both north and south of State Route 32.

Land uses along the project corridor vary. The more intensive development is located near State Route 99 (generally offices and businesses south of State Route 32 and apartments and single family homes north of State Route 32), to less intensive development further east. Two park-and-ride lots are located between the eastbound and westbound lanes on both sides of Fir Street. Apartments and single family residential uses are found from just west of Forest Avenue to El Monte Avenue. Undeveloped land is still located just west of Bruce Avenue; however, this land is anticipated to be developed within the next five years. The north side of State Route 32 east of Bruce Road is developed with apartments and offices.

Chico General Plan. The City of Chico General Plan, adopted in 1994 and updated in 1999, provides the framework to guide future physical development of the City. The General Plan provides the following information about the project and land use in the project area.

State Route 32 is located in the Southeast Planning Area Quadrant of the Chico General Plan. State Route 32 is depicted as an existing four-lane major arterial roadway on the Chico General Plan Circulation System diagram, when in actuality State Route 32 through the project area transitions from a one-way city couplet (East 8th Street and East 9th Street) to a four-lane State highway to a two-lane State highway east of Forest Avenue. The primary function of major arterials is to move large volumes of traffic between freeways and other arterials within the city and adjacent jurisdictions. Major arterials should provide four travel lanes, a raised or painted median, and bike lanes. However, according to the Bicycle System Map, no bike lanes are proposed for the project extent of State Route 32. Additionally, the Transportation Element of the Chico General Plan notes that on-street parking should not be provided and driveway access should be minimized on major arterials.

Within the City of Chico, the Chico General Plan Land Use Map identifies land use designations along the project corridor as public facilities and services, community commercial, and various densities of residential development (Figure 14). According to the Special Development Areas Map, the project corridor is located within the urban development area, but does not encompass or abut any special development areas.

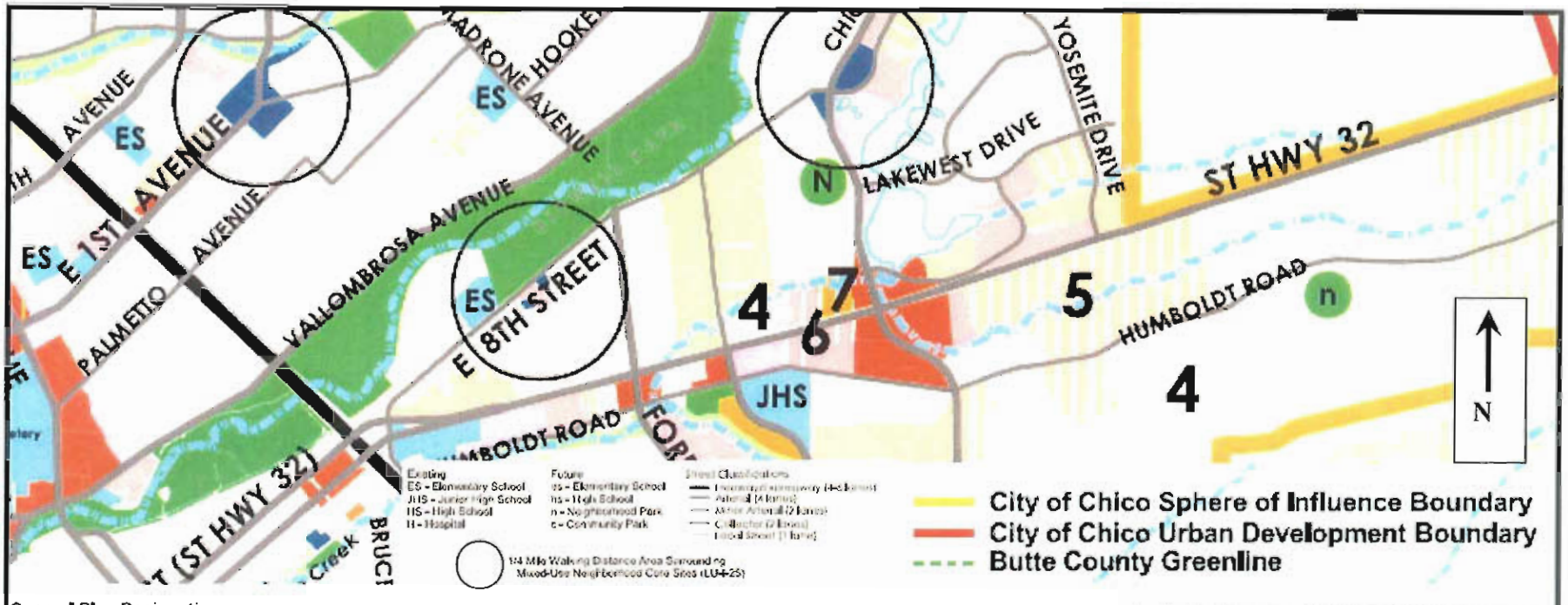
The project corridor traverses or abuts two resource management areas (RMAs) (Figure 14). An RMA generally contains resources that merit long-term preservation, but further study is necessary before a precise amount of acreage to be preserved can be delineated. The RMAs in the project area include mixed riparian, willow scrub, cottonwood riparian, valley oak riparian, valley oak woodland, intermittent riverine where State Route 32 crosses Dead Horse Slough, and non-native annual grassland that provides drainage to other sensitive habitats extending from just west of Bruce Road to the eastern project terminus. The intent of RMA designation is to ensure that biological resources are considered and responded to in design, prior to substantial engineering.

2. Environmental Checklist

LAND USE AND PLANNING – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Be in consistent with General Plan or Specific Plan policies, or zoning regulation?				X
2) Physically divide an established community?				X
3) Conflict with any applicable Resource Management or Resource Conservation Plan?				X
4) Result in substantial conflict with the established character, aesthetics or functioning of the surrounding community?			X	
5) Be a part of a larger project involving a series of cumulative actions?				X
6) Result in displacement of people or business activity?				X
7) Convert viable prime agricultural land and/or land under agricultural contract to non-agricultural use, or substantially conflict with existing agricultural operations? (Viable agricultural land is defined as land on Class I or Class II agricultural soils of 5 acres or greater, adjacent on no more than one side to existing urban development.)				X

3. Discussion

The proposed project is consistent with City of Chico General Plan which identifies the project extent of State Route 32 as a four lane major arterial. The proposed project would also support adjacent urban growth areas as identified in the General Plan by providing adequate capacity on the project extent of State Route 32. The intersection improvements would also help maintain and improve connectivity between the neighborhoods north and south of State Route 32.



General Plan Designations

- Rural Residential
- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- Medium High Density Residential
- High-Density Residential
- Downtown
- Community Commercial
- Mixed-Use Neighborhood Core
- Visitor Services
- Commercial Services
- Offices
- Industrial Park
- Manufacturing and Warehousing
- Public Facilities and Services
- Parks
- Creekside Greenways
- Open Space for Environmental Conservation/Safety
- Open Space for Agriculture/ Resource Management

Mixed Land Use Designations

1. Community Commercial and High Density Residential (LU-I-23)
2. Open Space for Environmental Conservation/Safety and Rural Residential (LU-I-75)
3. Open Space for Environmental Conservation/Safety and Very Low Density Residential
4. Open Space for Environmental Conservation/Safety and Low Density Residential
5. Open Space for Environmental Conservation/Safety and Medium Density Residential
6. Open Space for Environmental Conservation/Safety and Medium-High Density Residential
7. Open Space for Environmental Conservation/Safety and High Density Residential
8. Open Space for Environmental Conservation/Safety and Industrial Park
9. Open Space for Environmental Conservation/Safety and Manufacturing and Warehousing
10. For Specific Land Use Requirements See General Plan Implementing Policy LU-I-56

1. Locations of future schools are general; alternate locations in the same vicinity may be approved without amending the General Plan.

2. The Butte County Airport Land Use Commission's Response Area includes land within two miles of the Chico Municipal Airport.

3. Alternating bands of different uses indicate that the designated mix of uses is permitted.

4. Land within the Urban Development Area boundary designated for development and hatched with the Open Space for Environmental Conservation/Safety designation will be subject to resource management overlay zoning district regulations.

5. The General Plan Diagram is a diagrammatic representation of policies contained in the General Plan. It is also to be used and interpreted in conjunction with the text and other figures contained in the General Plan. Uses on sites less than two acres are generally not depicted on the Diagram. (see also Section 3.2 in the General Plan.)

6. This General Plan Diagram incorporates all amendments through June 8, 2005.

Figure 14. City of Chico General Plan Diagram

Road widening would require the removal of a substantial amount of shrubs and a large number of trees along the project corridor. The established character and aesthetics of the surrounding community, which is primarily defined by the design elements and landscaping of the adjacent residential neighborhoods, would change. The proposed project would not preclude the future construction of beautification projects along the project corridor or conflict with the City's requirement that developers along this roadway provide aesthetic treatments and landscape plans for projects adjacent to the roadway.

If warranted by the noise analysis being prepared for the project, removed trees may be replaced with a sound wall along the north side of the road between Fir Street and El Monte Avenue and a sound wall along the south side of the road between Fir Street and Forest Avenue. Consistent with the City of Chico General Plan Noise Element Policy N-I-13, if noise barriers are required to attenuate noise, the City would require that the barriers (sound walls) be landscaped to reduce the negative visual impacts on the community.

No habitat conservation plan or natural community conservation plan has been adopted for the project area and the proposed project would not convert viable prime agricultural land or conflict with any existing agricultural operations. The project would not result in the displacement of people or businesses.

4. Impacts

The project would not conflict with any applicable land use plans, policies or regulations and the project would not physically divide an established community.

I. NOISE

The following information is summarized from the Noise Impact Assessment prepared by Illingworth & Rodkin in August 2006. Copies of the Noise Impact Assessment are on file at the City of Chico offices. Detailed information on decibels and frequency, noise descriptors, human response to noise, and sound propagation is found in the noise report.

1. Fundamentals of Environmental Noise

Technical acoustical terms commonly used in this report are defined in Table 5. Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its loudness. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is the intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

Table 5. Definitions of Acoustical Terms Used in This Section	
Term	**Definitions**
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, Leq	The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA $L_{eq[h]}$.
Lmax RMS Level	The maximum root-mean-square (RMS) sound pressure level during a measurement – measured using the "fast" exponential time constant.
Linear Peak Level	Peak sound pressure level based on the largest absolute value of the instantaneous sound pressure over the frequency range from 20 Hz to 20,000 Hz.
L_{01}, L_{05}, L_{10}, L_{90}	The A-weighted noise levels that are exceeded 1%, 5%, 10%, and 90% of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

2. Federal, State, and Local Regulations, Standards and Policies

The federal and state standards, regulations, and policies relating to traffic noise are discussed in detail in the Traffic Noise Analysis Protocol (TNAP). Federal regulations addressing highway noise are defined in 23 Code of Federal Regulations (CFR) Part 772. The State Route 32 widening project is considered to be a Type I project for the noise study. This noise study was conducted following the policies and methods described in the TNAP and the accompanying Technical Noise Supplement or TeNS (Caltrans 1998). The policies and methods described by the TNAP and TeNS are consistent with the following Federal and State environmental statutes:

- National Environmental Policy Act (NEPA)
- Code of Federal Regulations, Title 23, Part 772 (23 CFR 772)
- California Environmental Quality Act (CEQA)

Under FHWA/Caltrans regulations, noise abatement must be considered for Type I projects when the project results in a substantial noise increase, or when the predicted noise levels approach or exceed the Noise Abatement Criterion (NAC). Noise abatement measures, which are reasonable and feasible, and are likely to be incorporated into a project, as well as impacts for which no apparent solution is available, must be identified and incorporated into the project plans and specifications. The Noise Abatement Criterion, established by FHWA, for various land uses (called activity categories), is shown in Table 6. These noise criteria are assigned to both exterior and interior activities. Caltrans has further defined the level of approaching the NAC to be 1 dBA below the NAC (e.g., 66 dBA is considered approaching the NAC for Category B activity areas).

When traffic noise impacts are predicted, noise abatement measures must be evaluated and considered. However, the noise abatement measures must be feasible and reasonable. Feasibility is an engineering consideration; for a sound wall to be considered feasible it must achieve a minimum of 5-dBA of noise reduction and should interrupt the line-of-sight between a truck stack (assumed to be 11.5 feet high) and the impacted receiver (assumed to be 5 feet above ground). The feasibility criterion is not necessarily a noise abatement design goal. Greater noise reductions are encouraged if they can be reasonably achieved. The determination of reasonableness in noise abatement is more subjective than the determination of its feasibility. It implies that common sense and good judgment have been applied in arriving at a decision to include noise abatement features in the project.

Table 6. Federal Noise Abatement Criteria		
Activity Category	**Noise Abatement Criteria (dBA) $L_{eq\,[h]}$***	**Description of Activity Category**
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.
* Noisiest hour expressed as the energy-average of the A-weighted noise level occurring during a one-hour period or Leq [h].		

CEQA contains general guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, a project would be considered to have a significant impact if it causes:

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The Noise Element of the City of Chico General Plan provides general goals and policies to guide development in the City. Applicable policies identified in the General Plan state that the City should include appropriate noise attenuation techniques in the design of all new arterial streets, and construction operations should use available noise suppression devices and techniques. The noise element of the General Plan contains planning guidelines relating to noise. The noise element identifies goals and policies to support achievement of those goals. The goal and policies contained in the General Plan are applicable through out the City.

Policy N-1-1: State that noise created by new transportation noise sources should be mitigated so as not to exceed the levels specified in Table 7 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

Policy N-1-2: It is anticipated that roadway improvement projects will be needed to accommodate build out of the general plan. Therefore, existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects as a result of increased roadway capacity, increases in travel speeds, etc. It may not be practical to reduce increased traffic noise levels consistent with those contained in Table 7. Therefore, as an alternative, the following criteria may be used as a test of significance for the environmental review of a roadway improvement project:

- Where existing traffic noise levels are less than 60 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant; and

- Where existing traffic noise levels range between 60 and 65 dB Ldn at the outdoor activity areas of noise sensitive uses, a +3 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant; and

- Where existing traffic noise levels are greater than 65 dB Ldn at the outdoor activity areas of noise sensitive uses, a +1.5 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant.

Table 7. Maximum Allowable Noise Exposure Transportation Noise Sources			
Land Use	Outdoor Activity Areas [1] L_{dn} /CNEL, dB	Interior Spaces	
		L_{dn} /CNEL, dB	L_{eq}, dB [2]
Residential	60 [3]	45	
Transient Lodging	60 [4]	45	
Hospitals, Nursing Homes	60 [3]	45	
Theaters, Auditoriums, Music Halls			35
Churches, Meeting Halls	60 [3]		40
Office Buildings			45
Schools, Libraries, Museums	60 [3]		45
Playgrounds, Neighborhood Parks	70		

1. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
2. As determined for a typical worst-case hour during periods of use.
3. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} /CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L^{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
4. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

3. Study Methods and Procedures

The first step in the noise analysis was to identify receiver locations. Receiver locations are described by different NAC activity categories (see Table 6). Noise receiver locations exposed to potential traffic noise impacts were identified along the project corridor. Category B land uses in the vicinity of the project area, including apartment complexes and single family homes, were identified through a review of aerial photos of the project area and a subsequent visit to the study area. Activity Categories A, C, and D areas were not identified.

The second step in the noise analysis was to measure existing noise levels. Noise measurements were conducted at twenty-two Category B receiver locations on October 26-28, 2005. The noise measurement survey consisted of a combination of long-term measurements (24 hours in duration) and short-term measurements (10 minutes in

duration). Five long-term noise measurement locations and seventeen short-term noise measurement locations were selected to represent the varying noise exposures of the identified Category B receivers.

Long-term noise measurements were conducted to show the trend in both 10-minute and hourly noise levels throughout a 24–hour period. Long-term noise measurement locations were selected to generally represent "worst-case" human activity areas. These were located at Category B activity areas or in areas considered acoustically equivalent to Category B activity areas. Some locations were only used to evaluate the trend in traffic noise levels. Care was taken to select sites that were primarily affected by noise from State Route 32 and to avoid sites in which noise contamination from sources other than the roadway may occur.

Short-term noise measurements were conducted simultaneous with traffic counts at twenty-seven locations throughout the study area in ten-minute intervals. Measurements were repeated at some locations to confirm traffic noise levels or assess variability due to noise sources other than adjacent highways. Short-term noise measurements were conducted outdoors at areas of frequent human activity or at acoustically equivalent locations. The microphones were located approximately 5 feet above the surrounding ground and at least 15 feet from structures. Peak-hour noise levels at each receiver were calculated by adjusting for differences in traffic conditions during measurements and the loudest existing hourly traffic conditions. The adjusted peak-hour noise levels were compared to trends measured at nearby long-term noise measurement locations.

Noise measurement locations are used as noise modeling receivers for prediction of future noise levels. Locations of these receivers are shown in the aerial photos of the project extent shown in Figure 15.

4. Existing Noise Environment

The project proposes to widen and improve State Route 32 from State Route 99 to Yosemite Drive. Land uses in the vicinity of the project site are a mixture of single, multi-family residential, commercial uses and vacant land. The noise environment in the study area results primarily from vehicular traffic along State Route 32. From the beginning of the project at State Route 99 to Forest Avenue, land use on the north side of State Route 32 is a mixture of high density (apartments) and single family residential. Along the south side of State Route 32 is a mixture of office, commercial, high density residential and residential. The area closest to State Route 99 is primarily commercial with the residential area being closer to Forest Avenue. From Forest Avenue to El Monte Avenue on the north side of State Route 32 there is a small subdivision west of Dead Horse Slough. On the east side of Dead Horse Slough there is a Bed and Breakfast and three residential receptors on large lots. On the south side of State Route 32 is a mixture of single-family residential units on large lots and vacant lots.

From El Monte Avenue to Bruce Road along the north side of State Route 32 there is one commercial receptor located on the northeast corner of El Monte Avenue and State Route 32. All other parcels are vacant undeveloped land. Along the south side of State Route 32 and to the east of El Monte Avenue is the new Mission Vista Hills development; a mixture of two commercial buildings and thirty-three single-family homes. These properties are currently under construction and a 6-foot high masonry wall is under construction along State Route 32 adjacent to the single-family homes. The remainder of the land on the east side is undeveloped land.

On the south side of State Route 32 from Bruce Road to the end of the project there is undeveloped vacant land. The primary concern is the 340-acre Oak Valley subdivision south of State Route 32 that has been approved for development. On the north side of State Route 32 from Bruce Road east to the end of project mixture of office, commercial and medium to high-density residential units.

5. Environmental Checklist

NOISE – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Expose residents in new hotels, motels, apartment houses, and dwellings (other than single-family dwellings) to interior noise levels higher than 45 dBA CNEL in any habitable room with windows closed?	X			
2) Expose sensitive receptors (residential, parks, hospitals, schools) to exterior noise levels of 60 dBA CNEL or higher?	X			
3) Expose persons to or generate excessive groundborne vibration or groundborne noise levels?		X		
4) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
5) Result in temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
6) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
7) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Figure 15a. Noise Receptor Map

INDEX

R-1 —— Modeled Receptor Locations

ST-15 —— Short Term Noise Measurement Locations

LT-1 —— Long Term Noise Measurement Locations

STATE ROUTE 32 WIDENING PROJECT

(State Route 99 to Yosemite Drive)

Noise Measurement and Modeled Receiver locations

NOT TO SCALE

SHEET 1 OF 4

Figure 15 b. Noise Receptor Map

INDEX

R-1 —— Modeled Receptor Locations

ST-15 —— Short Term Noise Measurement Locations

LT-1 —— Long Term Noise Measurement Locations

STATE ROUTE 32 WIDENING PROJECT

(State Route 99 to Yosemite Drive)

Noise Measurement and Modeled Receiver locations

NOT TO SCALE

SHEET 2 OF 4

Figure 15c. Noise Receptor Map

INDEX

R-1 — Modeled Receptor Locations

ST-15 — Short Term Noise Measurement Locations

LT-1 — Long Term Noise Measurement Locations

STATE ROUTE 32 WIDENING PROJECT

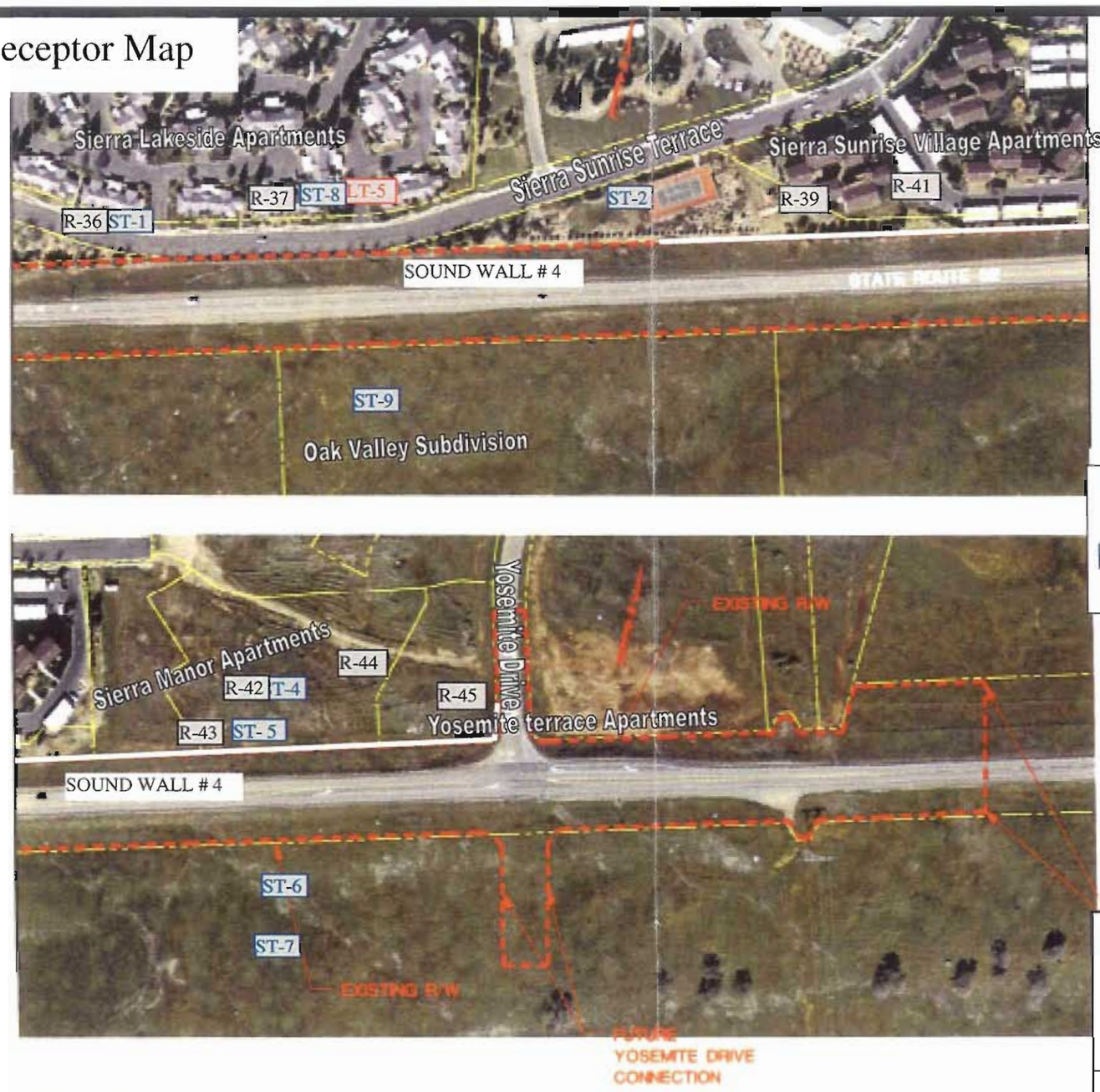
(State Route 99 to Yosemite Drive)

Noise Measurement and Modeled Receiver locations

NOT TO SCALE

SHEET 3 OF 4

Figure 15d. Noise Receptor Map



INDEX

R-1 —— Modeled Receptor Locations

ST-15 —— Short Term Noise Measurement Locations

LT-1 —— Long Term Noise Measurement Locations

STATE ROUTE 32 WIDENING PROJECT

(State Route 99 to Yosemite Drive)

Noise Measurement and Modeled Receiver locations

NOT TO SCALE

SHEET 4 OF 4

6. Discussion

Modeling of future year (2030) traffic conditions predicts that noise levels will increase with the general growth and the project by approximately 1 to 8 dBA Leq (hr) at Category B receivers in the study area with the project. Most receivers in the project area are below the FHWA Noise Abatement Criteria (66 dBA for residential or Category B areas) with existing traffic conditions. Under future build conditions the NAC would be exceeded at most locations adjacent to State Route 32. This analysis looks at impacts and abatement as it pertains to the NEPA (federal/Caltrans) criteria and impacts and mitigation following the CEQA and City of Chico guidelines.

The proposed project would increase the number of through travel lanes shifting the travel way closer to existing residential uses in the vicinity of the project. Noise levels generated by future traffic along the proposed alignment were compared to existing noise conditions to evaluate the potential for a substantial permanent noise level increase at receivers in the project vicinity. Future noise levels were calculated with the FHWA's Traffic Noise Model (FHWA TNM v. 2.5).

Roadway, barrier, and receiver locations were digitized and input into the traffic noise model. Three-dimensional geometrics were based on the roadway improvement plans provided by Mark Thomas & Company, Inc. PM peak hour traffic volumes, the estimated vehicle mix, and traffic speeds were also input into the model to calculate the expected noise level increase associated with the project. Vehicle mix and traffic speeds were estimated based on field observations. The traffic noise model was calibrated to reflect measured noise conditions at each receiver. All receiver locations, measured (Reference - LT, Short-term – ST) and modeled (R), are shown in Figure 15.

7. Impacts

Implementation of the project would result in two noise impacts:

- a substantial noise increase at noise-sensitive receptors in the project area (as identified under the California Environmental Quality Act [CEQA] or as identified under the National Environmental Policy Act [NEPA] as approaching or exceeding noise abatement criteria [NAC], and

- a temporary increase in noise levels during construction.

The project would move travel lanes closer to existing residences and facilitate traffic volume increases. Noise impacts resulting from the project would vary along the project alignment. Exterior Ldn noise levels are anticipated to increase substantially (1 to 8 dBA) at some receiver locations between Fir Street and Yosemite Drive. This is considered a significant impact because it would result in an increase in exterior noise levels ranging from 1-8 dBA Ldn. Table 8 summarizes the results of the traffic noise modeling using CEQA criteria.

It should be noted that the City and Caltrans have committed to using open grade asphalt concrete (OGAC) on the project which would reduce long-term operational noise levels along the corridor. An ongoing traffic noise study along Interstate 80 in Davis found a 5-dBA decrease in traffic noise when aged (old) asphalt concrete (AC) pavement was replaced with OGAC. The new FHWA noise model indicates that there is a difference of about 3-dBA between OGAC and Portland Cement Concrete (PCC) pavement types. Recent research indicates differences of up to 10 dBA immediately adjacent to roadways. Under FHWA policies, only average pavement conditions can be used to evaluate highway noise impacts; therefore, the pavement type cannot be considered in predicting future noise levels. However, calibration of the traffic noise model does consider the effect of the current pavement in the prediction of future noise impacts.

Table 8. Traffic Noise Modeling Results - CEQA Criteria

**Receptor ID	Existing Noise Level	Predicted Noise Level	*Increase in Noise levels	CEQA Threshold of Significance	CEQA Impact of Build Without OGAC	*Increase in Build With OGAC	CEQA Impact of Build with OGAC
R-1	66	70	5	1.5	Significant	2	Significant
R-2	61	66	5	3	Significant	2	Less than Significant
R-3	64	69	5	3	Significant	2	Less than Significant
R-4	64	69	5	3	Significant	2	Less than Significant
R-5 (ST-15)	65	70	5	1.5	Significant	2	Significant
R-6 (LT-1)	65	71	7	1.5	Significant	4	Significant
R-7 (ST-14)	65	71	5	1.5	Significant	2	Significant
R-8	64	71	6	3	Significant	3	Significant
R-9 (ST-17)	62	63	1	3	Less than Significant	-2	Less than Significant
R-11	66	69	3	1.5	Significant	0	Less than Significant
R-12	66	68	2	1.5	Significant	-1	Less than Significant
R-13	64	65	1	3	Less than Significant	-2	Less than Significant
R-14	65	68	2	1.5	Significant	-1	Less than Significant
R-15	62	65	3	3	Significant	0	Less than Significant
R-16	63	65	2	3	Less than Significant	-1	Less than Significant
R-17 (ST-13)	65	72	7	1.5	Significant	4	Significant
R-18 (LT-3)	60	64	3	3	Significant	0	Less than Significant
R-19	61	65	4	3	Significant	1	Less than Significant
R-20 (LT-2)	62	67	5	3	Significant	2	Less than Significant
R-21	61	67	6	3	Significant	3	Significant
R-22	59	65	6	5	Significant	3	Significant
R-23 (ST-12)	65	71	7	1.5	Significant	4	Significant
R-24	62	67	5	3	Significant	2	Less than Significant
R-25	61	66	6	3	Significant	3	Significant
R-26	61	70	9	3	Significant	6	Significant
R-27	57	60	3	5	Less than Significant	0	Less than Significant
R-28	65	70	5	1.5	Significant	2	Less than Significant
R-29	57	61	4	5	Less than Significant	1	Less than Significant
R-30	67	72	5	1.5	Significant	2	Less than Significant
R-31	65	70	5	1.5	Significant	2	Less than Significant
R-32	57	62	4	5	Less than Significant	1	Less than Significant
R-33	58	62	4	5	Less than Significant	1	Less than Significant
R-34 (ST-3)	64	66	2	3	Less than Significant	-1	Less than Significant

Table 8. Traffic Noise Modeling Results - CEQA Criteria

**Receptor ID	Existing Noise Level	Predicted Noise Level	*Increase in Noise levels	CEQA Threshold of Significance	CEQA Impact of Build Without OGAC	*Increase in Build With OGAC	CEQA Impact of Build with OGAC
R-36 (ST-1)	64	69	6	3	Significant	3	Significant
R-37 (ST-8)	64	69	4	3	Significant	1	Less than Significant
ST-2	62	69	7	3	Significant	4	Significant
R-39	60	66	6	3	Significant	3	Less than Significant
R-41	60	66	7	3	Significant	4	Significant
R-42 (ST-4)	61	65	4	3	Significant	1	Less than Significant
R-43 (ST-5)	59	64	6	5	Significant	3	Less than Significant
R-44	58	64	6	5	Significant	3	Less than Significant
R-45	60	65	5	3	Significant	2	Less than Significant
R-49	65	72	7	1.5	Significant	4	Significant
R-50	65	72	7	1.5	Significant	4	Significant
R-51	64	72	7	3	Significant	4	Significant
R-52	64	72	7	3	Significant	4	Significant
R-53	65	71	6	1.5	Significant	3	Significant
R-54	65	71	6	1.5	Significant	3	Significant
R-55	64	70	6	3	Significant	3	Significant

* Levels may not add up exactly due to rounding of modeled results.
** Reference sites not included.

Fir Street to Forest Avenue

A separated four-lane facility currently exists from Fir Street to approximately 1,100 feet east of Fir Street where it transitions into a two-lane facility with left turn pockets at Forest Avenue. Along eastbound State Route 32 there is a mixture of commercial, assisted living housing, multi-family apartments, and single-family residences.

Impact 1-A: The assisted living center (Community Care Options) is far enough back from SR 32 that the noise levels are expected to increase by less than 2 dBA. This is not considered a substantial increase and mitigation is not required.

Impact 1-B: There are two apartment complexes along this section of State Route 32, the Humboldt Park and Humboldt Ridge apartments. These complexes back up to the highway and the noise levels are expected to increase from an existing average noise level of 66 dBA Ldn to a future build noise level of 68 dBA Ldn. This is considered a substantial increase and a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would reduce the impact to a less-than-significant level.

Impact 1-C: The noise levels at the single-family residences located on Hunter Court is expected to increase 3 to 5 dBA, from an existing average noise level of 66 dBA Ldn to a future build noise level of 70 dBA Ldn. This is considered a substantial increase and a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would not reduce the impact to a less-than-significant level and additional mitigation would be required in the form of a sound wall. A sound wall 6 feet above the height of the edge of travel way would reduce the noise levels to a less-than-significant level.

Impact 1-D: The noise levels at the Vista Verde apartment complex and the Turning Point Commons Cooperative on the north side of State Route 32 are expected to increase by an average of 5 dBA from an average of 65 dBA Ldn to 70 dBA Ldn. This is considered a substantial increase and a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would reduce the impact to a less-than-significant level at the Vista Verde apartment complex; however, the noise impact at the Turning Point Commons apartment complex would remain significant and additional mitigation would be required in the form of a sound wall. A sound wall 6 feet above the height of the edge of travel way would reduce the noise levels to a less-than-significant level.

Impact 1-E: Noise levels at the homes adjacent to the highway along Modoc Drive, Greg Court, and Merle Court are expected to increase by an average of 7 dBA from an average of 65 dBA Ldn to 72 dBA Ldn. This is considered a substantial increase and a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would not reduce the impact to a less-than-significant level and additional mitigation would be required in the form of a sound wall. A sound wall 6 feet above the height of the edge of travel way would reduce the noise levels to a less-than-significant level.

State Route 32 from Forest Avenue to El Monte Avenue

The existing State Route 32 is a two-lane facility with left turn lanes at the intersection of both Forest Avenue and El Monte Avenue. The widening will be to the north of the existing State Route 32. The receptors on the south side of State Route 32 are set back from the roadway on large parcels. On the southeast corner of Forest Avenue and State Route 32 there is a commercial receptor. On the northeast corner of State Route 32 and Forest Avenue there is a small subdivision. To the east of the subdivision is Dead Horse Slough. East of Dead Horse Slough is a bed and breakfast, a music school and three homes.

Impact 1-F: The homes located on the south side of State Route 32 between Forest Avenue and El Monte Avenue are far enough back from State Route 32 that the noise levels are expected to increase by approximately 4 dBA. At this location the CEQA threshold of significance is 5 dB above the

existing; therefore, this is not considered a substantial increase and mitigation is not required.

Impact 1-G: There are six receptors located adjacent to State Route 32 on Stansbury Court. The noise levels at these receptors are expected to increase from an existing average noise level of 61 dBA Ldn to a future build noise level of 66 dBA Ldn. This is considered a substantial increase and a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would reduce the impact to a less-than-significant level at all but one of the receptor locations. A sound wall 6 feet above the height of the edge of travel way would reduce the noise levels to a less-than-significant level at all receptor locations.

Impact 1-H: The noise levels at the outdoor area of the bed and breakfast are expected to increase from an existing noise level of 65 dBA Ldn to a future build level of 71 dBA Ldn. The noise levels at the music school and the private residences are expected to increase from an existing level of 62 dBA Ldn to a future build level of 66 dBA Ldn. These noise level increases are considered substantial and a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would reduce the impact to a less-than-significant level at the music school and private residences, but the impact would remain significant at the bed and breakfast. A sound wall 6 feet in height at the edge of travel way would reduce the noise levels to a less-than-significant level at all receptor locations.

State Route 32 from El Monte Avenue to Bruce Road

East of El Monte Avenue the widening will transition from the widening on the north side of State Route 32 to both sides of State Route 32. On the south side of State Route 32 there is one subdivision under construction, the Mission Vista Hills, a 33-home development. To the east of this is undeveloped land. On the north side of State Route 32 there is a veterinary clinic located on the corner of El Monte Avenue and SR 32, east of this is primarily undeveloped land adjacent to State Route 32.

Impact 1-I: The noise levels at the veterinary clinic are expected to increase from an existing level of 61 dBA Ldn to a future build level of 70 dBA Ldn. There is no threshold of significance for noise level increases for commercial applications and the noise increase is therefore not considered a significant impact and mitigation is not required.

Impact 1-J: The noise levels at the Mission Vista Hills Subdivision with the construction of a sound wall along the right of way as required by the building permit are expected to increase from an existing level of 58 dBA

Ldn to a future build level of 62 dBA Ldn. At this location the CEQA threshold of significance is 5 dB above the existing; therefore, this is not considered a substantial increase and mitigation is not required.

State Route 32 from Bruce Road to Yosemite Drive

On the south side of State Route 32 a 340-acre subdivision, Oak Valley Subdivision, has been approved by the City. A Final Environmental Report was completed in November of 2004 for a 43-acre section of the 340-acre subdivision. The Vesting Tentative Subdivision Map indicates that there will be approximately 15 parcels along State Route 32. Along the north side of State Route 32 there are four apartment complexes adjacent to State Route 32.

Impact 1-K: The noise levels at the Sierra Lakeside apartment complex on the north side of SR 32 are expected to increase by an average of 5 dBA from an average of 64 dBA Ldn to 69 dBA Ldn. This is considered a substantial increase and therefore a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA at the Sierra Lakeside apartments; this would reduce the impact to a less-than-significant level.

Impact 1-L: The noise levels at the Sierra Sunrise Village apartment complex on the north side of State Route 32 are expected to increase by an average of 6 dBA from an average of 60 dBA Ldn to 66 dBA Ldn. This is considered a substantial increase and therefore a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA at the Sierra Sunrise apartments; this would not reduce the impact to a less-than-significant level and additional mitigation would be required in the form of a sound wall. A sound wall 6 feet above the height of the edge of travel way will reduce the noise levels to a less-than-significant level.

Impact 1-M: The noise levels at the Sierra Manor apartment complex on the north side of State Route 32 are expected to increase by an average of 6 dBA from an average of 60 dBA Ldn to 66 dBA Ldn. This is considered a substantial increase and therefore a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA at the Sierra Manor apartments; this would not reduce the impact to a less-than-significant level and additional mitigation would be required in the form of a sound wall. A sound wall 6 feet above the height of the edge of travel way would reduce the noise levels to a less-than-significant level.

Impact 1-N: The noise levels at the Yosemite Terrace apartment complex on the north side of State Route 32 are expected to increase by an average of 5 dBA

from an average of 60 dBA Ldn to 65 dBA Ldn. This is considered a substantial increase and therefore a significant impact.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA at the Yosemite Terrace apartments; this would reduce the impact to a less-than-significant level.

Impact 1-O: The proposed building sites in the Oak Valley subdivision indicate that the homes will be set back at such a distance that there will be no impact from the proposed State Route 32 widening. Without final design plans with exact location and elevations of the proposed homes an accurate determination is not possible.

CEQA Mitigation: Paving State Route 32 with OGAC will reduce noise levels by 3 dBA; this would account for any additional noise increases from the project, which was not accounted for in the analysis for the Final EIR prepared for the Oak Valley subdivision.

Preliminary Noise Abatement Analysis – FHWA Analysis

The primary noise impacts associated with the project would result from the roadway widening toward the homes along State Route 32, which would shift traffic and traffic noise closer to some residential receivers. Substantial noise impacts would not occur at Category B uses in the project study area, but receivers adjacent to State Route 32 would experience future noise levels that would approach or exceed the NAC. As a result, noise abatement was evaluated for these receivers.

Under Caltrans and FHWA policies, feasible sound walls must reduce traffic noise by a minimum of 5-dBA. Furthermore, under Caltrans policies, sound walls should interrupt the line of sight between a truck stack (of average height) and a receiver. Chapter 1100 of the Highway Design Manual identifies particular design guidelines that must be met for sound wall, depending on roadway conditions. Proposed sound wall locations are shown in Figures 15a through 15d.

Sound Wall #1 – State Route 99 to Forest Avenue on the north side of State Route 32

A sound wall located along the westbound (north) side of State Route 32 is feasible (i.e., reduce noise levels by 5 dBA and block line of sight to heavy-duty truck stacks in the near travel lane). This sound wall would benefit approximately 23 receivers in the apartment complexes to the west end and approximately 18 homes from Forest Avenue to Fir Street, depending upon the selected barrier height. The approximate length of this sound wall would be about 3,700 feet.

Sound Wall #2 – Just west of Hunter Court to just west of Forest Avenue on the south side of State Route 32

A sound wall located along the eastbound (south) side of the State Route 32 is feasible (i.e., reduce noise levels by 5 dBA and block line of sight to heavy-duty truck stacks in

the near travel lane). This sound wall would benefit approximately 21 receivers in the apartment complexes to the west end and approximately 5 homes on Hunter Court depending upon the selected wall height. The approximate length of this sound wall would be about 1,600 feet.

Sound Wall #3A – Forest Avenue to Dead Horse Slough on the north side of State Route 32

A sound wall located along the westbound (north) side of the State Route 32 is feasible (i.e., reduce noise levels by 5 dBA and block line of sight to heavy-duty truck stacks in the near travel lane). This sound wall would benefit approximately 2 to 3 homes from Forest Avenue to Dead Horse Slough, depending upon the selected barrier height. The approximate length of this sound wall would be about 500 feet.

Sound Wall #3B - Dead Horse Slough to El Monte Avenue on the north side of State Route 32

A sound wall located along the westbound (north) side of the State Route 32 is feasible (i.e., reduce noise levels by 5 dBA and block line of sight to heavy-duty truck stacks in the near travel lane). This sound wall would benefit approximately 2 homes from Dead Horse Slough to El Monte Avenue, depending upon the selected barrier height. The approximate length of this sound wall would be about 850 feet.

Sound Wall #4 – just west of Sierra Sunrise Village Apartments to Yosemite Drive on the north side of State Route 32

A sound wall located along the westbound (north) side of the State Route 32 is feasible (i.e., reduce noise levels by 5 dBA and block line of sight to heavy-duty truck stacks in the near travel lane). This sound wall would benefit approximately 27 to 33 receivers in the apartment complexes from the beginning of the wall to Yosemite Drive, depending upon the selected barrier height. The approximate length of this sound wall would be about 2,700 feet.

Noise Abatement Feasibility and Reasonable Cost Allowances

A reasonableness allowance considers the absolute future noise level, the noise level increase caused by the project, the achievable reduction provided by the sound wall, and the age of the dwelling unit (built before or after 1978). The reasonableness allowance per design receiver was calculated for the project. A base reasonable cost allowance of $52,000 per benefited residence (or residential equivalent) was applied. Caltrans policies include a modification of the reasonable allowance to account for the total project costs. In summary, the above sound walls are considered reasonable and feasible under FHWA/Caltrans guidelines. Since there is no federal funding proposed for this project, under NEPA guidelines it is only required that the City of Chico consider the abatement. The City is not required to implement the abatement.

Potential Adverse Noise Impacts Associated with Noise Abatement

In recent years, issues regarding possible negative acoustical effects of sound walls have been raised in many communities. These include reflected noise from a single sound wall and reflected noise from parallel barriers, and effects on distant receivers behind sound walls.

Reflected Noise from Sound Walls

There are two types of reflected noise from sound walls; noise reflected from a single wall and noise reflected from parallel walls.

Sound Wall #1 and Sound Wall #2. If Sound Wall 1 and Sound Wall 2 were both constructed, a condition of parallel barriers and single reflective sound walls would occur. Approximately 1,600 feet of these walls would create a parallel barrier situation. A separation distance to height ratio of 10:1 is recommended by Caltrans to avoid substantial degradation effects. These sound walls would maintain a minimum separation distance of about 140 feet. The selected barrier heights for Sound Wall 1 and Sound Wall 2 would be 12 feet or less given Caltrans specifications regarding barrier height and distance from the traveled way. Therefore, the minimum separation distance to avoid substantial barrier degradation would be maintained. If these walls are included in the project, they should be evaluated during final design for potential degradation due to parallel barrier conditions. To reduce the potential for parallel barrier degradation, sound absorptive barrier materials could be considered as part of the sound wall construction.

At the west end of Sound Wall 1 there are no noise-sensitive receivers located opposite of this sound wall, so adverse noise impacts from reflective noise are not expected.

Sound Wall #3A and Sound Wall #3B. Residential areas opposite these sound walls are setback considerably from State Route 32. Therefore, adverse noise impacts due to reflections are not anticipated.

Sound Wall #4. Noise-sensitive receivers are not located opposite of this sound wall, so adverse noise impacts from reflective noise are not expected.

Changes to Noise Levels at Distant Receivers Behind Sound Walls

Some community members have indicated that they believe that sound walls have increased noise levels at distant receivers that are behind a sound wall. There is no question that sound walls reduce noise levels behind sound walls within about 500 feet (depending upon the topography). In the past, residents approximately 1,300 to 3,300 feet behind new sound walls have complained that their noise levels increased because of new sound walls. Caltrans has conducted studies to evaluate this effect. These studies included before and after sound wall measurements of traffic noise, traffic volume (by vehicle type), traffic speed, and meteorological conditions. Before and after sound wall measurements were carefully matched by meteorological conditions

(primarily wind and vertical temperature gradient data) and normalized for different traffic conditions. The conclusion reached in all studies is that sound wall did not affect noise levels at distant receivers. The studies found that traffic noise levels varied by up to 10 dBA, due to changes in meteorological conditions.

Construction Noise Impacts

Construction activities associated with the proposed project would include clearing of vegetation, grading, construction of a new bridge to cross Dead Horse Slough, roadway construction of travel lanes, reconstruction of the existing intersections, and the possible construction of sound walls.

Construction activities would result in temporary noise level increases at receivers along the project alignment. Assuming that there will be no night time work, this impact is considered less than significant given the anticipated construction schedule and the time that particular noise-sensitive receivers would be affected by the project.

Construction of the project would generate noise, and would temporarily increase noise levels at adjacent residential receptors. Road construction is anticipated to begin at the earliest in Spring 2008 and be completed in approximately one year. Construction equipment would likely include air compressors, paving machines, forklift trucks, loaders, pavement grinders, dump trucks, trenching machines, compactors, and backhoes. The park-and-ride lots at the west end of the project have been identified as potential staging areas for the contractor.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction activities generate considerable amounts of noise, especially when heavy equipment is used. At times, these activities would occur immediately adjacent to residential receivers. Tables 9 and 10 show typical noise levels generated by construction equipment at a distance of 50 feet from the source and at a distance of 50 feet from the construction activity center, respectively. The highest maximum noise levels generated by project construction would typically range from about 90 to 98 dBA at a distance of 50 feet from the noise source. Typical hourly average construction generated noise levels are about 79 dBA to 88 dBA measured at a distance of 50 feet from the center of the site during busy construction periods. Noise levels described above would be expected when construction occurs in the immediate vicinity of receivers along the project alignment. Construction generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding provided by buildings or terrain result in lower construction noise levels at distant receptors. Construction noise levels would at times exceed 60 dBA Leq and the ambient by at least 5 dBA Leq at nearby receivers. Noise generated by roadway construction does not typically last over extended periods of time as activities move along the right-of-way as construction proceeds.

Table 9. Construction Equipment Noise	
Type of Construction Equipment	**Maximum Level, dBA at 15 meters**
Scrapers	89
Bulldozers	85
Heavy trucks	88
Backhoe	80
Pneumatic tools	85
Concrete Pump	82
Impact Pile Driver	95 to 105

Source: National Cooperative Highway Research Program, Synthesis of Highway Practice 218, Mitigation of Nighttime Construction Noise, Vibrations, and Other Nuisances. 1999.

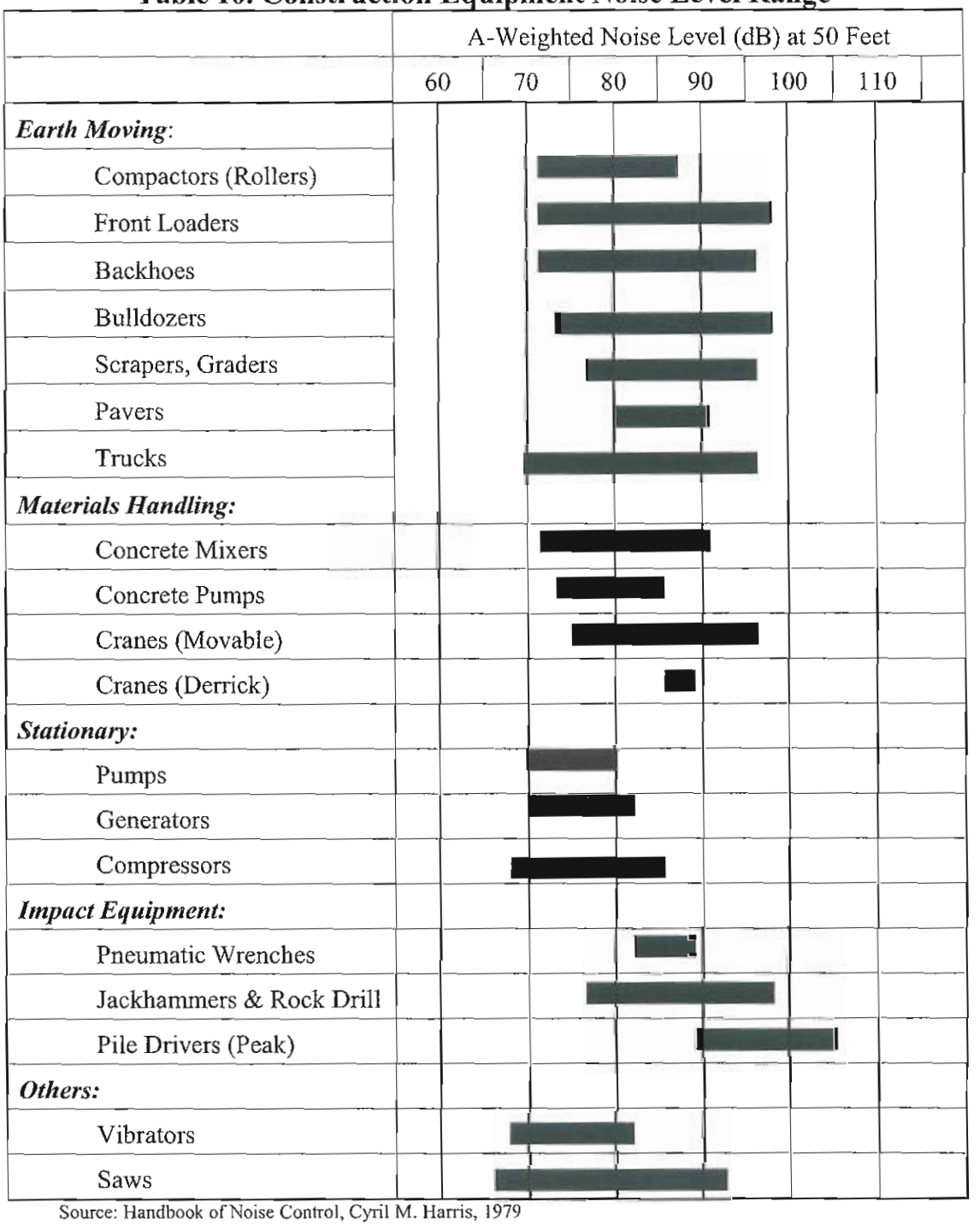
Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. Limiting the hours when construction can occur to daytime hours is often a simple method to reduce the potential for noise impacts. In areas immediately adjacent to construction, controls such as constructing temporary sound wall and utilizing "quiet" construction equipment can also reduce the potential for noise impacts.

Noise Mitigation Measures

1. *The City shall pave State Route 32 with open graded asphalt concrete or a similar type of pavement that will achieve a minimum noise reduction of 3 dBA.*

2. *The City shall consider the construction of sound walls along the project corridor as identified in this document. The sound walls must have a minimum height of 6 feet above the height of the edge of travel way to be constructed with this project. If sound walls are constructed as recommended, the impact is considered reduced to a less-than-significant level. If sound walls are not constructed, or are not constructed as recommended in this document, the City shall identify the noise impact as significant and unavoidable.*

Table 10. Construction Equipment Noise Level Range



Source: Handbook of Noise Control, Cyril M. Harris, 1979

3. *Although construction noise is considered less than significant, the following standard construction noise control measures should be required to be implemented by the contractor during construction to reduce the effects of construction noise on adjacent residential land uses.*

   a. *Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way should be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents should be notified and noise levels for the needed work should be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dB at 50 feet.*

   b. *Equip all internal combustion engine driven equipment with intake and exhaust mufflers, which are in good condition and appropriate for the equipment.*

   c. *"Unnecessary" idling of internal combustion engines should be strictly prohibited.*

   d. *Avoid staging of construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment, such as air compressors and portable power generators, as far as practical from existing noise sensitive receptors. Construct temporary barriers to screen stationary noise generating equipment when located in areas adjoining noise sensitive land uses.*

   e. *Utilize "quiet" air compressors and other stationary noise sources where technology exists.*

   f. *Route all construction traffic to and from the project site via designated truck routes. Prohibit construction-related heavy truck traffic in residential areas where feasible. Prohibit construction truck traffic in the project vicinity during non-allowed hours.*

   g. *Notify residents, businesses, and schools in the project area of the construction schedule in writing.*

   h. *Designate a "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule. (The City should be responsible for designating a noise disturbance coordinator and the contractor should be responsible for posting the phone number and providing construction schedule notices).*

J. OPEN SPACE/RECREATION

1. Environmental Setting

Land uses along the project corridor vary from urban uses (offices and businesses) near State Route 99 to residential uses further east. Land between State Route 99 and El Monte Avenue is generally developed, primarily with residential uses on the north and office, commercial and residential uses on the south. Two park-and-ride lots are located between the eastbound and westbound lanes on both sides of Fir Street. There are a few undeveloped parcels along this section; however, most of this area is developed. Along the south side of State Route 32 and to the east of El Monte Avenue is the new Mission Vista Hills development; a mixture of two commercial buildings and 33 single-family homes. An office and residential development is located on the north side of State Route 32 between Bruce Road and Yosemite Drive. There are no parks, creekside greenways or open space areas located along the project extent of State Route 32.

Currently there are no bike lanes on State Route 32 and none are proposed because of the high-speed nature of the facility and the fact that bicycle routes are provided on parallel facilities.

2. Environmental Checklist

OPEN SPACE/RECREATION – Would the project or its related activities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Affect land preserved under an open space contract or easement?				X
2) Affect an existing or potential community recreation area?				X
3) 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
4) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

3. Discussion

The proposed project is the widening of State Route 32. Construction and operation of the proposed project would not affect any open space areas in the project vicinity. Implementation of the proposed project would not require the need for construction or

expansion of recreational facilities because the project would not introduce additional residents or recreational users into the project area.

4. Impacts

As stated above, the proposed project would not affect any open space areas and would also not require the expansion of any nearby recreational facilities.

K. POPULATION AND HOUSING

1. Environmental Setting

Butte County, the City of Chico, and the tri-county region (Butte, Glenn, and Tehama Counties) have experienced population growth through the 1990s. Annual population growth rates between 1990 and 2000 ranged from 0.65% to 1.22% in the tri-county region, and growth is expected to continue at comparable or higher rates through 2040. Population growth in the City of Chico has exceeded growth in the county as a whole by 49.6% during the same period.

In 2000, there were approximately 23,476 occupied housing units in the City of Chico, with an average occupancy of 2.42 persons (U.S. Bureau of the Census 2000). Just under half of the units are single-family residences, approximately half are multi-family units, and the remaining are mobile homes. Growth in housing and population is expected to maintain a consistent pace.

2. Environmental Checklist

POPULATION AND HOUSING – Would the project or its related activities:	**Potentially significant impact**	**Less than significant impact with mitigation incorporated**	**Less than significant impact**	**No impact**
1) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
2) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?				X
3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
4) Conflict with General Plan population growth rates for its planning areas in conjunction with other recently approved development?				X

3. Discussion

The proposed project is the widening of State Route 32. The purpose of the project is to provide additional capacity needed as a result of approved and planned development on and near the State Route 32 corridor between State Route 99 and Yosemite Drive. No extension of infrastructure is proposed as part of the project. Although the project includes the construction of utility crossings at several intersections along State Route 32 on an 'as-needed' basis for various utilities (such as water, wastewater, drainage, electrical, communications, telephone, gas, etc.), these utility crossings would 'stub out' within the project limits on the north and south sides of State Route 32. The project does not include the installation or extension of any utilities outside the State Route 32 right-of-way project limits. Therefore, implementation of the proposed project would not induce substantial population growth, displace existing housing, or create the need for new housing in the future.

4. Impacts

The proposed project does not include the construction of new homes or create the need for new housing in the future. Therefore, the proposed project would not directly or indirectly induce population growth in the area.

L. PUBLIC SERVICES

1. Environmental Setting

Fire protection and emergency medical services in the project area are provided by the City of Chico Fire Station No. 5, while the Chico Police Department and Butte County Sheriff's Office provide law enforcement services. Other service providers in the project area include Cal Water, which is the sole provider of water in the Chico area; the Chico General Services Department, which provides storm drainage; Pacific Gas and Electric Company, which provide electrical power and natural gas; and SBC Communications, Inc. (SBC), which provides telephone service. Marsh Junior High School, located on Humboldt Road east of El Monte Avenue, is the closest public school to the project area.

The proposed project would result in changes to State Route 32 which is one of the major roads used to access Marsh Junior High School. During preliminary design of the project, the design team discussed the location of the school and possible temporary conflicts during construction or long-term considerations related to design. In addition, a traffic engineer monitored pedestrian and bicycle access to the school to identify any areas of concern.

2. Environmental Checklist

PUBLIC SERVICES – Would the project or its related activities have an effect	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Fire protection?		X		
2) Police protection?		X		
3) Schools?		X		
4) Parks or recreation facilities (see Section J – Open Space/Recreation)?				X
5) Maintenance of public facilities, including roads, canals, etc.?			X	
6) Other government services?		X		

3. Discussion

Construction of the proposed project would result in temporary traffic congestion during construction; however, the additional capacity should reduce the long term potential for traffic congestion in the area, thereby improving the response time for emergency services. Since the proposed project would not result in a population increase, the expansion of existing fire or police facilities would not be required.

It is possible that temporary construction impacts could result in delays for vehicles going to or from Marsh Junior High School which is located south of State Route 32 on Humboldt Road. Temporary construction impacts would be mitigated by the standard City requirement to prepare a traffic management plan to inform individuals, businesses and the public about construction activities in and around Chico.

As presented in Section J – Open Space/Recreation, all nearby parks or recreation facilities would not be significantly affected by the proposed project.

Since the proposed project would change Fir Street from a two-way street to a one-way, northbound-only street, the City asked the Police Department and California Department of Highway Patrol if there were any law enforcement or emergency vehicle access concerns related to the proposed change. Based on the location of the existing fire and police facilities south of State Route 32, provision of alternate ingress east of Fir Street and continuation of adequate access to State Route 99, both agencies stated that the proposed design should not hinder emergency response. However, both agencies requested that they continue to consulted and provided opportunity to review the preliminary and final design of the proposed project.

Upon completion of the roadway improvements, maintenance of State Route 32 would continue to be the responsibility of the Caltrans subject to a maintenance agreement with the City.

4. Impacts

Implementation of the proposed project would not impact any existing public services provided for the project area.

Public Services Mitigation Measures

1. *The contractor will prepare and implement a coordinated Transportation Management Plan (TMP) for the project that addresses local and Caltrans concerns. The TMP shall be submitted to the City, Caltrans and Chico Unified School District 30 days prior to commencement of construction. The TMP shall be consistent with City and Caltrans policies and procedures.*

    a. *The local aspect of the TMP will identify the locations of any temporary detours and signage to facilitate local traffic patterns and through-traffic requirements.*

    b. *The Caltrans aspect of the TMP will identify TMP strategies that will be considered for the project include Construction Zone Enhanced Enforcement Patrol, lane closure, and maintaining traffic. Most of the construction along State Route 32 will take place behind temporary K-railing with traffic attenuators placed as necessary. the design of the project and the TMP, especially staging and traffic control systems, will be coordinated closely with the Caltrans District 3 TMP coordinator.*

2. *The contractor will provide 10 days notice to emergency service providers (i.e., law enforcement, fire protection, and ambulance service) and the Chico Unified School District of any construction activity that would hinder emergency vehicle response time or access to or from the school.*

3. *The contractor will provide 10 days notice to residents, businesses and the school to minimize construction conflicts. Construction activities will be coordinated to avoid blocking or limiting access to homes, business, and properties to the maximum extent possible. Residents and businesses will be advised about potential access or parking effects before construction activities begin.*

4. *The contractor shall provide a parking plan to accommodate construction equipment and construction workers. For each construction phase, the*

parking plan will identify sites for construction parking to avoid effects on local residents and businesses.

M. TRANSPORTATION/CIRCULATION FACTORS

1. Environmental Setting

The City of Chico and Caltrans identified various intersections to study for the project. The study intersections were evaluated during the morning (AM), evening (PM), and Saturday midday (SAT) peak hours. For design year (future) conditions, identified improvements were compared to the State Route 99 Auxiliary Lane study to ensure compatibility between projects.

All of the study intersections were reviewed to identify the most appropriate intersection controls.

The City of Chico desires bicycles and pedestrians traveling east-west in this area to use new facilities along Humboldt Avenue (paralleling State Route 32 to the south) or existing multi-use paths along Big Chico Creek (paralleling State Route 32 to the north). North-south pedestrian and bicycle travel is accommodated at intersections through the study corridor.

The traffic operations analysis addressed intersection operations through the study corridor. Key assumptions related to this analysis are listed below.

- All analyses were conducted using procedures and methodologies that are consistent with the Highway Capacity Manual (Transportation Research Board, 2000). These methodologies were applied using VISSIM, a micro-simulation software program.

- The Highway Capacity Manual assigns level of service (LOS) based on average control delay. Because VISSIM does not measure control delay, total delay was used to determine LOS. This conservative approach is recommended in Guidelines for Applying Traffic Microsimulation Modeling Software (Caltrans, 2002) since the other components of delay are significantly less than control delay.

- For existing conditions, the traffic count data was entered in 15-minute intervals. For future conditions, the existing peak hour factor was applied to the hourly forecasts. All LOS analysis results are reported for the peak 15-minute interval.

- Based on information provided by Caltrans staff, a peak hour truck percentage of five percent was assumed for mainline State Route 32 and the ramps from/to State Route 99. A default of two percent was assumed for all other side-street approaches in the area.

The analysis methodology described above was used to measure AM, PM, and SAT peak-hour traffic operations for the study intersections. The analysis results include a descriptive term known as level of service (LOS). LOS is a measure of traffic operating conditions, which varies from LOS A (the lowest delay) to LOS F (the highest delay). LOS E represents "at-capacity" operations.

Table 11 describes the LOS thresholds from the Highway Capacity Manual 2000 for intersections. The intersection LOS thresholds differ between signalized and stop-controlled intersections. The LOS is determined by the average control delay on an intersection-wide basis for signalized and all-way stop-controlled intersections and on the movement with the highest delay for minor-street stop-controlled intersections. Technical calculations used to determine LOS are contained in Appendix A of the Traffic Report (Fehr & Peers 2006).

TABLE 11. INTERSECTION LEVEL OF SERVICE THRESHOLDS

Level of Service	Description	Average Control Delay[1]	
		Signal	Stop Control
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 to 20	> 10 to 15
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 to 35	> 15 to 25
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55	> 25 to 35
E	Operations with high delay values indicating poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55 to 80	> 35 to 50
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80	> 50

Note:
[1] Measured in seconds per vehicle
Source: *Highway Capacity Manual* (Transportation Research Board, 2000)

According to the City of Chico's General Plan, LOS D is considered the minimum LOS for intersections within the City, which includes the study area. The State Route 32 Transportation Concept Report (Caltrans District 3, 1996) shows LOS E as the Year 2015 concept LOS for the segment within the study area. Since the City's threshold is more conservative, LOS D was used as the analysis evaluation criteria for all study intersections.

The proposed project consists of widening State Route 32 from the State Route 99/State Route 32 interchange to just east of Yosemite Drive. The study area includes the following study intersections.

1. SR 99 Southbound Off-Ramp/SR 32 – signalized
2. SR 99 Southbound On-Ramp/SR 32 – signalized
3. SR 99 Northbound On-Ramp/SR 32 – signalized
4. SR 99 Northbound Off-Ramp/SR 32 – signalized
5. Fir Street/SR 32 – side-street stop-controlled
6. Fir Street/SR 32 – side-street stop-controlled
7. Forest Avenue/SR 32 – signalized
8. El Monte Avenue/SR 32 – signalized
9. Bruce Road/SR 32 – signalized
10. Yosemite Drive/SR 32 – side-street stop-controlled

The results of the LOS analysis at the study intersections are presented in Table 12. The results of the LOS analysis indicate that all of the intersections operate at an overall acceptable level. However, the minor street approach to the Fir Street/SR 32 (E. 8th Street) intersection operates at an unacceptable LOS F during the AM peak hour and the minor street approach to the Fir Street/State Route 32 (E. 9th Street) intersection operates at an unacceptable LOS F during the PM peak hour.

Caltrans provided accident data at the State Route 99/State Route 32 interchange and State Route 32 between State Route 99 and Yosemite Drive (post miles 10.157 to 12.390 in Butte County). The Traffic Accident Surveillance and Analysis System (TASAS) provided data for the three-year period from April 1, 2001 through April 31, 2004.

A total of 63 accidents were reported in the study area during the three-year period. Twenty-nine accidents occurred at the interchange and 34 accidents occurred on State Route 32. Table 13 summarizes the accident data.

Tables 14 and 15 summarize the accident rates for the interchange and State Route 32 in the study area. The accident rates were calculated for the study segments and were compared to the averages for similar roadway segments throughout the state. Comparing the calculated rates to the state-wide average rates indicates that, during the three-year analysis period, the accident rates are above the statewide average for the State Route 99 southbound on-ramp from State Route 32 and the State Route 99 northbound on-ramp from State Route 32. Additionally, the Forest Avenue/State Route 32 and Bruce Road/State Route 32 intersections experience higher than average accident rates. There were no fatal accidents at the interchange or on State Route 32.

TABLE 12 - EXISTING INTERSECTION LEVELS OF SERVICE				
Intersection	**Control**	**Peak Hour**	**Control Delay[1] (Seconds)**	**Level of Service**
SR 99 SB Offramp/ SR 32 (E. 8th Street)	Signal	AM PM Sat	18 14 9	B B A
SR 99 SB Onramp/ SR 32 (E. 9th Street)	Signal	AM PM Sat	11 12 8	B B A
SR 99 NB Onramp/ SR 32 (E. 8th Street)	Signal	AM PM Sat	7 7 6	A A A
SR 99 NB Offramp/ SR 32 (E. 9th Street)	Signal	AM PM Sat	12 14 9	B B A
Fir Street/SR 32 (E. 8th Street)	TWSC[2]	AM PM Sat	18 **(77)** 8 (18) 6 (10)	C **(F)** A (C) A (A)
Fir Street/SR 32 (E. 9th Street)	TWSC	AM PM Sat	3 (21) 8 **(64)** 1 (17)	A (C) A **(F)** A (B)
Forest Avenue/SR 32	Signal	AM PM Sat	49 36 18	D D B
El Monte Avenue/SR 32	Signal	AM PM Sat	29 7 9	C A A
Bruce Road/SR 32	Signal	AM PM Sat	30 26 18	C C B
Yosemite Drive/SR 32	TWSC	AM PM Sat	6 (16) 3 (9) 3 (8)	A (C) A (A) A (A)

Notes:

1 Average control delay calculated using the *Highway Capacity Manual (HCM)* (Transportation Research Board, 2000) methodology. Calculations were conducted using the VISSIM simulation analysis software at all intersections. At signalized intersections, average control delay is reported as the average for all movements. Control delay at a two-way stop controlled intersection is represented as XX (YY), where XX is equal to the average delay at the intersection overall, and (YY) is equal to the delay of the worst case approach and/or movement.

2 Two-way stop controlled intersection.

BOLD type indicates unacceptable operations.

Source: *Fehr & Peers, 2005*

TABLE 13 - ACCIDENT DATA SUMMARY: 2001-2004	
Location	**Number of Accidents**
SR 99/ SR 32 Interchange	29
SR 32 Mainline	34
Total	***63***
Source: *Caltrans and Fehr & Peers, 2005*	

TABLE 14 - ACCIDENT RATES FOR STATE ROUTE 99/STATE ROUTE 32 INTERCHANGE: 2001-2004

Location	Number of Accidents			Actual Accident Rate			Average Accident Rate		
	Total	Fatal	Injury	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
SR 99 Northbound Off Ramp to SR 32	4	0	1	0.000	0.15	0.59	0.006	0.35	0.90
SR 99 Southbound On Ramp from SR 32	9	0	3	0.000	**0.44**	**1.32**	0.003	0.17	0.45
SR 99 Northbound On Ramp from SR 32	14	0	5	0.000	**0.58**	**1.64**	0.003	0.17	0.45
SR 99 Southbound Off Ramp to SR 32	2	0	1	0.000	0.12	0.24	0.006	0.35	0.90

Source: *Caltrans and Fehr & Peers, 2005*
Bold entries indicate higher than average accident rates

Most accidents at the State Route 99/State Route 32 interchange were rear-end collisions caused by speeding while accessing the interchange during congested conditions. Fourteen accidents occurred in a construction-repair zone. Most accidents at the State Route 99 Southbound On-Ramp/9th Street intersection were broadside collisions between left turn vehicles and vehicles traveling straight (eastbound on 9th Street).

TABLE 15 - ACCIDENT RATES FOR STATE ROUTE 32 MAINLINE: 2001-2004									
	Number of Accidents			Actual Accident Rate			Average Accident Rate		
Location	Total	Fatal	Injury	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
SR 99 SB Offramp/ SR 32 (E. 8th Street)	6	0	4	0.000	**.23**	.34	.002	.19	.43
SR 99 SB Onramp/ SR 32 (E. 9th Street)	5	0	4	0.000	**.26**	.33	.002	.19	.43
SR 99 NB Onramp/ SR 32 (E. 8th Street)	1	0	0	0.000	.00	.10	.002	.09	.22
SR 99 NB Offramp/ SR 32 (E. 9th Street)	4	0	3	0.000	.14	.18	.002	.19	.43
Fir Street/SR 32 (E. 8th Street)	3	0	2	0.000	.14	.21	.002	.19	.43
Fir Street/SR 32 (E. 9th Street)	2	0	2	0.000	.14	.14	.002	.09	.22
Forest Avenue/SR 32	9	0	7	0.000	**.50**	**.64**	.002	.19	.43
El Monte Avenue/SR 32	1	0	1	0.000	.08	.08	.002	.09	.22
Bruce Road/SR 32	3	0	3	0.000	**.25**	.25	.003	.23	.58
Yosemite Drive/SR 32	0	0	0	0.000	.00	.00	.004	.14	.34
Source: *Caltrans and Fehr & Peers, 2005* Bold entries indicate higher than average accident rates									

Although State Route 32 at Forest Avenue has an accident rate significantly higher than expected compared to the state-wide average accident rate, the intersection was modified in 2005 to provide protected left-turn phasing (it had permitted left-turn phasing prior to the improvements). Before the modifications, the left-turn vehicles did not yield the right of way to through vehicles when the signal was permissive, which resulted in broadside accidents. The accident concentration at this intersection may decrease due to the conversion to protected left turn phasing. Another intersection with an above average accident rate is State Route 32 at Bruce Road. The accidents that occur at this intersection appear to be minor and include either broadside or rear-end collisions.

2. Environmental Checklist

TRANSPORTATION/CIRCULATION FACTORS – Would the project or its related activities result in:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Traffic volumes which exceed established Level of Service (LOS) standards on roadway segments or at intersections, or which do not meet applicable safety standards? Based on General Plan policies, significant impacts would generally result if traffic exceeded LOS C on residential streets, LOS D on arterial and collector streets/intersections, and (under specific circumstances) LOS E in built-out areas served by transit.		X		

TRANSPORTATION/CIRCULATION FACTORS – Would the project or its related activities result in:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
2) The absence of bikeway facilities in the general locations identified in the General Plan, consistent with guidelines in the *Chico Urban Area Bicycle Plan*, or failure to meet applicable design requirements and safety standards?				X
3) Travel characteristics which are not consistent with standards established in the *Butte County Congestion Management Plan* (CMP), or other General Plan policies related to Transportation Systems Management (TSM)?				X
4) Substantial impact on existing or proposed public transit systems including rail and air traffic?			X	
5) Effects on existing parking facilities or demand for new parking not provided for by the project?				X
6) Increase traffic hazards to motor vehicles, bicycles, pedestrian or other traffic?				X
7) A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X

3. Discussion

The results of the level of level of service analysis for Year 2010 and Year 2030 Conditions are summarized in Table 16 and Table 17, respectively.

TABLE 16 – INTERSECTION OPERATIONS FOR 2010 CONDITIONS						
Intersection	No Project			With Project		
	AM	PM	SAT	AM	PM	SAT
SR 99 SB Offramp/SR 32 (E. 8th Street)	30 / C	**57 / E**	10 / A	16 / B	13 / B	12 / B
SR 99 SB Onramp/SR 32 (E. 9th Street)	16 / B	**86 / F**	11 / B	10 / A	18 / B	10 / A
SR 99 NB Onramp/SR 32 (E. 8th Street)	17 / B	12 / B	8 / A	7 / A	6 / A	7 / A
SR 99 NB Offramp/SR 32 (E. 9th Street)	34 / C	53 / D	11 / B	14 / B	12 / B	9 / A
Fir Street/SR 32 (E. 8th Street)	**84 / F** (> 120) / (F)	12 / B (39) / (E)	5 / A (13) / (B)	16 / B	14 / B	11 / B
Fir Street/SR 32 (E. 9th Street)	**55 / F** (> 120) / (F)	**44 / E** (> 120) / (F)	1 / A (16) / (C)	5 / A	6 / A	3 / A
Forest Avenue/SR 32	**79 / E**	**103 / F**	46 / D	21 / C	24 / C	22 / C
El Monte Avenue/SR 32	49 / D	17 / A	12 / A	17 / B	9 / A	8 / A
Bruce Road/SR 32	**95 / F**	53 / D	33 / C	22 / C	21 / C	18 / B
Yosemite Drive/SR 32	17 / B	15 / B	14 / B	18 / C	18 / C	15 / C
Vehicle Hours of Delay	*205*	*223*	*82*	*84*	*94*	*57*
Reduction in Vehicle Hours of Delay				*59%*	*58%*	*30%*

Notes: Level of service (LOS) and control delay (in seconds per vehicle) are reported. Bold and underline font indicate unacceptable LOS E or LOS F conditions. Average delays greater than two minutes per vehicle are not reported due to model insensitivity under extremely congested conditions.

XX (YY) = Average delay (longest delayed approach) at the intersection.

Source: Fehr & Peers, 2005

TABLE 17 – INTERSECTION OPERATIONS FOR 2030 CONDITIONS						
Intersection	No Project			With Project		
	AM	PM	SAT	AM	PM	SAT
SR 99 SB Offramp/ SR 32 (E. 8th Street)	26 / C	**107 / F**	14 / B	25 / C	17 / B	9 / A
SR 99 SB Onramp/ SR 32 (E. 9th Street)	11 / B	**> 180 / F**	11 / A	12 / B	50 / D	14 / B
SR 99 NB Onramp/ SR 32 (E. 8th Street)	7 / A	6 / A	6 / A	8 / A	6 / A	5 / A
SR 99 NB Offramp/ SR 32 (E. 9th Street)	16 / B	33 / C	10 / B	16 / B	15 / B	10 / A
Fir Street/SR 32 (E. 8th Street)	17 / B	14 / B	12 / B	24 / C	16 / B	14 / B
Fir Street/SR 32 (E. 9th Street)	4 / A	35 / C	3 / A	4 / A	5 / A	3 / A
Forest Avenue/SR 32	**> 120 / F**	**> 120 / F**	**> 120 / F**	27 / C	27 / C	22 / C
El Monte Avenue/SR 32	**> 120 / F**	**> 120 / F**	**> 120 / F**	22 / C	17 / A	11 / A
Bruce Road/SR 32	**> 120 / F**	**> 120 / F**	**> 120 / F**	28 / C	34 / C	25 / C
Yosemite Drive/SR 32	**> 120 / F**	**59 / F**	25 / D	23 / C	22 / C	19 / C
Vehicle Hours of Delay	***412***	***585***	***332***	***137***	***186***	***97***
Reduction in Vehicle Hours of Delay				***67%***	***68%***	***71%***

Notes: Level of service (LOS) and control delay (in seconds per vehicle) are reported. Bold and underline font indicate unacceptable LOS E or LOS F conditions. Average delays greater than two minutes per vehicle are not reported due to model insensitivity under extremely congested conditions.

Vehicle hours of delay is for the entire simulated roadway network.

Source: Fehr & Peers, 2005

4. Impacts

The results indicate that:

- The proposed project will provide sufficient capacity to accommodate traffic from approved and planned development on and near the State Route 32 corridor east of Fir Street to Yosemite Drive.

- The proposed project is consistent with the City's General Plan and will agree with Caltrans' Traffic Concept Report with its next update.

- The proposed project will help maintain and improve connectivity between the neighborhoods on either side of State Route 32 by providing signalized access or improving existing signalized access for multiple modes of travel across State Route 32 by providing ADA access, coordinated signals, and protected pedestrian movements.

- The proposed project is consistent with the State Route 99/State Route 32 Auxiliary Lane Study.

- Signals at all study intersections, with signal interconnect to coordinate signal timings, provide the lowest delays through the corridor.

- The project would accommodate expected queues within appropriate turn pockets.

Without the proposed project, congestion would increase and degrade the operation of State Route 32 and State Route 99 in the project area. The proposed project would improve operations through the study corridor to an acceptable LOS D or better.

Traffic and Circulation Mitigation Measures

1. *The contractor shall prepare a Transportation Management Plan (TMP) for the project. Consistent with Caltrans policy and procedures, the design of the project and the TMP, especially staging and traffic control systems, will be coordinated closely with the Caltrans District 3 TMP coordinator. TMP strategies that will be considered for the project include Construction Zone Enhanced Enforcement Patrol, lane closure, and maintaining traffic. Most of the construction will take place behind temporary K-railing with traffic attenuators placed as necessary.*

N. UTILITIES AND SERVICE SYSTEMS

1. Environmental Setting

PG&E provides the Chico area with electricity and natural gas services. Cal Water is the sole water service provider in the Chico area, providing 24,279 water service connections to customers from 64 deep wells and five storage tanks (as of December 2001). The Chico Water Pollution Control Plant (WPCP) receives and treats wastewater from approximately 55,000 people in the Chico area. The existing drainage along State Route 32 consists of roadside ditches that generally parallel the road and convey flow to Dead Horse Slough. The nearest landfill is the Neal Road Landfill located approximately 10 miles south of the project area. The City of Chico compost facility is located near the Chico Municipal Airport, approximately 0.5 mile north of Eaton Road. There are several utilities that cross State Route 32 in the project area including a Western Area Power Administration 230 kV transmission line just east of the Yosemite Drive intersection; however, there are no known utilities that parallel the facility.

2. Environmental Checklist

UTILITIES – Would the project or its related activities have an effect upon or result in a need for new systems or substantial alterations to the following utilities:	Potentially significant impact	Less than significant impact with mitigation incorporated	Less than significant impact	No impact
1) Water for domestic use and fire protection?		X		
2) Natural gas, electricity, telephone, or other communications?			X	
3) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
4) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
5) 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
6) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
7) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
8) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
9) Comply with federal, state, and local statues and regulations related to solid waste?				X

3. Discussion

The proposed project is the widening of State Route 32. The project does not include or involve any components related to solid waste. As described in the project description, the proposed project includes only minor modifications to the existing drainage system. Roadway drainage would continue to sheet flow to the adjacent roadside ditches. It is anticipated that culverts would be constructed under Forest Avenue, El Monte Avenue and Bruce Road to connect the roadside drainage system to Dead Horse Slough. The project also includes extending the South Fork Dead Horse Slough culvert just east of the Bruce Road intersection, and constructing the new bridge across Dead Horse Slough.

There are several utilities that cross State Route 32 in the project area including water and wastewater pipes, electrical lines and a Western Area Power Administration 230 kV

PLANNING DIRECTOR DETERMINATION:

On the basis of this initial evaluation:

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

_____ I find that although the proposed project could have a significant adverse effect on the environment, there will not be a significant adverse effect because the project proponent has agreed to implement all the mitigation measures identified in this Initial Study. A MITIGATED NEGATIVE DECLARATION will be prepared.

_____ I find that the proposed project MAY have a significant adverse effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

__X__ I find that the proposed project MAY have an adverse impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on the 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 adverse effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Clif Sellers — 2/6/2007

Signature — Date

Clif Sellers for Stephen Peterson, Planning Services Director

Printed Name

CHAPTER 4 LIST OF PREPARERS

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CHAPTER 5 REFERENCES CITED

California Department of Transportation
1997 Transportation Concept Report for State Route 32

California Department of Transportation
2002 Guidelines for Applying Traffic Microsimulation Modeling Software

Dossey, Gary. District 3 Highway Safety Traffic Operations. Caltrans District 3 Marysville. Communication from Gary Dossey to John Holder dated 10/2/06 re: But-32 Widening Project (Tree Removal).

EMKO Environmental, Inc.
2006 Hazardous Materials Report for Humboldt Road Burn Dump Area, State Route 32 Widening Project, State Route 99 to Yosemite Drive, Chico, CA

Mayer, K.E. and W.F. Laudenslayer
1988 A Guide to Wildlife Habitats of California.

Skinner, M. and B. Pavlik
2001 Inventory of rare and endangered vascular plants of California, 5th edition. California Native Plant Society. Sacramento, CA.

Taber Consultants
2005 Preliminary Geotechnical Report, State Route 32 Widening Project, City of Chico, CA.

Taber Consultants
2006 Initial Site Assessment, State Route 32 Widening Project, City of Chico, CA.

Transportation Research Board
2000 Highway Capacity Manual

U.S. Bureau of the Census
2000

Wetland Training Institute
1995 Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual. (WTI 95-3). Poolsville, MD.

WRECO
2006a Location Hydraulic Study for the State Route 32 Widening Between Fir Street and Yosemite Drive, at Dead Horse Slough and South Fork Dead Horse Slough in the City of Chico, California. City of Chico, CA. April 2006.

WRECO
2005b Bridge Design Hydraulic Study for the State Route 32 Widening Between Fir Street and Yosemite Drive at Dead Horse Slough and South Fork Dead Horse Slough in the City of Chico, California. April 2006.

TECHNICAL APPENDICES

APPENDIX A. MITIGATION MONITORING PROGRAM

Mitigation Monitoring Program

When an agency makes findings on significant effects that are identified in an Initial Study, Mitigated Negative Declaration or an Environmental Impact Report (EIR), the agency must adopt a program for reporting and monitoring mitigation measures that were adopted or made conditions of approval (Public Resources Code Section 21081.6[a], California Environmental Quality Act [CEQA] Guidelines Sections 15091 [d] and 15097). To that end, the City of Chico, as the lead agency under CEQA, must adopt a mitigation monitoring program or plan for the State Route 32 Widening Project.

This mitigation monitoring plan is designed to ensure that the mitigation measures identified in the Initial Study for the project are implemented. These measures are detailed in the following table, organized by topic in the same order as the contents of the Initial Study. The City is responsible for implementation of the mitigation measures listed in this mitigation monitoring plan.

For each mitigation measure, Table 1 identifies:

- mitigation measure,
- timing,
- implementing party and funding source, and
- monitoring party.

It should be noted that this mitigation monitoring plan has been prepared prior to receipt of the various permits that are required for the project. Differences, if any, between the mitigation measures included in this report and the requirements of the permitting agencies shall be resolved by the Chico in consultation with Caltrans and the most stringent requirements shall be met.

Mitigation Measure Contained in the Initial Study	Timing	Implementing Party and Funding Source	Monitoring Party
Aesthetics			
1. The City shall request an Advisory Design Exception from Caltrans to retain large existing trees located more than 17 feet from edge of traveled way (7 feet from edge of pavement) along the project corridor within the state right-of-way. *Note: the design exception was recently approved by Caltrans.*	Prior to construction	City	City
2. Consistent with Caltrans' policies, the City shall minimize vegetation removal by requiring the construction contractor to prune vegetation and limb overhanging trees to the maximum extent practicable (prune rather than remove) throughout the project corridor.	Prior to construction and during construction	City and contractor	City
3. In coordination with Caltrans, the City shall develop and implement a landscape plan for the project extent of State Route 32 to include vegetation planting adjacent to the roadway limits in areas where extensive vegetation removal is required. The landscape plan shall be developed by a licensed landscape architect and be designed consistent with all applicable City of Chico General Plan principles and polices and Caltrans standards related to the location, type, size, and extent of woody vegetation permitted within a state right-of-way. Caltrans and the City shall establish a maintenance agreement, as necessary, for the long-term maintenance of the landscaping. The landscape plan will be prepared in consultation with biologists who are familiar with the biological resources along the project corridor; see biological resources mitigation measures.	Prior to construction	City	City
4. If sound walls are constructed as part of the proposed project, the City, as required by City of Chico General Plan Policy N-I-13, shall landscape the State Route 32 face of all sound walls. The City, in coordination with Caltrans, shall develop and implement a sound wall landscape plan meeting Caltrans policies related to location, size, and type permitted within State right-of-way focused on softening the visual appearance and providing visual variety and a natural component to the sound walls. The sound wall landscape plan shall be developed by a licensed landscape architect and shall include maintenance and or replacement planting sufficient to achieve at least 75 percent survival of all plantings 5 years following installation.	Prior to construction, during construction and after construction is complete	City	City
5. The City shall provide each homeowner with rear yards abutting the State Route 32 Widening Project with information on free and/or low cost tree and landscaping programs, including but not limited to, state and federal forest service tree planting programs, local energy purveyor shade tree programs, native plant programs, and other such programs that may be locally available, such that residents affected by the extensive vegetation removal may, at their own cost and discretion, effectively enhance their rear yard landscaping to offset either vegetation removal or the proposed installation of sound walls.	Prior to construction	City	City

Air Quality			
1. The City and the Butte County AQMD require measures to minimize fugitive dust during construction activities. The following construction dust and equipment exhaust emissions measures shall be required, as appropriate, during all phases of construction work. a. The contractor shall prepare and submit a fugitive dust control plan to the City and Butte County AQMD acknowledging responsibility for implementing the fugitive dust control mitigation measures. The plan will be submitted to the district for approval 30 days prior to the commencement of construction. The plan will include the following measures.	Prior to construction	Construction	City
i) The contractor shall water all active construction sites at least twice daily. Frequency shall be based on the type of operation, soil, and wind exposure. Water will be applied at rates that do not result in runoff from the construction area.	Construction	Construction	City
ii) The contractor shall apply chemical soil stabilizers (compatible with adjacent vernal pools and wetlands) to inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). Chemical soil stabilizers will be applied at rates that do not result in runoff off the construction area.	Construction	Construction	City
iii) The contractor shall limit on-site construction vehicle speeds to 15 mph on unpaved areas.	Construction	Construction	City
iv) The contractor shall suspend land clearing, grading, earthmoving, or excavation activities when winds exceed 20 mph averaged over 1 hour.	Construction	Construction	City
v) The contractor shall apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations, and the area shall be hydroseeded.	Construction	Construction	City
vi) The contractor shall hydroseed all disturbed areas as soon as possible.	Construction	Construction	City
vii) The contractor shall cover all inactive soil storage piles.	Construction	Construction	City
viii) During initial grading, earthmoving, or site preparation, the contractor may be required to construct a paved (or dust-palliative treated) apron, at least 100 feet in length, onto the project site from adjacent staging areas, if applicable.	Construction	Construction	City
ix) The contractor shall sweep or wash paved streets adjacent to the project site at the end of each day as necessary to remove excessive accumulations of silt and/or mud which may have accumulated as a result of construction activities.	Construction	Construction	City
x) The contractor shall post a publicly visible sign, listing the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 24 hours. The telephone number of Butte County AQMD shall also be visible to ensure compliance with Butte County AQMD Rule 201 and 205 (Nuisance and Fugitive Dust Emissions).	Construction	Construction	City

xi) The contractor will provide temporary traffic control as appropriate during all phases of construction to improve traffic flow.	Construction	Contractor	City
xii) The contractor will maintain equipment engines in good condition and in proper tune according to manufacturer's specifications.	Construction	Contractor	City
xiii) The contractor shall not let construction equipment idle for long periods (over 15 minutes).	Construction	Contractor	City
xiv) The contractor shall schedule construction activities that direct traffic flow to off-peak hours as much as practicable.	Construction	Contractor	City
xv) The contractor shall minimize the area disturbed by construction at all times.	Construction	Contractor	City
b. The contractor shall implement the following measures to reduce diesel emissions during construction. i) Diesel equipment idling shall be minimized. ii) Diesel equipment shall be located away from sensitive receptors. iii) As feasible, newer, cleaner diesel equipment will be used, rather than older equipment.	Construction	Contractor	City
2. The City of Chico shall work with the Butte County Association of Governments to ensure that the project is included in the Regional Transportation Plan and other air quality conformity documents prior to approval of the environmental document.	Prior to project approval	City	City
Biological Resources			
The following measures will be reviewed and updated, as necessary, after receipt of the Section 404 permit from the U.S. Army Corps of Engineers, completion of ESA consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game, and receipt of the Section 401 water quality certification from the Regional Water Quality Control Board. 1. The City will obtain a Section 404 permit from the Corps to conduct activities in waters of the U.S. (jurisdictional wetlands) before construction begins.	Prior to construction	City	City
2. The City will obtain a Section 401 water quality certification from the Regional Water Control Board before construction begins.	Prior to construction	City	City
3. The City will obtain a Section 1602 streambed alteration agreement from the DFG before construction of Dead Horse Slough bridge or work on the South Fork Dead Horse culvert.	Prior to construction	City	City
4. The contractor will be responsible for understanding and following the guidelines set forth in all the permits, including the Section 404 permit, Section 401 water quality certification, Section 1602 streambed alteration agreement, and Section 2080.1 consultation.	Prior to and during construction	Contractor	City

5. The City will comply with final compensation requirements and mitigation ratios for the project as determined through the Section 7 consultation between the Corps and the USFWS. The exact cost to purchase preservation credits for project-related impacts will be determined at the time of purchase. Mitigation credits will be purchased and/or a conservation area and management plan will be established prior to any ground-disturbing activities in the project area, including grading.	Prior to construction	City	City
6. The City will obtain an Incidental Take Permit or Consistency Determination from the DFG under Section 2080.1 of the California Endangered Species Act as required for impacts to BCM and GGS.	Prior to construction	City	City
7. The final design plans will be reviewed by the City to ensure that all conditions that are attached to the state and federal permits are implemented prior to or during construction.	Prior to construction	City	City
8. The City shall include a copy of all permits within its construction documents making the contractor responsible for implementing all requirements and obligations included within all permits, including the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion and other permits. A copy of the contract documents containing the biological opinion and other permits also will be provided to the Chief of Endangered Species (Central Valley) at the U.S. Fish and Wildlife Service Sacramento office.	Prior to construction	City	City
9. At least 30 days prior to initiating construction activities, the contractor shall submit the names and curriculum vitae (resume) of the biological monitor(s) for the proposed project to the City, USFWS and DFG.	Prior to construction	Contractor	City
10. The contractor will be responsible for providing worker awareness training. A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a USFWS-approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. The program shall provide workers with information on: a. Their responsibilities with regard to BCM, vernal pool crustaceans, and GGS. b. An overview of the life-history of these species. c. The importance of irrigation canals, marshes/wetlands, and seasonally flooded areas, such as rice fields, to the GGS. d. Information on take prohibitions and that unlawful take of these species or destruction of habitat is a violation of the Endangered Species Act. e. Protections afforded these species under the ESA f. An explanation of the relevant terms and conditions of the biological opinion. g. Written documentation of the training must be submitted to the USFWS within 30 days of the completion of training. As needed, training shall be conducted in Spanish for Spanish language speakers. h. The City inspector and other City staff working on the project will participate in the worker awareness training.	Prior to and during construction	Contractor	City
11. The contractor will be responsible for hiring a qualified biologist to inspect construction-related activities at the project site to ensure that no unauthorized take of federally-listed species or destruction of their habitat occurs. The biologist shall be available for monitoring throughout all phases of construction that may result in adverse effects to BCM, GGS, or vernal pool crustaceans.	Prior to and during construction	Contractor	City

12. Prior to the commencement of construction activities, a qualified biologist will be hired by the contractor to determine the location of high visibility fencing to be erected around the habitats of the federally listed species to identify and protect these Environmentally Sensitive Areas (ESAs) from encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing shall be inspected before the start of each work day and maintained by the contractor until completion of the project. The fencing may be removed only when construction of the portion of the project adjacent to the resource is completed. a. Fencing will be established 2 feet from the edge of pavement or a minimum of 50 feet from the suitable vernal pool crustacean habitat. b. Fencing will be established 2 feet from the edge of pavement from the suitable BCM habitat. c. At the discretion of the biologist, fencing will be established around Dead Horse Slough to minimize the amount of disturbance to the creek channel.	Prior to and during construction	Contractor	City
13. Signs will be posted every 100 feet along the edge of the ESAs. The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction. The signs will have the following information: "This area is habitat of federally-threatened and/or endangered species and must not be disturbed. These species are protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines and imprisonment."	During construction	Contractor	City
14. The contractor will be responsible for complying with all work windows in regards to special-status species. Work windows for this project include: a. Work in GGS habitat (within 200 feet of Dead Horse Slough and South Fork Dead Horse Slough) must be conducted between May 1 and October 1 (this is the active period for GGS). b. During January-February of the construction year, the bridge and culvert will be inspected by a qualified biologist and all old swallow nests will be removed. Swallow nesting during the construction year will be prevented (see later mitigation measures). c. Tree removal during the raptor nesting season (generally March 1 through September 15) will be avoided; tree removal during the raptor nesting season can only occur after a pre-construction raptor survey by a qualified biologist. d. Construction activity within 250 feet of active raptor nests shall be minimized.	Prior to and during construction	Contractor and City	City
15. The contractor is responsible for notifying the Sacramento Fish and Wildlife Office within one (1) working day of the finding of any dead federally-listed species or any unanticipated harm to the species addressed in the Section 7 biological opinion. The Service contact person for this is the Chief, Endangered Species Division at (916) 414-6620 and the Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.	During construction	Contractor	City

16. The contractor and the City must report to Caltrans, Corps and the Service immediately (within one working day) any information about take or suspected take of federally-listed species not authorized in the Section 7 biological opinion. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.	During construction	Contractor	City
17. Any contractor or employee who during routine operations and maintenance activities inadvertently kills or injures a State-listed species must immediately (within one working day) report the incident to the City, Caltrans and California Department of Fish and Game. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.	During construction	Contractor	City
18. The City will compensate for direct impacts to fresh emergent wetlands and riparian habitat, and other waters of the U.S. at a ratio of 1:1 as approved by the Corps in the Section 404 permit. The City will purchase 0.374 acre of seasonal wetland mitigation credits at a wetland mitigation bank or mitigate offsite at a Corps-approved location. The estimated mitigation cost per acre is $150,000; the estimated cost to purchase 0.374 acre of mitigation is $56,100. The actual fee paid will be that in effect at the time of payment.	Prior to construction	City	City
19. The City will compensate for indirect impacts to potential habitat for federally listed vernal pool tadpole and fairy shrimp by preserving additional habitat for these species at a ratio of 2:1 (2 acres preserved for every 1 acre of habitat affected). The exact amount of impact and mitigation must be confirmed after 65% preliminary design is completed. The following three preservation options are being considered by the City: a. Purchase vernal pool preservation credits from Dove Ridge Mitigation Bank. The estimated mitigation cost per acre $85,000; the estimated cost to preserve vernal pool habitat is $159,630. The actual fee paid will be that in effect at the time of payment. b. Establish vernal pool habitat preserve at the proposed Bidwell Ranch conservation area located north and east of the Sycamore Creek Diversion channel, about 2 miles north of the project. As part of the mitigation plan for the Chico Municipal Airport project, Bidwell Ranch has been proposed by the City as a suitable vernal pool conservation area; however, USFWS approval has not been obtained and a final management plan must be prepared. A final management plan would be developed by the City and approximately 50 acres of vernal pool habitat would be available for preservation credits at Bidwell Ranch after the City's existing mitigation obligations for the Chico Municipal Airport project are met. c. Establish a vernal pool habitat preserve within a USFWS pre-approved off-site location. The City would be responsible for developing a monitoring plan, placing the property in a conservation easement, and assuring an endowment fund would be available to appropriately manage the property in perpetuity.	Prior to construction	City	City

20. The City will compensate for direct effects to potential habitat for federally listed vernal pool tadpole and fairy shrimp by creating suitable habitat at a ratio of 1:1 (1 acre created for every 1 acre of habitat affected), for a total of 0.242 acre per the predetermined ratios set forth by the USFWS programmatic for Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California. The City proposes to purchase vernal pool creation credits from a USFWS-approved mitigation bank if credits become available prior to the start of construction or create features within in a USFWS approved off-site location. The estimated mitigation cost per acre is $150,000; the estimated cost is $36,300. The actual fee paid will be that in effect at the time of payment.	Prior to construction	City	City
21. The City will compensate for 0.0001 acre of direct impact and 0.1829 acre of indirect impact to BCM and/or BCM suitable habitat by preserving and/or creating additional habitat for BCM, using compensation ratios previously approved by the USFWS or a combination of the following options as described below. The City will preserve directly impacted BCM habitat at a ratio of 19:1, for a total of 0.0019 acre (83 square feet), and indirectly impacted BCM habitat at a ratio of 5:1, for a total of 0.915 acre. Preservation credits must be acquired from a USFWS-approved mitigation bank or conservation area. The exact amount of impact and mitigation must be confirmed after preliminary engineering design is completed. The following three preservation options are being considered by the City: a. Purchase 0.917 acre of BCM credits (if available at the time of purchase) from Dove Ridge Mitigation Bank. The estimated cost to preserve one acre of BCM at Dove Ridge is $170,000 per acre or$183,223. The actual fee paid will be that in effect at the time of payment. b. Preserve and/or create 0.917 acre of BCM at the proposed Bidwell Ranch conservation area. As part of the mitigation plan for the nearby Chico Municipal Airport project, Bidwell Ranch has been proposed by the City as a suitable BCM conservation area; however, a final management plan must be prepared. A final management plan would be developed by the City prior to the start of construction on the State Route 32 widening. c. Establish 0.917 acre of new BCM preserve within a USFWS pre-approved off-site location. The City would be responsible for developing a monitoring plan, placing the property in a USFWS-approved conservation easement, and assuring an endowment fund would be available to protect the property in perpetuity.	Prior to construction	City	City
22. Per the GGS programmatic agreement between the Corps and USFWS, the City will mitigate for 2.25 acres of direct impacts to GGS upland habitat at a ratio of 3:1. Temporary disturbances will be limited to one construction season (May to October), and on-site restoration in those areas will act as mitigation per the GGS programmatic. These calculations are based on 35% design. Once the project design has reached 65% design, the numbers will be recalculated and submitted to the USFWS to assess the required mitigation. The estimated mitigation cost per acre is $56,250 or $379,688. The actual fee paid will be that in effect at the time of payment.	Prior to construction	City	City

23. The City will review the construction plans and specifications to ensure that the following terms and conditions are included for protecting GGS during construction: a. All construction activity within GGS habitat shall be conducted between May 1 and October 1. This is the active period for GGS and direct impacts are lessened, because snakes are actively moving and avoiding danger. More danger is posed to snakes during their inactive period, because they are occupying underground burrows or crevices and are more susceptible to direct effects, especially during excavation. If construction is required between October 2 and April 30, the contractor must contact the USFWS Sacramento Fish and Wildlife Office 30 days prior to these dates to determine if additional measures are necessary to minimize and avoid take. b. Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat. c. Within 24 hours prior to commencement of construction activities, the site shall be inspected by a qualified biologist who is approved by the USFWS's Sacramento Office. The biologist will provide the USFWS with a field report form documenting the monitoring efforts within 24 hours of commencement of construction activities. The monitoring biologist needs to be available thereafter if a snake is encountered during construction activities. The monitoring biologist shall have the authority to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. Giant garter snakes encountered during construction activities should be allowed to move away from construction activities on their own. Capture and relocation of trapped or injured individuals can only be attempted by personnel or individuals with current USFWS recovery permits pursuant to Section 10(a)1(A) of the Act. The biologist shall be required to report any incidental take to the USFWS immediately by telephone at (916) 414-6600 and by written letter addressed to the Chief, Endangered Species Division, within one working day. d. The project extent shall be re-inspected by the biologist whenever a lapse in construction activity of two weeks or greater has occurred. e. Clearing of wetland vegetation will be confined to the minimal area necessary to excavate toe of bank for riprap or fill placement. Excavation of channel for removal of accumulated sediments will be accomplished by using equipment located on and operated from top of bank, with the least interference practical for emergent vegetation. f. Movement of heavy equipment to and from the project extent shall be restricted to established roadways to minimize habitat disturbance. g. Preserved GGS habitat shall be designated as an Environmentally Sensitive Area. The qualified biologist shall determine the need for ESA fencing for these areas. h. After completion of construction activities, any temporary fill and construction debris shall be removed and, wherever feasible, disturbed areas shall be restored to pre-project conditions. Restoration work may include replanting emergent vegetation.	Prior to and during construction	Contractor	City

i. All wetland and upland areas created and provided for the GGS shall be protected in perpetuity by a USFWS-approved conservation easement or similarly protective covenants in the deed. The conservation easement on the mitigation habitat shall be recorded at the county recording office within 60 days of groundbreaking. The easement/deed, including a title report for the land area, shall be reviewed and approved by the USFWS prior to recording in the appropriate County Recorders Office(s). A true copy of the recorded easement/deed shall be provided to the USFWS within 30 days after recordation. Standard examples of deed restrictions and conservation easements are available from the USFWS upon request.	Prior to construction	City	City
24. The City will mitigate for the loss of Swainson's hawk foraging habitat by either purchasing credits at a DFG-approved mitigation bank, purchasing or preserving Swainson's hawk foraging habitat, or by contributing to the Citywide in-lieu fund for the future purchase of Swainson's hawk habitat. The amount of mitigation will be determined in consultation with DFG and will depend on the proximity of known nest trees to the project site. (*Note: The City may ask DFG if this mitigation may be satisfied in whole or part by the BCM mitigation.*) The loss of Swainson's hawk foraging habitat is estimated at 15.46 acres with a replacement ratio of 0.75 acre mitigated for each acre lost (0.75:1). The mitigation cost per acre to contribute to the City's in-lieu fund is $3,000; the estimated cost of this mitigation is $62,438. The actual fee paid will be that in effect at the time of payment.	Prior to construction	City	City

25. Work on the existing Dead Horse Slough bridge and the existing South Fork Dead Horse Slough culvert will be prohibited during the swallows nesting season (generally March 1 to August 1) if swallows are nesting on the structures. This work window can be avoided if all old swallow nests are removed from the structures prior to March 1 of the construction year and no new nests are constructed. The contractor will hire a qualified biologist to inspect the bridge and the culvert at South Fork Dead Horse Slough during January-February of the construction year, and either net the structures or install "bird tape" to prevent swallow nesting. Old nests can be removed with water and/or by knocking them down with poles and scrapers. Since swallows are strongly attracted to old nests or remnants of nests, all traces of mud should be removed. After all old nests have been removed, one of the following measures should be implemented: a. Exclusionary netting with a diameter of ¾-inch or less (high density, ultraviolet stabilized polyethylene twine) shall be installed on the underside of the structures and extended 3 to 4 inches from the sides of the structures so as to prevent swallows from gaining access. b. "Bird tape" shall be installed prior to egg laying (late Feb to early March). After one of these measures are implemented, a qualified biologist will monitor the bridge and culvert structures on a regular basis (every 2-3 days, especially if construction is not ongoing) for nest starts and remove any nest starts with a pressure washer or shovel; whichever is the most convenient for the City. The biologist will make sure that no mud or other nesting material remains, because it increases the likelihood that the swallows will continue trying to build nests. The biologist will conduct regular monitoring during the swallows' nesting season (mid-February through August 15), as swallows are persistent nesters.	Prior to and during construction	Contractor and City	City
26. The City will conduct a pre-construction raptor survey in April-May or 30 days prior to construction activities, to determine the presence and location of nesting raptors in the project area. Should nesting raptors be observed and impacted, appropriate mitigation or avoidance measures will be required in consultation with DFG. Direct take of active nests, eggs or birds is prohibited by the Fish and Game Code and measures must be taken to minimize disturbance. Construction should be avoided within 250 feet of active nests during nesting season from March-July.	Prior to and during construction	City	City

27. Per City of Chico 'Standard Mitigation Measures for Sites Containing Oak Trees', all native oak trees over 6 inches in diameter at breast height (DBH) on the project site shall be preserved to the maximum extent practical. Removal of any site trees shall not be permitted without review and approval by the City of Chico Urban Forester. The 65%, 95%, and 100% design drawings shall depict all trees proposed for removal. Any native oak trees that are removed shall be replaced at a two to one landscaping oak tree replacement ratio along the project corridor. Prior to issuance of notice to proceed, the Contractor shall submit a tree preservation plan prepared by a qualified professional to the City Planning Services Department and Urban Forester for review and approval. The Tree Preservation Plan must meet standards outlined in the City's Tree Preservation Measures included in the City of Chico's 'Best Practices Technical Manual'. The Tree Preservation Plan shall also include the location and foliar extent of proposed pruning of tree branches, and the number, location, species, type and size of proposed replacement plantings.	Prior to and during construction	Contractor and City	City
28. The contractor will implement best management practices described in the Storm Water Pollution Prevention Plan to control and prevent the spread of noxious weed infestations.	During construction	Contractor	City
29. The contractor will clean construction equipment of mud and other debris before entering the construction area.	During construction	Contractor	City
30. The contractor will seed all disturbed areas with certified weed-free native mixes where appropriate.	During construction	Contractor	City
31. During construction operations, the number of access routes, number and size of staging areas, and the total area of proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance.	During construction	Contractor	City
32. During construction operations, stockpiling of construction materials, portable equipment, vehicles and supplies will be restricted to the designated construction staging areas and exclusive of the ESAs which must be at least 200 feet from any GGS habitat.	During construction	Contractor	City
33. After construction activities are complete, any temporary fill or construction debris shall be removed and disturbed areas restored and revegetated to their pre-project conditions. An area subject to "temporary" disturbance includes any area that is disturbed during the project, but that, after project completion, will not be subject to further disturbance and has the potential to be revegetated.	During construction	Contractor	City

34. The contractor shall ensure that activities that are inconsistent with the maintenance of the suitability of vernal pool crustacean habitat and the associated on-site watershed are prohibited. These include, but are not limited to: a. The alteration of existing topography that may alter hydrology into habitat for federally-listed vernal pool crustaceans. b. The placement of any equipment within suitable habitat. c. Dumping, burning and/or burying of rubbish, garbage, or any other wastes and fill material. d. The use of pesticides or other toxic chemicals.	During construction	Contractor	City
35. To minimize the introduction of exotic weeds, only certified weed-free straw/hay bales, if bales are used, should be used for erosion control or other purposes at the proposed project.	Prior to and during construction	Contractor	City
Cultural Resources			
The City will include the following conditions in the construction documents for the project. 1. If buried resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground-disturbing activities, the contractor will stop work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City, Caltrans and other appropriate agencies. Further mitigation and/or construction shall be consistent with the recommendations of the archaeologist.	Prior to and during construction	Contractor	City
2. Any cultural resources found during construction will be recorded or described in a professional report and submitted to the Northeast Information Center at CSU Chico. The City will be responsible for preparing the report.	During construction	Contractor	City
3. If human remains are discovered during project construction, the contractor shall stop all work at the discovery location and any nearby area reasonably suspected to overlie adjacent human remains (Public Resources Code, Section 7050.5). The County Coroner shall be contacted to determine if the cause of death must be investigated.	During construction	Contractor	City

4. If the coroner determines that the remains are of Native American origin, it shall be necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of Native American Heritage Commission (Public Resource Code, Section 5097). The coroner shall contact Native American Heritage Commission. The descendents or most likely descendents of the deceased shall be contacted. Work shall not resume until the descendents have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in Public Resource Code, Section 5097.98. Work may resume if the Native American Heritage Commission is unable to identify a descendant or the descendant fails to make a recommendation. If human remains are found, the City and Caltrans will work with the NAHC as described on the NAHC web page regarding the treatment of human remain: http://nahc.ca.gov/profguide.html.	During construction	Contractor and City	City
Geology and Soils			
1. The project will be designed to conform to the conclusions and recommendations of the final geotechnical report as they relate to structural sections, earthwork, sound walls and drainage to mitigate potential geologic and soil constraints.	Prior to construction	City	City
2. The project will be designed to conform to the conclusions and recommendations of the final foundation investigation as it relates to the design and construction of Dead Horse Slough bridge.	Prior to construction	City	City
3. The contractor shall submit and obtain approval of an erosion control plan from the City of Chico. The erosion control plan will be designed to limit the effects of soil erosion and water degradation during construction. This plan will be prepared in accordance with City requirements.	Prior to construction	Contractor	City
4. Construction plans and specifications for all elements of the project shall include provisions for erosion control in the event of non-seasonal or early seasonal rainfall during construction, as well as for disturbed areas that remain unvegetated during the rainy season. In addition, rainy season control measures shall be in place and operational before October 15 of each year.	Prior to and during construction	Contractor	City

Hazardous Materials			
1. A focused site characterization report will be prepared and submitted to Regional Board describing sampling and analysis activities within the State Route 32 right-of-way along the South Branch Dead Horse Slough. Based on the findings of this report, a remedial design and implementation plan will be prepared and submitted to the Regional Board. Any soil found to contain hazardous material concentrations above any federal or state remediation action levels would be classified in accordance with Title 22 of the California Code of Regulations, and removed to a suitable off-site facility. Excavation activities would be conducted in accordance with the approval from Regional Board, the Streambed Alteration Agreement from DFG, and an Authority to Construct permit from Butte County AQMD. If testing indicated that the concentrations were below regulatory action levels, the soil may be used on-site or disposed of at a Class II or Class III landfill.	Prior to construction	City	City
2. The contractor will develop and implement a spill prevention and control program to minimize the potential for—and effects from—spills of hazardous, toxic or petroleum substances during construction of the project. The program would be a component of the Storm Water Pollution Prevention Plan. If a spill is reportable under federal, state, or local regulations, the contractor would notify the City of Chico, Butte County Environmental Health and California Department of Toxic Substances Control, which has spill response and cleanup ordinances to govern emergency spill response. A written description of reportable releases would be submitted to the Regional Water Quality Control Board. This submittal would include a description of the release, including the type of material and an estimate of the amount spilled; the date of the release; an explanation of why the spill occurred; and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form.	Prior to construction	Contractor	City
3. Yellow traffic striping will be removed and disposed of in a manner consistent with the handling of solids containing hazardous levels of metals.	Prior to and during construction	Contractor	City
Hydrology and Water Quality			
1. The project will be designed to conform to the conclusions and recommendations of the Final Location Hydraulic Study Report, Final Bridge Design Hydraulic Study, and Storm Water Data Report.	Prior to construction	City	City

2. The contractor will avoid and minimize potential construction-related water quality impacts through compliance with the Regional Board by preparing and submitting the following water quality permits and plans. a. Enrollment into the National Pollutant Discharge Elimination System (NPDES) Statewide Construction General Permit by submission of a Notice of Intent. b. Preparation of a Storm Water Pollution Prevention Plan (SWPPP) for minimizing and avoiding impacts to water quality during construction activities.	Prior to construction	Contractor	City
3. The contractor will be responsible for understanding and following the guidelines set forth in the Caltrans Storm Water Quality Handbook, Construction Best Management Practices (BMPs) Manual, March 2003 or latest edition. Measures consistent with the current Caltrans' Construction Site BMPs Manual, including the Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Manuals, will be implemented to minimize effects to listed species during construction.	Prior to and during construction	Contractor	City
4. The contractor will prepare a site-specific SWPPP for the project to protect receiving waters from pollution. The SWPPP will include standard sediment and erosion control measures which will include limiting soil disturbances during the winter rainfall season. Given the site-specific conditions of the project area, the SWPPP for this project will generally include limiting soil disturbances during the winter rainfall season of October 15 through April 15 and fully stabilizing disturbed areas prior to December 1. Standard sediment erosion control measures, such as silt fencing, straw bale barriers, sediment traps, or other measures could also directly reduce the offsite transport of sediment from disturbed slopes. Existing vegetation that can be preserved will be identified and flagged or fenced to avoid disturbance. Erosion in disturbed areas will be controlled through the use of grading operations that eliminate direct routes for conveying runoff to drainage channels and use of soil stabilization BMPs, such as mulching, erosion control fabrics, and/or reseeding with grass or other plants where necessary. Standard staging area practices for sediment tracking reduction also will be identified where necessary including vehicle washing and street sweeping. Temporary concentrated flow conveyance systems also will be considered, such as berms, ditches, and outlet flow-velocity dissipation devices to reduce erosion from newly disturbed slopes.	Prior to and during construction	Contractor	City
5. The contractor will regularly inspect and maintain the BMPs in good working order.	During construction	Contractor	City

6. The City will incorporate permanent post-construction BMPs in the project design to avoid or minimize long-term water quality impacts, pursuant to the NPDES storm water permit. Appropriate BMPs for the project site could include stabilization measures such as preservation of existing vegetation, concentrated flow conveyance systems (ditches, berms, drains, flared culvert end sections, outlet protection, and flow-velocity dissipation), and slope roughening or terracing for new cut-and-fill slopes as deemed necessary by the project engineer. Slope protection measures will be implemented to control erosion such as reducing the length of disturbed slopes, reducing the gradient of slopes, and preventing concentrated flow over slope soils. The City will be responsible for long-term inspection and maintenance of the permanent BMPs to ensure that they are maintained in good working order.	Prior to, during and after construction	Contractor and City	City
Noise			
1. The City shall pave State Route 32 with open graded asphalt concrete or a similar type of pavement that will achieve a minimum noise reduction of 3 dBA.	Prior to and during construction	City	City
2. The City shall consider the construction of sound walls along the project corridor as identified in this document. The sound walls must have a minimum height of 6 feet above the height of the edge of travel way to be constructed with this project. If sound walls are constructed as recommended, the impact is considered reduced to a less-than-significant level. If sound walls are not constructed, or are not constructed as recommended in this document, the City shall identify the noise impact as significant and unavoidable.	Prior to construction	City	City

3. Although construction noise is considered less than significant, the following standard construction noise control measures should be required to be implemented by the contractor during construction to reduce the effects of construction noise on adjacent residential land uses. a. Noise-generating activities at the construction site or in areas adjacent to the construction site associated with the project in any way should be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday. Should it become necessary to work on weekends, holidays, or after 7:00 p.m., residents should be notified and noise levels for the needed work should be subject to a special provision that would limit noise levels from construction activities to not exceed 82 dB at 50 feet. b. Equip all internal combustion engine driven equipment with intake and exhaust mufflers, which are in good condition and appropriate for the equipment. c. "Unnecessary" idling of internal combustion engines should be strictly prohibited. d. Avoid staging of construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment, such as air compressors and portable power generators, as far as practical from existing noise sensitive receptors. Construct temporary barriers to screen stationary noise generating equipment when located in areas adjoining noise sensitive land uses. e. Utilize "quiet" air compressors and other stationary noise sources where technology exists. f. Route all construction traffic to and from the project site via designated truck routes. Prohibit construction-related heavy truck traffic in residential areas where feasible. Prohibit construction truck traffic in the project vicinity during non-allowed hours. g. Notify residents, businesses, and schools in the project area of the construction schedule in writing. h. Designate a "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule. (The City should be responsible for designating a noise disturbance coordinator and the contractor should be responsible for posting the phone number and providing construction schedule notices).	Prior to and during construction	Contractor	City

Public Services			
1. The contractor will prepare and implement a coordinated Transportation Management Plan (TMP) for the project that addresses local and Caltrans concerns. The TMP shall be submitted to the City, Caltrans and Chico Unified School District 30 days prior to commencement of construction. The TMP shall be consistent with City and Caltrans policies and procedures. a. The local aspect of the TMP will identify the locations of any temporary detours and signage to facilitate local traffic patterns and through-traffic requirements. b. The Caltrans aspect of the TMP will identify TMP strategies that will be considered for the project include Construction Zone Enhanced Enforcement Patrol, lane closure, and maintaining traffic. Most of the construction along State Route 32 will take place behind temporary K-railing with traffic attenuators placed as necessary. the design of the project and the TMP, especially staging and traffic control systems, will be coordinated closely with the Caltrans District 3 TMP coordinator.	Prior to and during construction	Contractor	City
2. The contractor will provide 10 days notice to emergency service providers (i.e., law enforcement, fire protection, and ambulance service) and the Chico Unified School District of any construction activity that would hinder emergency vehicle response time or access to or from the school.	During construction	Contractor	City
3. The contractor will provide 10 days notice to residents, businesses and the school to minimize construction conflicts. Construction activities will be coordinated to avoid blocking or limiting access to homes, business, and properties to the maximum extent possible. Residents and businesses will be advised about potential access or parking effects before construction activities begin.	During construction	Contractor	City
4. The contractor shall provide a parking plan to accommodate construction equipment and construction workers. For each construction phase, the parking plan will identify sites for construction parking to avoid effects on local residents and businesses.	During construction	Contractor	City
Traffic and Circulation			
1. The contractor shall prepare a Transportation Management Plan (TMP) for the project. Consistent with Caltrans policy and procedures, the design of the project and the TMP, especially staging and traffic control systems, will be coordinated closely with the Caltrans District 3 TMP coordinator. TMP strategies that will be considered for the project include Construction Zone Enhanced Enforcement Patrol, lane closure, and maintaining traffic. Most of the construction will take place behind temporary K-railing with traffic attenuators placed as necessary.	Prior to and during construction	Contractor	City