

BUTTE REGIONAL CONSERVATION PLAN PUBLIC DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT

PREPARED FOR:

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928
Contact: Chris Devine
530.879.2468

PREPARED BY:

ICF International
630 K Street, Suite 400
Sacramento, CA 95814
Contact: Sally Zeff
916.737.3000

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Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
AF	acre-feet
AG	Agricultural Zone
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMMs	Avoidance and minimization measures
ARB	California Air Resources Board
ARP	Aquatic Resources Plan
B	
B	beneficial
BAAQMD	Bay Area Air Quality Management District
BAMM	best available mitigation measures
Basin Plan	Basin Plan for the Sacramento and San Joaquin Rivers Basin
basin plans	Water Quality Control Plans
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
BCDWRC	Butte County Department of Water and Resource Conservation
BCFD	Butte County Fire Department
BCOE	Butte County Office of Education
BCSO	Butte County Sheriff's Office
B-Line	Butte Regional Transit
BLM	Bureau of Land Management
BMOs	basin management objectives
BMPs	best management practices
BO	Biological Opinion
BRCP or Plan	Habitat Conservation Plan/Natural Community Conservation Plan for western Butte County, known as the Butte Regional Conservation Plan
Butte County GMP	Butte County AB 3030 Groundwater Management Plan
CAA	
CAA	Clean Air Act
CAAA	1990 Clean Air Act amendments
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
Caltrans District 3	California Department of Transportation District 3
CARD	Chico Area Recreation and Park District
CAZ	Conservation Acquisition Zone
CBSC	California Building Standards Code
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEHC	California Essential Habitat Connectivity
Central Valley Water Board	Central Valley Regional Water Quality Control Board
CEQ	Council on Environmental Quality

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane
CHHSC	California Health and Human Safety Code
Chico BCMP	Chico Butte County Meadowfoam Preserve
CHP	California Highway Patrol
CIPs	capital improvement plans
CLG	Certified Local Governments
CM	Conservation Measure
CNEL	community noise equivalent level
CNG	compressed natural gas
CNPPA	California Native Plant Protection Act of 1977
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
Construction General Permit	General NPDES Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ)
County	County of Butte
County General Plan 2030	Butte County General Plan 2030
County General Plan EIR	Butte County General Plan 2030 Final EIR
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSAs	community service areas
CTR	California Toxics Rule
CVFPA	Central Valley Flood Protection Act
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CVIFMS	Central Valley Integrated Flood Management Study
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWSC	California Water Service Company
dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DDT	dichlorodiphenyltrichloroethane
Department	U.S. Department of the Interior
DO	dissolved oxygen
DOC	Department of Conservation
DOI	U.S. Department of the Interior
DPH	California Department of Public Health
DPR	California Department of Pesticides Regulation
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
earthquake fault zones	corridors along active faults
EC	electrical conductivity
ECAs	Essential Connectivity Areas
ECC	Emergency Command Center
EFH	Essential fish habitat

EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EMD	Emergency Medical Dispatch
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAR	floor-area ratios
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FRM	flood-risk management
FY	fiscal year
General Dewatering Permit	General Order for Dewatering and Other Low Threat Discharges to Surface Waters
GHG	greenhouse gas
GIS	geographic information system
GMP	Groundwater Management Plan
GPA	general plan amendment
GWP	global warming potential
HCD	Housing and Community Development
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
HRI	Historic Resources Inventory
HVAC	heating, ventilation, and air conditioning
Hz	Hertz
I-5	Interstate 5
IA	Implementing Agreement
IBC	International Building Code
ILF	in-lieu fee
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
ISO	Insurance Services Office
ITPs	incidental take permits
IWRP	Integrated Water Resources Plan
L ₂	noise level exceeded 2 percent of the time
LAFCO	Local Agency Formation Commission
L _{dn}	day-night sound level
LEDPA	least environmentally damaging practicable alternative
L _{eq}	equivalent sound level
LID	Low Impact Development
L _{max}	maximum noise level
L _{min}	minimum sound level
LNG	liquefied natural gas

LOAPUD	Lake Oroville Area Public Utility District
Local Agencies	the County and the Cities of Biggs, Chico and Gridley
LOP	Letter of Permission
LOS	level of service
LP	Local Potential
LTS	less than significant
L _{xx}	Percentile-Exceeded Sound Level
MAA	Management Agency Agreement
MBTA	Migratory Bird Treaty Act
MHMP	Multi-Jurisdictional All-Hazard Pre-Disaster Mitigation Plan
MLDs	most likely descendants
MOA	memorandum of agreement
MOAs	Military Operations Areas
MOU	memorandum of understanding
MRZ	Mineral Resource Zone
MRZ 2	mineral resources of statewide or regional importance
MRZ-2	Mineral Resource Zone 2
MS4	municipal separate storm sewer system
MS4 Permit	General Permit for Municipal Separate Storm Sewer Systems (MS4)
MSAA	Master Streambed Alteration Agreement
N ₂ O	nitrous oxide
NA	insufficient data available to determine the value
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCCPA	Natural Community Conservation Planning Act
NCPA	Northern California Power Agency
Neal Road Facility	Neal Road Recycling and Waste Facility
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NI	no impact
NISC	National Invasive Species Council
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSVPA Plan	Northern Sacramento Valley Planning Area 2006 Air Quality Attainment Plan
NTUs	nephelometric turbidity units
NWPs	nationwide permits

O ₃	ozone
oak zone	elevation below which land cover types dominated by oak trees comprise more than one-half of the land cover present
OHWM	ordinary high water mark
OS	Open Space
PA	Programmatic Agreement
PAL	Provisionally Accredited Levee
Pb	lead particles
PCBs	Polychlorinated biphenyls
PCE	perchloroethylene
PEHL	public and easement habitat lands
PER	Paleontological Evaluation Report
PFCs	perfluorocarbons
PGP	Programmatic General Permit
pH	potential of hydrogen
PIR	Paleontological Identification Report
Planning Agreement	BRCP Planning Agreement
PM	Particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
PMP	Paleontological Mitigation Plan
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
ppm	parts per million
PPMP	Pollution Prevention and Monitoring Program
ppt	parts per trillion
ppv	peak particle velocity
PRC	Public Resources Code
Programmatic General Permit	California Fish and Game Code, a programmatic wetlands permit
PSHA	Probabilistic Seismic Hazards Assessment
Regional Water Boards	Regional Water Quality Control Boards
Reporting Rule	Greenhouse Gas Reporting Rule
RGP	Regional General Permit
RHNPs	Regional Housing Needs Plans
RIP	Regional Improvement Program
RMP	resource management plan
ROD	Record of Decision
ROG	reactive organic gases
ROW	right-of-way
RPW	relatively permanent water
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
S	significant
SAIC	Science Applications International Corporation
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SC-OR	Sewerage Commission—Oroville Region
SEIR	Final Supplemental EIR
SF ₆	sulfur hexafluoride
SHL	State Historical Landmark

SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	Surface Mining and Reclamation Act of 1975
SMM	standard mitigation measures
SO ₂	sulfur dioxide
SOI	Sphere of Influence
SR	State Route
SRAs	State Responsibility Areas
SRBPP	Sacramento River Bank Protection Project
State Water Board	State Water Resources Control Board
STIP	State Transportation Improvement Program
SU	significant and unavoidable
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWANCC	Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers
SWMP	Storm Water Management Plan
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
System Evaluation	Sacramento River Flood Control System Evaluation
SZ	Scientific Zone
TACs	Toxic air contaminants
TAF	thousand acre-feet
TCMs	traffic control measures
TDS	total dissolved solids
TMDL	total maximum daily load
TNW	tributaries of navigable waters
TSS	Total suspended solids
TWS	Thermalito Water and Sewer District
UCMP	University of California Museum of Paleontology
UPAs	Urban Permit Areas
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
V/C	volume-to-capacity
valley	Sacramento Valley
VELB	valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)
VOC	volatile organic compounds
WAPA	Western Area Power Administration
WCWD	Western Canal Water District
WDRs	waste discharge requirements
WWTPs	wastewater treatment plants
YSRCP	Yuba Sutter Regional Conservation Plan

Introduction

The joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the impacts associated with issuing endangered species permits and implementing the joint Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) for western Butte County, known as the Butte Regional Conservation Plan (BRCP or Plan). This EIS/EIR was prepared pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321; 40 Code of Federal Regulations [CFR] 1500.1); the President's Council on Environmental Quality (CEQ) guidelines on implementing NEPA; the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Sections 21000–21178.1); and the State CEQA Guidelines.

Eleven local and state agencies are jointly applying for endangered species permits from state and federal wildlife agencies and include: the County of Butte (County); the Cities of Oroville, Chico, Biggs, and Gridley; the Butte County Association of Governments¹ (BCAG); Western Canal Water District; Biggs–West Gridley Water District; Butte Water District; Richvale Irrigation District; and California Department of Transportation District 3 (Caltrans District 3). These entities are collectively referred to as the Permit Applicants. Together, they are applying for incidental take permits (ITPs) from the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) of 1973, as amended, and from the California Department of Fish and Wildlife (CDFW), pursuant to Section 2835 of the California Fish and Game Code. The ITPs would authorize take of certain state- and federally listed species (i.e., covered species) during the course of otherwise lawful activities (i.e., covered activities).

As a required component of the application for these permits, the Permit Applicants have prepared the BRCP, which serves as an HCP under ESA and an NCCP under the California Natural Community Conservation Planning Act (NCCPA). The BRCP is intended to support the issuance of ITPs with a term of 50 years from USFWS, NMFS, and CDFW, and to develop a long-term conservation plan to protect and contribute to the recovery of covered species and natural communities in the BRCP Plan Area, which is the same as the Permit Area, while allowing for development and maintenance activities that are compatible with local policies and regulations.

This EIS/EIR evaluates the potential impacts of ITP issuance by USFWS, NMFS, and CDFW; approval and execution of the Implementing Agreement (IA) for the BRCP; and implementation of the BRCP by the Permit Applicants (see Chapter 2, *Proposed Action and Alternatives*, for a detailed description of the proposed action). It also evaluates the impacts of other alternatives, including the No Action Alternative (Alternative 1). The purpose of the EIR component of this joint EIS/EIR is to inform member agency decision makers and the public regarding the anticipated significant environmental impacts of the proposed action, potential measures to mitigate these significant impacts, and reasonable alternatives that could reduce the significant environmental impacts of the proposed action to a less-than-significant level. The EIR will be used by the Permit Applicants approving the

¹ BCAG is a joint powers authority formed pursuant to the Joint Exercise of Powers Act, Government Code Sections 6500 et seq. BCAG would be the BRCP Implementing Entity and would be the agency responsible for implementing the BRCP.

BRCP to comply with CEQA. The EIR will also be used by CDFW to comply with CEQA in issuing to the Permit Applicants the state NCCPA permit. The purpose of the EIS component of this joint EIS/EIR is to inform the two federal agencies and the public of the effects on the human environment that would result from issuance of the ITPs to these local and state entities and from implementation of the BRCP. USFWS and NMFS will use the EIS to comply with NEPA for their issuance of ITPs to the Permit Applicants. See Section 1.3, *Purpose and Need*, for more details on the purpose of this document under both NEPA and CEQA.

NEPA Compliance

NEPA provides an interdisciplinary framework with action-forcing procedures requiring federal agency decision makers to take environmental factors into account for their proposed action and a range of alternatives. NEPA applies to all federal agencies and to most of the activities they manage, regulate, or fund that affect the human environment. NEPA requires all agencies to consider and to publicly disclose the environmental implications of their proposed actions through the preparation of appropriate documents. NEPA requires that every federal agency prepare an EIS for proposed legislation or other major federal actions “significantly affecting the quality of the human environment” (42 USC 4332; 40 CFR 1501). In this case, an EIS must be prepared because USFWS, as the federal lead agency under NEPA, has determined that the issuance of ITPs to the Permit Applicants under Section 10 of ESA constitutes a major federal action.

Federal agencies other than the NEPA lead agency that have jurisdiction by law or special expertise with respect to the action’s anticipated environmental effects can be included as cooperating agencies. Other federal agencies may use the lead agency’s NEPA document to support their own decision-making processes, if appropriate. A *cooperating agency* participates in the NEPA process and may provide input and expertise during preparation of the NEPA document. Federal agencies may designate and encourage nonfederal public agencies, such as state, local, and tribal entities, to participate in the NEPA process as cooperating agencies (40 CFR 1508.5). Accordingly, NMFS, the U.S. Army Corps of Engineers (USACE), and the U.S. Environmental Protection Agency (EPA) are cooperating agencies under NEPA because of their jurisdiction by law, their special expertise in aquatic resources and endangered species, and their involvement in the BRCP. Consequently, this EIS/EIR is expected to be used by NMFS and USACE to satisfy those agencies’ NEPA requirements.

CEQA Compliance

CEQA requires state and local agencies to estimate and evaluate the environmental implications of their actions and aims to prevent significant environmental impacts of those actions by requiring agencies, when feasible, to avoid significant environmental impacts or reduce them through the adoption of feasible mitigation measures. Like NEPA, CEQA requires all agencies to consider and publicly disclose the environmental implications of their proposed actions through the preparation of appropriate documents. CEQA applies to all discretionary activities proposed to be carried out or approved by California public agencies. BCAG is the CEQA lead agency, and it has determined that an EIR must be prepared for the proposed action because the BRCP may result in a significant impact on the environment. This EIR has been prepared to facilitate CEQA compliance for all of the Permit Applicants. Each Permit Applicant must adopt the final EIR to provide that compliance.

In addition to lead agencies, responsible and trustee agencies have roles in the environmental review process. A *responsible agency* under CEQA is a state or local public agency other than the CEQA lead agency that has discretionary approval over the project. A CEQA *trustee agency* is a state agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people of California. CDFW is a responsible agency under CEQA because it will approve the NCCP portion of the BRCP and issue a take permit for the covered species under Section 2835 of the California Fish and Game Code. CDFW is a trustee agency under CEQA because it has jurisdiction by law over the natural resources that are the subject of the BRCP.

Plan Area and Alternatives Considered

The Plan Area, proposed action, and alternatives are described briefly below. For a detailed discussion of the Plan Area, proposed action, and alternatives, see Chapter 2, *Proposed Project and Alternatives*. As the lead agencies, BCAG and USFWS, in conjunction with the other federal and state agencies, have developed the following alternatives for consideration.

- Alternative 1: No Action
- Alternative 2: Proposed Action
- Alternative 3: Reduced Development/Reduced Fill
- Alternative 4: Greater Conservation

Plan Area

The BRCP Plan Area was developed with a focus on the areas where growth and development may greatly affect state- and federally protected species. For the purposes of this EIS/EIR, the Plan Area boundary encompasses 564,219 acres in western Butte County and is the same as the Permit Area (Figure ES-1). This area consists of the western lowlands and foothills of Butte County and is bounded on the west by Tehama, Glenn, and Colusa Counties; on the south by Sutter and Yuba Counties; and on the north by Tehama County. To the east, the Plan Area is defined by the upper extent of landscape dominated by oak woodland natural communities. The elevation below which land cover types dominated by oak trees comprise more than one-half of the land cover present (referred to hereafter as the oak zone) plus a small portion of the City of Chico that extends above the oak zone, marks the woodland boundary. The upper elevational range of the oak zone within the Plan Area varies from about 800 to 1,500 feet above mean sea level. Typically, oak tree-dominated land cover types transition to either chaparral or conifer-dominated land cover types at elevations higher than the Plan Area. There are 11 watersheds in the Plan Area: Red Bluff, Butte Basin, Upper Dry Creek, Below Oroville Reservoir, Sutter Bypass, Lower Feather River, South Honcut Creek, Upper Big Chico Creek, Upper Little Chico Creek, Upper Butte Creek, and Bloomer Hill. The portion of Sacramento River floodplain within Butte County is included in the BRCP for implementing conservation measures for covered species and natural communities.

Alternative 1—No Action

This EIS/EIR includes an analysis of a no action alternative/no project alternative in accordance with the requirements of NEPA and CEQA, respectively. In this document, the no action/no project alternative is referred to as the No Action Alternative (Alternative 1). The analysis of this alternative allows decision makers to compare the impacts of approving or of not approving the proposed action.

Under Alternative 1, permits would not be issued by USFWS, NMFS, or CDFW for incidental take of the proposed covered species through a regional HCP or NCCP. As a result, Permit Applicants and the private developers within their jurisdictions would remain subject to the take prohibition for federally listed species under ESA and state-listed species under CESA. The Permit Applicants and others that have ongoing activities or future actions in the Plan Area that may result in the incidental take of federally listed species would need to apply, on a project-by-project basis, for incidental take authorization from either USFWS or NMFS through ESA Section 7 (when a federal agency is involved) or Section 10 (for nonfederal actions). Similarly, Permit Applicants and others whose ongoing activities or future actions have the potential for incidental take of state-listed species in the Plan Area would apply for incidental take authorization under CESA through a Section 2081(b) permit. In addition, regional wetland permits would not be issued by USACE and, as a result, Permit Applicants and private developers within their jurisdictions would remain subject to the federal wetland regulations for any ongoing activities or future actions.

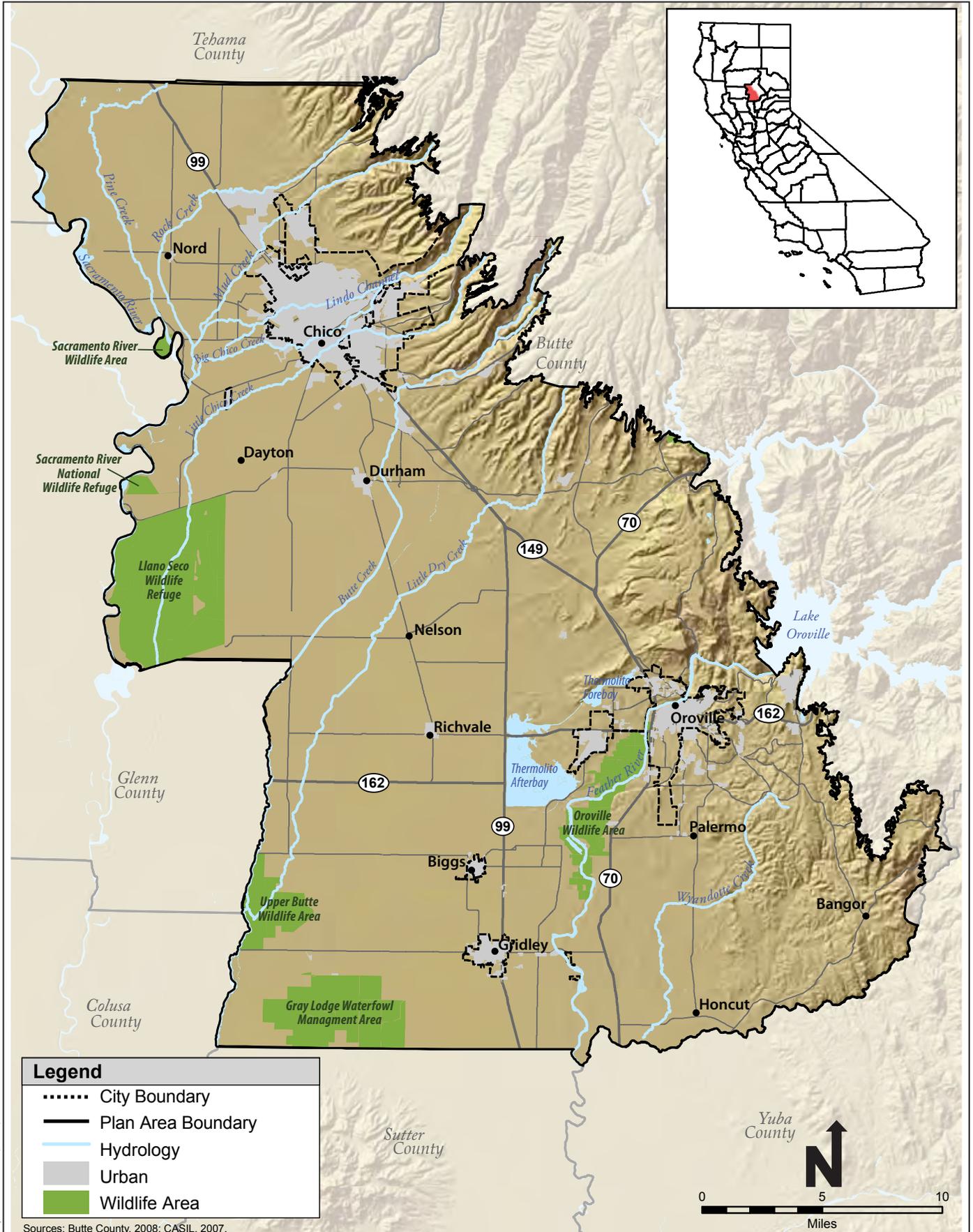
Alternative 2—Proposed Action

The proposed action (BRCP, Alternative 2) is a regional, comprehensive plan that establishes a framework for complying with state and federal endangered species regulations for the Permit Applicants while accommodating compatible future land use and development under the general plan updates of the Local Agencies and the Regional Transportation Plan (RTP). The BRCP is intended to establish and implement a program to conserve ecologically important resources in the Plan Area. For purposes of this EIS/EIR, the proposed action comprises the following components.

- Issuance of ITPs by USFWS, NMFS, and CDFW for the covered species associated with covered activities described in the BRCP.
- Approval and execution of the IA for the BRCP.
- All federal, state, and local agency actions or approvals that would be issued or undertaken under the BRCP.
- Implementation of the BRCP by the Permit Applicants.

The proposed action was developed by the permit applicants in consultation with USFWS, CDFW, NMFS, and USACE and is intended to address the conservation needs of 38 special-status species based on implementation of covered activities. The covered activities include those listed below.

- Existing, planned, and proposed land uses over which the Permit Applicants have land use authority, such as the construction, operation, and maintenance of development, facilities and infrastructure, which are consistent with local general plans.
- State and local transportation projects.



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Figure ES-1
Plan Area for the Butte Regional Conservation Plan

- Operation and maintenance of water delivery systems (e.g., Western Canal Water District [WCWD] canals and similar delivery systems).
- Habitat restoration, enhancement, and management actions.
- Adaptive management and monitoring activities.

The proposed action's conservation strategy would include habitat restoration, enhancement and management actions, and adaptive management and monitoring activities. The conservation strategy is designed to meet the regulatory requirements of ESA and the NCCPA and to streamline compliance with CEQA, NEPA, and other applicable environmental regulations. The conservation strategy includes biological goals and objectives, conservation measures, a monitoring program, and an adaptive management plan.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 would be comprised of a shorter permit timeframe (i.e., 30 years), reduced fill to waters of the United States, and the reduced development alternatives identified in the general plan EIRs of the following participating local jurisdictions (the County and the incorporated cities, referred to in this EIS/EIR as the Local Agencies).

- Butte County: Concentrated Growth Alternative.
- City of Chico: Increased Density Alternative.
- City of Oroville: Neighborhood Focused Growth Alternative.
- City of Gridley: Centralized Development Alternative.
- City of Biggs: Reduced Western Expansion Alternative.

Under these general plan alternatives, there would be either a reduction in the development footprint for the respective jurisdiction such that the development would be concentrated closer to urban centers or a reduction in the total dwelling units and commercial/industrial square footage such that less development would occur. Similar acreage limitations for natural communities and conservation strategy as Alternative 2 would apply, although the actual preservation, restoration, and mitigation would be scaled back proportional to the impacts.

Alternative 4—Greater Conservation

Alternative 4 would increase the target amount of certain natural community types to be conserved under the conservation strategy. This alternative would maintain the same Plan Area, covered species, covered activities, and conservation measures as the BRCP, but would modify the proposed conservation strategy to increase conservation of two land cover types: grasslands and riceland. The increase in these land cover types, as compared to the BRCP, is expected to provide additional habitat to meet the requirements of certain covered species (e.g., Swainson's hawk, white-tailed kite, and giant garter snake).

Environmental Consequences

A list of specific resource topics was developed to focus on and compare environmental impacts of the various alternatives. The list was drafted based on applicable laws, regulations and policies, as well as comments from agency staff and the interested public. Chapters 4 through 15 of this EIS/EIR describe, for each resource topic, the existing environment that could be affected by the proposed action. These existing conditions establish the baseline for the analysis of effects. The resource chapters also include detailed analysis and discussion of the probable environmental consequences, or impacts, of implementing the alternatives.

The BRCP would provide incidental take authorization for the participating local jurisdictions and agencies. Project approvals by these entities within the Plan Area are part of the covered activities proposed under the BRCP to be authorized for incidental take. Covered activities are detailed in Chapter 2, *Proposed Action and Alternatives*.

No specific development or other ground-disturbing activity is approved or authorized as part of the permit approval. Unless it is otherwise exempt, all future development projects and activities within proposed preserves would proceed through the normal project review and approval process of the local land use agencies (e.g., grading permit issuance, EIR certification). Urban development, including roadway projects, within the Urban Permit Areas (UPAs), which is a covered activity, is development and growth that is planned under the general plans of the Local Agencies. The environmental impacts from this urban growth and transportation improvement projects in the region have been evaluated in prior CEQA documents for each of the local general plans. These documents are incorporated by reference into this EIS/EIR and are listed in Chapter 3, *Approach to the Analysis*. These prior analyses considered the effects of planned development, including cumulative effects, within each land use agency's jurisdiction. The analyses in the prior environmental documents, therefore, disclose the impacts and provide the programmatic mitigation measures required for this development.

Table ES-1 summarizes impacts on species discussed in Chapter 6, *Biological Resources*. Generally, biological resources have significant and unavoidable impacts and adverse effects under Alternative 1 and less-than-significant impacts under Alternatives 2, 3, and 4.

Table ES-1. Impacts on Species Considered

Common Name	Covered Species?	Alternative 1 Impacts	Alternative 2 Impacts	Alternative 3 Impacts	Alternative 4 Impacts
Tricolored blackbird	Yes	S	LTS	LTS	LTS
Yellow-breasted chat	Yes	S	LTS	LTS	LTS
Bank swallow	Yes	S	LTS	LTS	LTS
Western burrowing owl	Yes	S	LTS	LTS	LTS
Western yellow-billed cuckoo	Yes	S	LTS	LTS	LTS
Greater sandhill crane	Yes	S	LTS	LTS	LTS
California black rail	Yes	S	LTS	LTS	LTS
American peregrine falcon	Yes	S	LTS	LTS	LTS
Swainson's hawk	Yes	S	LTS	LTS	LTS
White-tailed kite	Yes	S	LTS	LTS	LTS
Bald eagle	Yes	S	LTS	LTS	LTS

Common Name	Covered Species?	Alternative 1 Impacts	Alternative 2 Impacts	Alternative 3 Impacts	Alternative 4 Impacts
Other special-status and migratory birds	No	S	LTS	LTS	LTS
Special-status bats	No	S	LTS	LTS	LTS
American badger	No	LTS	LTS	LTS	LTS
Migratory black-tailed deer	No	S	LTS	LTS	LTS
Giant garter snake	Yes	S	LTS	LTS	LTS
Blainville's horned lizard	Yes	S	LTS	LTS	LTS
Western pond turtle	Yes	S	LTS	LTS	LTS
Foothill yellow-legged frog	Yes	S	LTS	LTS	LTS
Western spadefoot toad	Yes	S	LTS	LTS	LTS
Central Valley steelhead	Yes	LTS	LTS	LTS	LTS
Central Valley spring-run Chinook salmon	Yes	LTS	LTS	LTS	LTS
Central Valley fall/late fall-run Chinook salmon	Yes	LTS	LTS	LTS	LTS
Sacramento splittail	No	LTS	LTS	LTS	LTS
Green sturgeon	Yes	LTS	LTS	LTS	LTS
River lamprey	No	LTS	LTS	LTS	LTS
Hardhead	No	LTS	LTS	LTS	LTS
Antioch Dunes anthicid beetle	No	LTS	LTS	LTS	LTS
Sacramento anthicid beetle	No	LTS	LTS	LTS	LTS
Valley elderberry longhorn beetle	Yes	S	LTS	LTS	LTS
Vernal pool tadpole shrimp	Yes	S	LTS	LTS	LTS
Conservancy fairy shrimp	Yes	S	LTS	LTS	LTS
Vernal pool fairy shrimp	Yes	S	LTS	LTS	LTS
Ferris' milkvetch	Yes	S	LTS	LTS	LTS
Lesser saltscare	Yes	S	LTS	LTS	LTS
Hoover's spurge	Yes	S	LTS	LTS	LTS
Ahart's dwarf rush	Yes	S	LTS	LTS	LTS
Red Bluff dwarf rush	Yes	S	LTS	LTS	LTS
Butte County meadowfoam	Yes	S	LTS	LTS	LTS
Veiny Monardella	Yes	S	LTS	LTS	LTS
Hairy Orcutt grass	Yes	S	LTS	LTS	LTS
Slender Orcutt grass	Yes	S	LTS	LTS	LTS
Ahart's paronychia	Yes	S	LTS	LTS	LTS
California beaked-rush	Yes	S	LTS	LTS	LTS
Butte County checkerbloom	Yes	S	LTS	LTS	LTS
Butte County golden clover	Yes	S	LTS	LTS	LTS
Greene's tuctoria	Yes	S	LTS	LTS	LTS
Other special-status and noncovered plants	No	S	LTS	LTS	LTS

S = significant; LTS = less than significant.

The following non-biological resources had less-than-significant impacts or no impact for all the alternatives.

- Cultural resources
- Geology, Soils, Mineral Resources, and Paleontological Resources
- Land Use
- Socioeconomics

The following non-biological resources had impacts that were significant and unavoidable under all the alternatives.

- Agricultural Resources
- Hydrology, Water Resources, and Water Quality
- Noise
- Recreation, Open Space, and Visual Resources
- Transportation
- Population and Housing and Environmental Justice

Table ES-2 summarizes the impact determinations for the alternatives by activity and by resource. All of the significant and unavoidable impacts under Alternative 1 would result primarily from the activities expected under the implementation of the Local Agencies' general plans (i.e., permanent development). Most of the significant and unavoidable impacts under Alternatives 2, 3, and 4 also would result primarily from the implementation of the Local Agencies' general plans, with the exception of agriculture, climate change, and environmental justice. Significant and unavoidable impacts for these three resources would also result from implementation of the conservation strategy. The conservation strategy as described for Alternatives 2, 3, and 4 would not result in significant and unavoidable impacts on the following resources: biological; cultural; geology, minerals, and paleontology; hydrology and water quality; land use; public services and utilities; recreation and visual resources; population and housing' socioeconomics, environmental justice; and transportation. For air quality and noise under Alternatives 2, 3, and 4, mitigation would be incorporated for impacts associated with the conservation strategy that would reduce impacts to less than significant.

Table ES-2. Summary of Impacts

Resource	Alternative 1	Alternative 2		Alternative 3		Alternative 4	
	Ongoing Activities or Future Actions	Covered Activities	Conservation Strategy	Covered Activities	Conservation Strategy	Covered Activities	Conservation Strategy
Agriculture	SU	SU	SU	SU	SU	SU	SU
Air Quality	SU	SU	LTS with Mitigation	SU	LTS with Mitigation	SU	LTS with Mitigation
Climate Change	SU	SU	SU	SU	SU	SU	SU
Biological Resources	SU	S	S	S	LTS	S	LTS
Cultural	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Geology, Minerals and Paleontology	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Hydrology and Water Quality	SU	SU	LTS	SU	LTS	SU	LTS
Land Use	NI	LTS	LTS	LTS	LTS	LTS	LTS
Noise	SU	SU	LTS with Mitigation	SU	LTS with Mitigation	SU	LTS with Mitigation
Public Services and Utilities	SU	SU	LTS	SU	LTS	SU	LTS
Recreation and Visual Resources	SU	SU	LTS	SU	LTS	SU	LTS
Population and Housing	SU	SU	LTS	SU	LTS	SU	LTS
Socioeconomics	B	B	B	B	B	B	B
Environmental Justice	SU	SU	SU	SU	SU	SU	SU
Transportation	SU	SU	LTS	SU	LTS	SU	LTS

SU = significant and unavoidable; S = significant; LTS = less than significant; NI = no impact; B = beneficial.

Table ES-3 summarizes the less-than-significant with mitigation and significant and unavoidable environmental impacts of the alternatives and any mitigation measures applied to reduce impacts. Impacts are summarized for each alternative by resource topic.

Table ES-3. Less-Than-Significant with Mitigation and Significant and Unavoidable Impacts on Resources Analyzed

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
Agricultural and Forestry Resources			
AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use	Significant and unavoidable	Implementation of the Local Agencies' general plans would result in the conversion of substantial acres of important farmland to nonagricultural land.	Goals, policies, and actions of the general plans could reduce impacts on important farmland in some of the jurisdictions, but not to less-than-significant levels.
AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	Significant and unavoidable	Implementation of the general plans of the County and City of Gridley would result in the conversion of existing Williamson Act land to nonagricultural uses.	Goals, policies, and actions of the general plans could reduce impacts on Williamson Act lands in some jurisdictions, but not to less-than-significant levels.
AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use	Significant and unavoidable	Implementation of the general plans of the County and the City of Gridley would result in conversion of substantial acres of farmland to nonagricultural uses.	Goals, policies, and actions of the general plans could reduce impacts on some agricultural lands in some jurisdictions, but not to less-than-significant levels.
Air Quality and Climate Change			
AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and unavoidable	Implementation of the general plans for the Cities of Oroville, Gridley, and Biggs; construction activities related to transportation facilities; and water and irrigation district activities would generate emissions levels in conflict with the NSVPA Plan.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, standard construction mitigation measures from BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Caltrans BMPs would not reduce impacts to less-than-significant levels.
AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant and unavoidable	Implementation of the general plans for the Cities of Oroville, Gridley, and Biggs; construction activities related to transportation facilities; and water and irrigation district activities would violate air quality standards or contribute to an existing air quality violation.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, BCAQMD's fugitive PM10 mitigation measures, and Caltrans BMPs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant and unavoidable	Implementation of the general plans for the Cities of Chico, Oroville, Gridley, and Biggs; construction activities related to transportation facilities; and water and irrigation district activities would generate emissions that violate air quality standards.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, BCAQMD’s fugitive PM10 mitigation measures, and Caltrans BMPs would not reduce impacts to less-than-significant levels.
AQ-4: Expose sensitive receptors to substantial pollutant concentrations	Significant and unavoidable	Implementation of construction-related activities under the City of Oroville’s general plan would expose sensitive receptors to substantial pollutants.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, BCAQMD’s fugitive PM10 mitigation measures, and Caltrans BMPs would not reduce impacts to less-than-significant levels.
AQ-5: Create objectionable odors affecting a substantial number of people	Significant and unavoidable	Implementation of the general plans for the Cities of Oroville and Gridley would expose sensitive receptors to objectionable odors.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, BCAQMD’s fugitive PM10 mitigation measures, and Caltrans BMPs would not reduce impacts to less-than-significant levels.
AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	Significant and unavoidable	Implementation of the Local Agencies’ general plans and emissions associated with transportation facilities, recurring maintenance, and water and irrigation district activities would generate significant levels of greenhouse gases.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, and Caltrans BMPs would not reduce impacts to less-than-significant levels.
AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Significant and unavoidable	Implementation of the Local Agencies’ general plans and emissions associated with transportation facilities, recurring maintenance, and water and irrigation district activities would generate significant levels of greenhouse gases.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, and Caltrans BMPs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
Biological Resources			
BIO-1: Effects on tricolored blackbird	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development in the Plan Area would result in the direct loss of 12,617 acres (5%) of modeled tricolored blackbird habitat and one colony; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-2: Effects on yellow-breasted chat	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development in the Plan Area would result in the direct loss of over 980 acres (14%) of modeled yellow-breasted chat nesting and foraging habitat and 48 acres (16%) of known use area; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-3: Effects on bank swallow	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would have permanent and direct effects on 9 linear miles (5%) of modeled bank swallow habitat and significantly but indirectly effect 500 feet of bank swallow habitat.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-4: Effects on western burrowing owl	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 14,496 acres (9%) of modeled western burrowing owl habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-5: Effects on western yellow-billed cuckoo	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 50 acres (1%) of modeled western-yellow billed cuckoo habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-6: Effects on greater sandhill crane	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the loss of 1,764 acres (1%) of modeled greater sandhill crane habitat and result in an indirect increased risk of powerline collisions.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-7: Effects on California black rail	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area could affect occurrences of black rail; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-8: Effects on American peregrine falcon	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the loss of 9 acres (14%) of modeled nesting habitat, 3,759 acres (2%) of modeled foraging habitat, and one known nest location.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-9: Effects on Swainson's hawk	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 11,710 acres (8%) of modeled Swainson's hawk habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-10: Effects on white-tailed kite	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 16,664 acres (5%) of modeled white-tailed kite habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-11: Effects on bald eagle	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 2,784 acres (12%) of nesting habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-12: Effects on giant garter snake	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of up to 18 miles (4%) of movement habitat and 3,196 acres (2%) of other modeled giant garter snake habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-13: Effects on Blainville's horned lizard	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in a considerable loss of suitable habitat for Blainville's horned lizard; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-14: Effects on western pond turtle	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 24 (12%) potential breeding ponds, 5 linear miles (5%) of stream habitat, and 4,652 acres (5%) of modeled western pond turtle habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-15: Effects on foothill yellow-legged frog	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 107 miles of streams (10%) and 1,189 acres (11%) of associated upland habitat suitable for foothill yellow-legged frog; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-16: Effects on western spadefoot	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 22 (11%) potential breeding ponds and 10,142 (9%) acres of modeled western spadefoot habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-21: Effects on valley elderberry longhorn beetle	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 3,360 acres (8%) of modeled valley elderberry longhorn beetle habitat; recurring maintenance activities would also result in significant direct and indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-22: Effects on vernal pool crustaceans	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 1,963 acres (6%) of modeled habitat for vernal pool crustaceans, loss of several known occurrences of four species of vernal pool crustaceans, and adverse indirect effects affecting water quality and hydrology; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-23: Effects on Red Bluff dwarf rush	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 1,313 acres of modeled habitat as well as at least one occurrence of Red Bluff dwarf rush.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-24: Effects on Butte County meadowfoam	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 345 acres of modeled primary habitat and 1,165 acres of modeled secondary habitat, as well as multiple occurrences of Butte County meadowfoam. Additionally, 477.6 acres of critical habitat designated for Butte County meadowfoam would be removed.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-25: Effects on Butte County checkerbloom	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 2,638 acres of modeled habitat, as well as multiple eight occurrences of Butte County checkerbloom.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-26: Effects on other special-status plants	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of modeled habit and temporary loss of habitat functions for eight covered plant species and five non-covered special-status plant species: 1,313 acres and 18 acres, respectively (Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, and Greene's tuctoria); 176 acres and 18 acres (Ferris' milkvetch); and 236 acres and 184 acres (Butte County golden clover).	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-29: Effects on noncovered special-status birds and migratory birds	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of natural communities that provide habitat for non-covered special-status birds and migratory birds: 11,324 acres (12%) of oak woodland and savanna, 1,529 acres (6%) of riparian, and 93 acres (0.2%) of wetland natural communities; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-30: Effects on bats	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of up to 12,737 acres (11%) of potential bat roosting habitat; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-32: Effects on migratory deer	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the loss of critical winter habitat for the Bucks Mountain deer herd and the lower elevation winter habitat for the East Tehama and Mooretown deer herds.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-33: Effects on wildlife migration corridors	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would cause disruption of wildlife movement within two Essential Connectivity Areas (ECAs).	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-34: Effects on wetlands and waters of the United States	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in direct impacts to 1,911 acres (3%) of potentially jurisdictional wetlands, 136 acres (0.2%) of other waters, and 141 linear miles (6%) of other waters; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-37: Effects on oak woodland and savanna natural communities	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the decline of 11,324 acres (12%) of oak woodland; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-38: Effects on grassland natural communities	Significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the decline of 9,715 acres (10%) of grassland natural communities; 7,776 acres (13%) of grasslands and 1,939 acres (6%) of grassland with vernal swale complex; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-39: Effects on riparian natural communities	significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 1,413 acres (6%) of riparian natural communities; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
BIO-40: Effects on wetland natural communities	significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 93 acres (0.2%) of wetland natural communities; recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
BIO-41: Effects on aquatic natural communities	significant and unavoidable	Implementation of the Local Agencies' general plans and permanent development projects in the Plan Area would result in the direct loss of 140 acres (1%) of aquatic natural communities and 52 ponds (11%); recurring maintenance activities would also result in significant indirect impacts.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
Hydrology and Water Quality			
WQ-6: 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	Significant and unavoidable	Implementation of the Local Agencies' general plans would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area.	Goals and actions of the general plans could reduce the risk associated with levee failure, but would not eliminate risks to people and property and would not reduce impacts to less-than-significant levels.
Noise			
NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Implementation of the Local Agencies' general plans and transportation projects would result in a substantial permanent increase in ambient noise levels associated with traffic, and implementation of the City of Chico's general plan would result in a substantial permanent increase in ambient noise levels associated with stationary sources.	Goals, policies, and actions of the general plans, in addition to Caltrans BMPs, could reduce impacts associated with the permanent increase in ambient noise levels, but not to less-than-significant levels.
NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Implementation of the City of Biggs' general plan would result in a temporary increase in ambient noise levels associated with construction.	Goals, policies, and actions of the general plan could reduce impacts associated with the temporary increase in ambient noise levels, but not to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
Public Services and Public Utilities			
PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in a substantial decrease in service ratios for the City of Gridley due to the projected population increase.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, would not reduce impacts to less-than-significant levels.
PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	Significant and unavoidable	Implementation of the City of Gridley’s general plan would exceed wastewater treatment requirements due to the projected population increase.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, would not reduce impacts to less-than-significant levels,
PS-3: Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the construction of new water or wastewater treatment facilities due to the projected population increase.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, would not reduce impacts to less-than-significant levels.
PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the construction of new stormwater drainage facilities or the expansion of existing facilities due to the projected land use development.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, would not reduce impacts to less-than-significant levels.
PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result insufficient water supplies or require new or expanded entitlements due to the projected population increase.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
PS-6: Result in a determination by the wastewater treatment provider that 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	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the need for additional wastewater treatment services due to the projected population increase.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the need for additional solid waste disposal services due to the projected population increase.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
Recreation, Open Space, and Visual Resources			
REC-1: 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	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in a substantial increase in the use of existing recreational facilities because of the projected population growth.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in project population growth, thereby requiring the construction or expansion of recreational facilities.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce these effects to less-than-significant levels.
REC-3: Have a substantial adverse effect on a scenic vista	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in a substantial adverse effect on scenic vistas as a result of blocking views of the Sutter Buttes.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce these effects to less-than-significant levels.
REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant and unavoidable	Implementation of the general plans for the Cities of Gridley and Chico would result in the conversion of agricultural land and open space to urban lands, substantially degrading the existing visual character or quality within their jurisdictions.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant and unavoidable	Implementation of City of Gridley general plan would increase urban land uses, resulting in a new source of substantial light or glare.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce these effects to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 1—No Action (No Plan Implementation)			
Population and Housing, Socioeconomics, and Environmental Justice			
SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	Significant and unavoidable	Implementation of the general plan for the Cities of Gridley, Oroville, and Biggs would induce substantial population growth.	General plans policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
SOC-6: Substantially disproportionately affect minority or low-income populations	Significant and unavoidable	Implementation of the Local Agencies' general plans, transportation facilities, and water and irrigation district activities would result in significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation. These impacts would occur in locations of the Plan Area with meaningfully larger populations of minority and low-income persons, and therefore substantially disproportionately affect low-income populations.	General plans policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
Transportation			
TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system	Significant and unavoidable	Implementation of the Local Agencies' general plans and transportation facilities would result in substantial increases in traffic as a result of construction and operation.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access	Significant and unavoidable	Implementation of the City of Biggs' general plan would result in significant impacts related to traffic safety hazards or inadequate emergency access.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, as well as Caltrans BMPs, would reduce impacts, but not to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
Agricultural and Forestry Resources			
AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use	Significant and unavoidable	Implementation of the Local Agencies' general plans and implementation of the conservation strategy would result in the conversion of substantial acres of important farmland to nonagricultural uses.	The agricultural protection target of Alternative 2 would preserve more than 30% of agricultural communities—most of which would likely be important farmland—however, this would not offset impacts associated with conversion of farmland. General plan goals, policies, and actions could reduce impacts on important farmland in some of the jurisdictions, but not to less-than-significant levels.
AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	Significant and unavoidable	Implementation of the County's and the City of Gridley's general plans would result in the conversion of existing Williamson Act land to nonagricultural uses; implementation of the conservation strategy would not conflict with Williamson Act contracts or agricultural use zoning.	General plan goals, policies, and actions or mitigation measures would not reduce impacts on Williamson Act lands to less-than-significant levels.
AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use	Significant and unavoidable	Implementation of the County's and the City of Gridley's general plans would involve other changes in the existing environment that would result in the conversion of farmland to nonagricultural uses; implementation of the conservation strategy would not involve other changes that would convert farmland.	The agricultural protection target in Alternative 2 would protect important farmlands from conversion to nonagricultural uses—however, this would not offset impacts associated with conversion of farmland. General plan goals, policies, and actions would not reduce impacts on some of the agricultural lands to a less-than-significant level.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
Air Quality and Climate Change			
AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and unavoidable	Implementation of the general plans for the Cities of Oroville, Gridley, and Biggs; construction activities related to transportation facilities; and water and irrigation district activities would conflict with the NSVPA Plan. In addition, implementing the conservation strategy could result in a conflict with the NSVPA Plan.	Impacts associated with the conservation strategy would be reduced with implementation of Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment, and Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust, AMM14 and AMM26, Caltrans BMPs, BCAQMD’s CEQA guidelines, and BCAQMD’s fugitive PM10 mitigation measures; however, the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce the conflict with the NSVPA Plan associated with implementation of the general plans to less-than-significant levels.
AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant and unavoidable	Implementation of the general plans for the Cities of Chico, Oroville, Gridley, and Biggs; construction activities related to transportation facilities; and water and irrigation district activities would violate air quality standards. In addition, implementation of the conservation strategy could result violate air quality standards.	Impacts associated with the conservation strategy and construction activities related to transportation facilities; and water and irrigation district activities would be reduced with implementation of Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment, and Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust, AMM14 and AMM26, Caltrans BMPs, BCAQMD’s CEQA guidelines, and BCAQMD’s fugitive PM10 mitigation measures; however, the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce emissions associated with implementation of the general plans to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant and unavoidable	Implementation of the general plans for the Cities of Chico, Oroville, Gridley, and Biggs; construction activities related to transportation facilities; and water and irrigation district activities would result in a cumulatively considerable net increase of any criteria pollutant. In addition, implementing the conservation strategy could result in a cumulatively considerable net increase of criteria pollutants.	Impacts associated with the conservation strategy; construction activities related to transportation facilities; and water and irrigation district activities would be reduced with implementation of Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment, and Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust, AMM14 and AMM26, Caltrans BMPs, BCAQMD’s CEQA guidelines, and BCAQMD’s fugitive PM10 mitigation measures; however, general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce the net increase of criteria pollutants associated with implementation of the general plans to less-than-significant levels.
AQ-4: Expose sensitive receptors to substantial pollutant concentrations	Significant and unavoidable	Implementation of the general plans for the City of Gridley would expose sensitive receptors to substantial pollutants. Implementation of the conservation strategy; construction activities related to transportation facilities; and water and irrigation district activities would have a low potential for exposing sensitive receptors, and this would be further reduced with implementation of a mitigation measure.	Impacts associated with the conservation strategy; construction activities related to transportation facilities; and water and irrigation district activities would be reduced with implementation of Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment. General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce the exposure of sensitive receptors associated with general plan implementation to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
AQ-5: Create objectionable odors affecting a substantial number of people	Significant and unavoidable	Implementation of Gridley and Oroville’s general plans would create objectionable odors. Implementation of the conservation strategy; construction activities related to transportation facilities; and water and irrigation district activities would not likely affect substantial numbers of people with objectionable odors, and this impact would be further reduced with implementation of a mitigation measure.	Impacts associated with the conservation strategy; construction activities related to transportation facilities; and water and irrigation district activities would be further reduced with implementation of Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment, as well as BCAQMD’s CEQA guidelines, and BCAQMD’s fugitive PM10 mitigation measures. General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce effects associated implementation of the general plans to less-than-significant levels.
AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	Significant and unavoidable	Implementation of the general plans, transportation facilities, recurring maintenance facilities, and water and irrigation district activities and implementation of the conservation strategy would generate significant levels of greenhouse gases.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, Caltrans BMPs, and Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs, would not reduce impacts to less-than-significant levels.
AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Significant and unavoidable	Implementation of all the general plans, transportation facilities, recurring maintenance facilities, water and irrigation district activities, and implementation of the conservation strategy would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	General plan policies or the adoption of identified mitigation measures in general plan EIRs, Caltrans BMPs, and Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs, would not reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
Hydrology and Water Quality			
WQ-6: 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	Significant and unavoidable	Implementation of Local Agencies’ general plans would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. Implementation of the conservation strategy and other covered activities would not expose people or structures to a significant risk associated with flooding or the failure of a dam or levee.	Goals and actions of the general plans could reduce the risk associated with levee failure, but it would not eliminate risks to people and property associated with implementation of the general plans and would not reduce the risk to a less-than-significant level.
Noise			
NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies	Less than significant with mitigation	Implementation of Local Agencies’ general plan policies, Caltrans’ BMPs, or AMM27 would restrict noise-generating activities associated with general plan implementation and other covered activities (e.g., transportation facilities). However, construction activities associated with the conservation strategy could result in short-term exceedances in local noise standards.	Implementation of Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints, would reduce impacts associated with implementing the conservation strategy to less-than-significant levels.
NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Implementation of Local Agencies’ general plans and transportation facilities would result in a substantial permanent increase in ambient noise levels as a result of transportation noise and stationary sources (in the case of the City of Chico). Implementation of the conservation strategy, water and irrigation district activities, and recurring maintenance would not result in a substantial permanent increase in noise because there would be very few noise-generating activities that occur within the Plan Area on a permanent basis.	Goals, policies, and actions of the general plans, in addition to Caltrans BMPs, could reduce impacts associated with the permanent increase in ambient noise levels associated with implementation of general plans and transportation facilities, but not to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Implementation of Local Agencies’ general plan policies, Caltrans’ BMPs or AMM27 would restrict temporary noise-generating activities associated with general plan implementation and other covered activities (e.g., transportation facilities). However, implementation of the City of Biggs’ general plan would result in a temporary increase in ambient noise levels associated with construction. In addition, construction activities associated with implementing the conservation strategy could result in short-term exceedances in local noise standards.	Impacts associated with the conservation strategy would be reduced with implementation of Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints, and AMM27; however, the general plan policies or mitigation measures would not reduce the temporary increase in ambient noise levels associated with general plan implementation to a less-than significant level.
Public Services and Public Utilities			
PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in a substantial decrease in service ratios for the City of Gridley due to the projected population increase. Implementation of the conservation strategy and other covered activities would not result in a population increase and would not affect service ratios.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.
PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	Significant and unavoidable	Implementation of the City of Gridley’s general plan would exceed wastewater treatment requirements due to the projected population increase. Implementation of the conservation strategy and other covered activities would not result in a population increase in the Plan Area and consequently would not exceed wastewater treatment requirements.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
PS-3: 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	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in a population increase which would likely require the construction of new water or wastewater treatment facilities. Implementation of the conservation strategy and other covered activities would not need water or wastewater services.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels.
PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the construction of stormwater facilities. Implementation of the conservation strategy would not result in significant environmental effects as a result of construction of stormwater drainage facilities not already disclosed within this EIS/EIR.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.
PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in insufficient water supplies or require new or expanded entitlements. Implementation of the conservation strategy would not need new water entitlements.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.
PS-6: Result in a determination by the wastewater treatment provider that 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	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the need for additional wastewater treatment services. Implementation of the conservation strategy would not need new wastewater services.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.
PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in an increase in solid waste disposal needs. Implementation of the conservation strategy would not generate solid waste and would not need solid waste disposal services.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
Recreation, Open Space, and Visual Resources			
REC-1: 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	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in unavoidable impacts on parks or other recreational facilities as a result of the anticipated population increase. Implementation of the conservation strategy is anticipated to increase the recreational opportunities for the public in the Plan Area.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation to less-than-significant levels.
REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	Significant and unavoidable	Implementation of the City of Gridley’s general plan would require the construction of recreational facilities that would adversely affect the environment. Implementation of the conservation strategy would not construct specific recreational facilities and would not result in an adverse physical effect on the environment.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce these effects associated with general plan implementation to less-than-significant levels.
REC-3: Have a substantial adverse effect on a scenic vista	Significant and unavoidable	Implementation of the City of Gridley’s general plan would result in the conversion of agricultural land to urban uses and reduce the visibility of the Sutter Buttes, thereby substantially affecting scenic vistas or views. The conservation strategy would not affect scenic vistas and views and in some cases may enhance existing views.	Implementation of the general plan policies the adoption of identified mitigation measures in general plan EIRs would not reduce these effects associated with general plan implementation to less-than-significant levels.
REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant and unavoidable	Implementation of the City of Chico’s and City of Gridley’s general plans would result in substantial degradation of the existing visual character and quality of the areas within their local jurisdictions primarily due to more urban land uses. Implementation of the conservation strategy would benefit the existing visual character of the Plan Area and not substantially degrade the existing visual character and quality of agricultural lands and natural lands.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce these effects associated with general plan implementation to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant and unavoidable	Implementation of Gridley’s general plan would result in a substantial increase of light and glare as a result of the increase in urban land uses. Implementation of the conservation strategy would not result in a substantial increase of light and glare because permanent activities under the conservation strategy are not expected to use substantial light.	Implementation of the general plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce these effects associated with general plan implementation to less-than-significant levels.
Population and Housing, Socioeconomics, and Environmental Justice			
SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	Significant and unavoidable	Implementation of the Gridley, Biggs, and Oroville general plans would result in substantial increases in population growth. Implementation of the conservation strategy would not result in substantial population growth.	Implementation of the general plans or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with implementation of the general plans to less-than-significant levels.
SOC-6: Substantially disproportionately affect minority or low-income populations	Significant and unavoidable	Implementation of the Local Agencies’ general plans, transportation projects, and water and irrigation district activities, as well as the conservation strategy, would result in significant impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation. These impacts would occur in locations of the Plan Area with meaningfully larger populations of minority and low-income persons and, therefore, substantially disproportionately affect low-income populations.	Implementation of the general plans or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts to less-than-significant levels. The mitigation measures incorporated for the effects associated with implementation of the conservation strategy for air quality, noise, and transportation would reduce effects to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 2—Proposed Action			
Transportation			
TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system	Significant and unavoidable	Implementation of Local Agencies’ general plans and transportation facilities would result in substantial increases in traffic as a result of construction and operation. Implementation of the conservation strategy or other covered activities (e.g., water and irrigation district activities) would not generate substantial volumes of short-term and long-term traffic.	General plan policies or the adoption of identified mitigation measures in general plan EIRs would not reduce impacts associated with general plan implementation or transportation facilities to less-than-significant levels.
TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access	Significant and unavoidable	Implementation of the City of Biggs’ general plan would result in significant impacts related to traffic safety hazards or inadequate emergency access. Implementation of the conservation strategy and other covered activities would not result in traffic hazards because conservation activities would generally be small, of limited duration, and located in areas with little traffic.	General plan policies would reduce the impacts associated with implementation of the general plan, but not to less-than-significant levels.
TRA-3: Potential conflicts with transportation plans, programs, and planned projects	Less than significant with mitigation	Implementation of the Local Agencies’ general plans would not conflict with transportation plans, programs, and planned projects because it would incorporate the infrastructure and transportation projects adopted in the local general plans and transportation plans. Implementation of the conservation strategy would establish of conservation areas in areas where land may be required for transportation project rights-of-way and this could impair construction of these transportation projects; similarly, the construction of transportation projects in such areas could limit their suitability as resource preserves.	Implementation of Mitigation Measure TRA-3: Avoid acquisition of conservation lands that are within or adjacent to proposed alignments of programmed or planned transportation projects, would reduce impacts associated with the conservation strategy to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 3—Reduced Development/Reduced Fill			
Agricultural and Forestry Resources			
AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Air Quality and Climate Change			
AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-4: Expose sensitive receptors to substantial pollutant concentrations	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 3—Reduced Development/Reduced Fill			
AQ-5: Create objectionable odors affecting a substantial number of people	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less ground disturbance and development are expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Hydrology, Water Resources, and Water Quality			
WQ-6: 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	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Noise			
NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies	Less than significant with mitigation	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2. Implementation of Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints, would reduce impacts to less-than-significant levels.
NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 3—Reduced Development/Reduced Fill			
Public Services and Public Utilities			
PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-3: 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	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-6: Result in a determination by the wastewater treatment provider that 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	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 3—Reduced Development/Reduced Fill			
Recreation, Open Space, and Visual Resources			
REC-1: 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	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-3: Have a substantial adverse effect on a scenic vista	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Population and Housing, Socioeconomics, and Environmental Justice			
SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
SOC-6: Substantially disproportionately affect minority or low-income populations	Significant and unavoidable	Impacts would be similar to those described under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 3—Reduced Development/Reduced Fill			
Transportation			
TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because of the reduction in overall development.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
TRA-3: Potential conflicts with transportation plans, programs, and planned projects	Less than significant with mitigation	Impacts would be similar to those described under Alternative 2, although slightly less because less development is expected to occur.	Mitigation measures or residual impacts would be similar to those described under Alternative 2. Implementation of Mitigation Measure TRA-3: Avoid lands that are within or adjacent to proposed alignments of programmed or planned transportation projects, would reduce impacts to less-than-significant levels.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
Agricultural and Forestry Resources			
AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not convert important farmland beyond the conversions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not conflict with existing zoning or Williamson Act contracts beyond the conflicts already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not involve other changes that would convert important farmland beyond the changes already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Air Quality and Climate Change			
AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-4: Expose sensitive receptors to substantial pollutant concentrations	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-5: Create objectionable odors affecting a substantial number of people	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in additional air quality emissions beyond the emissions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
Hydrology, Water Resources, and Water Quality			
WQ-6: 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	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not generate risk of loss, injury or death involving flooding beyond those already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Noise			
NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies	Less than significant with mitigation	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not generate noise levels in excess of established standards beyond those excesses already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2. Implementation of Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints, would reduce impacts to less than significant.
NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in the permanent increase in ambient noise levels beyond those increases already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in a substantial temporary increase in ambient noise levels beyond those increases already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
Public Services and Public Utilities			
PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not reduce service ratios beyond those reductions already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not exceed wastewater treatment requirements beyond those exceedances already identified under Alternative 2	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-3: 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	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not require the construction of new water or wastewater facilities beyond those already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not require the construction of stormwater drainage facilities beyond those already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not require water supplies beyond those already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
PS-6: Result in a determination by the wastewater treatment provider that 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	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not require the construction of new water or wastewater facilities beyond those already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not require additional solid waste disposal services beyond the uses already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Recreation, Open Space, and Visual Resources			
REC-1: 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	Significant and unavoidable	Impacts would be similar to those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not increase the use of recreational facilities beyond the increases already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not include recreational facilities beyond those already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-3: Have a substantial adverse effect on a scenic vista	Significant and unavoidable	Impacts would be similar to those described under Alternative 2 but fewer, as the increased conservation of additional grasslands and ricelands would not substantially adversely affect a scenic vista beyond the adverse effects already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not substantially degrade the visual characters beyond the visual degradation already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not create a new source of substantial light or glare beyond those new sources already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
Population and Housing, Socioeconomics, and Environmental Justice			
SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not induce substantial population growth beyond the growth already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
SOC-6: Substantially disproportionately affect minority or low-income populations	Significant and unavoidable	Impacts associated with implementation of the general plans would be the same as under Alternative 2, as the increased conservation of additional grasslands and ricelands would not substantially disproportionately affect minority or low-income populations beyond the impacts already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.

Impact	NEPA/CEQA Significance	Summary of Significance Determination	Mitigation Measures or Residual Impacts
Alternative 4—Greater Conservation			
Transportation			
TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in a substantial increase in traffic beyond the increase already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access	Significant and unavoidable	Impacts would be the same as those described under Alternative 2, as the increased conservation of additional grasslands and ricelands would not result in safety hazards beyond the hazards already identified under Alternative 2.	Mitigation measures or residual impacts would be similar to those described under Alternative 2.
TRA-3: Potential conflicts with transportation plans, programs, and planned projects	Less than significant with mitigation	Impacts would be similar to those described under Alternative 2, although slightly greater as the greater area of conserved grasslands and ricelands increases the potential for conflicts to arise.	Mitigation measures or residual impacts would be similar to those described under Alternative 2. Implementation of Mitigation Measure TRA-3: Avoid acquisition of conservation lands that are within or adjacent to proposed alignments of programmed or planned transportation projects, would reduce impacts to less-than-significant levels.

This joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the impacts associated with implementing the joint Habitat Conservation Plan/Natural Community Conservation Plan and its associated Endangered Species Act (ESA) incidental take permits (ITP), for western Butte County, known as the Butte Regional Conservation Plan (BRCP or Plan). This EIS/EIR was prepared pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321; 40 Code of Federal Regulations [CFR] 1500.1); the President's Council on Environmental Quality (CEQ) guidelines on implementing NEPA; the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Sections 21000–21178.1); and the State CEQA Guidelines.

1.1 BRCP Overview

The following local and state agencies are jointly applying for endangered species permits from state and federal wildlife agencies.

- The County of Butte (County)
- The Cities of Oroville, Chico, Biggs, and Gridley
- The Butte County Association of Governments¹ (BCAG)
- Western Canal Water District
- Biggs–West Gridley Water District.
- Butte Water District
- Richvale Irrigation District
- California Department of Transportation District 3 (Caltrans District 3)

These entities are collectively referred to as the Permit Applicants. Together, they are applying for ITPs from the U.S. Fish and Wildlife Service (USFWS) and NOAA's National Marine Fisheries Service (NMFS), pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) of 1973, as amended; and from the California Department of Fish and Wildlife (CDFW), pursuant to Section 2835 of the California Fish and Game Code. The ITPs would authorize take of certain state- and federally listed species (i.e., covered species) during the course of otherwise lawful activities (i.e., covered activities), as described in Chapter 2, *Proposed Action and Alternatives*.

As a required component of the application for these permits, the Permit Applicants have prepared the BRCP, which serves as a habitat conservation plan (HCP) under ESA and a natural community conservation plan (NCCP) under the California Natural Community Conservation Planning Act (NCCPA). The BRCP is intended to support the issuance of ITPs with a term of 50 years from USFWS,

¹ BCAG is a joint powers authority formed pursuant to the Joint Exercise of Powers Act, Government Code Sections 6500 et seq. BCAG would be the BRCP Implementing Entity and would be the agency responsible for implementing the BRCP.

NMFS, and CDFW, and to develop a long-term conservation plan to protect and contribute to the recovery of covered species and natural communities in the BRCP Plan Area, which is the same as the Permit Area, while allowing for development and maintenance activities that are compatible with local policies and regulations. The BRCP identifies where future impacts on protected species will likely occur and lays out a strategy for avoidance, minimization, and mitigation of the impacts on natural resources that will result from these activities.

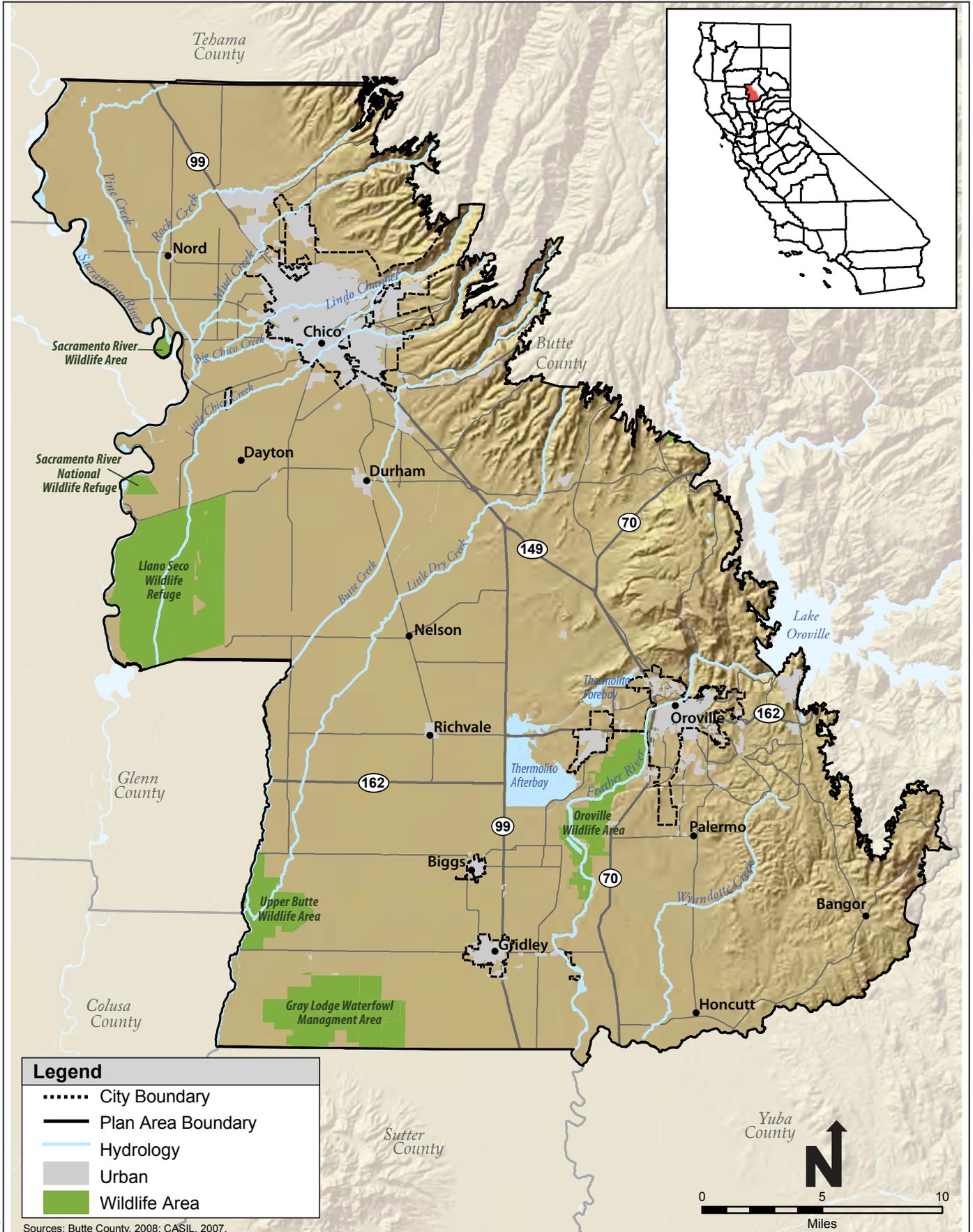
This EIS/EIR evaluates the potential impacts of ITP issuance by USFWS, NMFS, and CDFW; approval and execution of the Implementing Agreement (IA) for the BRCP; and implementation of the BRCP by the Permit Applicants (see Chapter 2, *Proposed Action and Alternatives*, for a detailed description of the proposed action). It also evaluates the impacts of other alternatives, including the No Action Alternative. The purpose of the EIR component of this joint EIS/EIR is to inform member agency decision makers and the public regarding the anticipated significant environmental impacts of the proposed action, potential measures to mitigate these significant impacts, and reasonable alternatives that could reduce the significant environmental impacts of the proposed action to a less-than-significant level. The EIR will be used by the Permit Applicants approving the BRCP to comply with CEQA. The EIR will also be used by CDFW to comply with CEQA in issuing to the Permit Applicants the state NCCPA permit. The purpose of the EIS component of this joint EIS/EIR is to inform the two federal agencies and the public of the effects on the human environment of their issuance of the ITPs to these local and state entities and the implementation of the BRCP. USFWS and NMFS will use the EIS to comply with NEPA for their issuance of ITPs to the Permit Applicants. See Section 1.3, *Purpose and Need*, for more details on the purpose of this document under both NEPA and CEQA.

1.1.1 Background

In 2007, the BRCP Planning Agreement (Planning Agreement) was entered into by the County; the Cities of Oroville, Chico, Biggs, and Gridley; and CDFW, USFWS, NMFS, and BCAG. That document established the initial planning scope and goals and the planning and preparation process for the BRCP. In 2010, the Western Canal Water District, Biggs West Gridley Water District, Butte Water District, Richvale Irrigation District, and Caltrans District 3 signed the Planning Agreement. BCAG was designated as the lead to coordinate the process and preparation of the BRCP.

An organizational structure that allowed for input from stakeholders and the general public was created to develop the BRCP. This organizational structure consisted of a Steering Committee composed of the Permit Applicants and a Stakeholder Committee composed of parties with a broad range of interests in the BRCP Plan Area (Figure 1-1). These interests include biological resources, agriculture, land use and development, education, transportation, resource management, and water delivery. USFWS, NMFS, and CDFW provided input throughout the development of the BRCP and participated in Steering Committee and Stakeholder Committee meetings as well as in separate meetings with BCAG and the consultant team that helped draft the Plan. Public involvement was encouraged through open Stakeholder Committee meetings, public workshops, newsletters, and a regularly updated website.

The Plan was developed in coordination with the development of the County and Cities' general plans in the Plan Area, allowing for feedback between the BRCP and general plan processes. This feedback process identified opportunities and constraints and allowed for improvements in the general plans regarding the avoidance and minimization of impacts on biological resources and the development of open space and conservation elements that dovetail with the BRCP.



Graphics: 00736.01 (3/25/14) AB



Figure 1-1
Plan Area for the Butte Regional Conservation Plan

1.1.2 Plan Area Boundary

The BRCP Plan Area was developed with a focus on the areas where growth and development may greatly affect state- and federally protected species. For the purposes of this EIS/EIR, the Plan Area boundary encompasses 564,219 acres in western Butte County and is the same as the Permit Area (Figure 1-1). This area consists of the western lowlands and foothills of Butte County and is bounded on the west by Tehama, Glenn, and Colusa Counties; on the south by Sutter and Yuba Counties; and on the north by Tehama County. On the east, the Plan Area is defined by the upper extent of landscape dominated by oak woodland natural communities. The elevation below which land cover types dominated by oak trees comprise more than one-half of the land cover present (referred to hereafter as the oak zone) plus a small portion of the City of Chico that extends above the oak zone, marks the woodland boundary. The upper elevational range of the oak zone within the Plan Area varies from about 800 to 1,500 feet above mean sea level. Typically, oak tree-dominated land cover types transition to either chaparral or conifer-dominated land cover types at elevations higher than the Plan Area.

Although the Plan Area includes portions of the Sacramento River within Butte County, the BRCP does not address activities that could affect listed fish species in the Sacramento River; such activities are addressed under other regional conservation planning efforts for the Sacramento River (e.g., the Anadromous Fish Restoration Program). The portion of Sacramento River floodplain within Butte County is included in the BRCP for implementing conservation measures for covered species and natural communities. There are 11 watersheds in the Plan Area: Red Bluff, Butte Basin, Upper Dry Creek, Below Oroville Reservoir, Sutter Bypass, Lower Feather River, South Honcut Creek, Upper Big Chico Creek, Upper Little Chico Creek, Upper Butte Creek, and Bloomer Hill.

1.2 Overview of NEPA and CEQA

1.2.1 NEPA

NEPA provides an interdisciplinary framework with action-forcing procedures requiring federal agency decision makers to take environmental factors into account for their proposed action and a range of alternatives. NEPA applies to all federal agencies and to most of the activities they manage, regulate, or fund that affect the human environment. NEPA requires all agencies to consider and to publicly disclose the environmental implications of their proposed actions through the preparation of appropriate documents. CEQ has adopted regulations and other guidance providing detailed procedures that federal agencies must follow to implement NEPA.

NEPA requires that every federal agency prepare an EIS for proposed legislation or other major federal actions “significantly affecting the quality of the human environment” (42 USC 4332; 40 CFR 1501). In this case, an EIS must be prepared because USFWS, as the federal lead agency under NEPA, has determined that the issuance of ITPs to the Permit Applicants under Section 10 of ESA constitutes a major federal action likely to result in a significant impact on the human environment and, thus, warranted the preparation of an EIS.

As described in CEQ’s NEPA regulations (40 CFR Section 1501.6), federal agencies other than the NEPA lead agency that have jurisdiction by law or special expertise with respect to the action’s anticipated environmental effects can be included as cooperating agencies. Other federal agencies

may use the lead agency's NEPA document to support their own decision-making processes, if appropriate. A *cooperating agency* participates in the NEPA process and may provide input and expertise during preparation of the NEPA document. Federal agencies may designate and encourage nonfederal public agencies, such as state, local, and tribal entities, to participate in the NEPA process as cooperating agencies (40 CFR 1508.5). Accordingly, NMFS, the U.S. Army Corps of Engineers (USACE), and the U.S. Environmental Protection Agency (EPA) are cooperating agencies under NEPA because of their jurisdiction by law, their special expertise in aquatic resources and endangered species, and their involvement in the BRCP. Consequently, this EIS/EIR may be used by NMFS and USACE to satisfy those agencies' NEPA requirements. See Section 1.5, *Uses of this EIS/EIR*, for more details on how each agency will use this document.

1.2.2 CEQA

CEQA requires state and local agencies to estimate and evaluate the environmental implications of their actions and aims to prevent significant environmental impacts of those actions by requiring agencies, when feasible, to avoid significant environmental impacts or reduce them through the adoption of feasible mitigation measures. Like NEPA, CEQA requires all agencies to consider and publicly disclose the environmental implications of their proposed actions through the preparation of appropriate documents. The State CEQA Guidelines are the primary source of rules and interpretation of CEQA.

CEQA requires that the state or local lead agency prepare an EIR when the lead agency determines that a project may have a significant impact on the environment. CEQA applies to all discretionary activities proposed to be carried out or approved by California public agencies. BCAG is the CEQA lead agency, and it has determined that an EIR must be prepared for the proposed action because the BRCP may result in a significant impact on the environment. This EIR has been prepared to facilitate CEQA compliance for all of the Permit Applicants. Each Permit Applicant must adopt the final EIR to provide that compliance.

In addition to lead agencies, responsible and trustee agencies have roles in the environmental review process. A *responsible agency* under CEQA is a state or local public agency other than the CEQA lead agency that has discretionary approval over the project. A *CEQA trustee agency* is a state agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people of California.

CDFW is a responsible agency under CEQA because it will approve the NCCP portion of the BRCP and issue a take permit for the covered species under Section 2835 of the California Fish and Game Code. CDFW is a trustee agency under CEQA because it has jurisdiction by law over the natural resources that are the subject of the BRCP.

All agencies having responsibility for implementing or approving the BRCP, including the Permit Applicants, are considered responsible agencies under CEQA (Section 1.5, *Uses of this EIS/EIR*). All of the Permit Applicants, other than BCAG, are CEQA responsible agencies responsible for approving and implementing the BRCP: the County; the Cities of Oroville, Chico, Biggs, and Gridley; Caltrans District 3; Western Canal Water District; Biggs West Gridley Water District; Butte Water District; and the Richvale Irrigation District.

All Lead and Responsible Agencies have independently reviewed and directed the preparation of this document.

1.2.3 Joint Documentation

CEQ regulations (40 CFR 1506.2), Department of Interior (DOI)² procedures (516 DM 4.18), and the National Oceanic and Atmospheric Administration (NOAA)³ recommend federal agencies to reduce duplication between NEPA requirements, and state and local environmental requirements, by preparing joint documents when possible. Similarly, CEQA and the State CEQA Guidelines strongly encourage state and local agencies to prepare a combined EIS/EIR that satisfies both NEPA and CEQA (PRC § 21083.6, State CEQA Guidelines § 15222).

Although there are many requirements of CEQA and NEPA that are similar or the same, there are some important terminology differences between the two laws. For example, NEPA refers to the activity evaluated in an EIS as a proposed *action* by a federal entity, whereas CEQA refers to the activity as a proposed *project* undertaken, supported, or permitted by a public agency. For purposes of this EIS/EIR, the proposed action comprises the following components.

- Issuance of ITPs by USFWS, NMFS, and CDFW for the covered species associated with covered activities described in the BRCP.
- Approval and execution of the IA for the BRCP.
- All federal, state, and local agency actions or approvals that would be issued or undertaken under the BRCP.
- Implementation of the BRCP by the Permit Applicants.

See Chapter 2, *Proposed Action and Alternatives*, for a detailed description of the proposed action.

1.3 Purpose and Need

NEPA requires that an EIS briefly describe the underlying purpose and need for the Agency's proposed and alternative actions (40 CFR 1502.13). Similarly, the State CEQA Guidelines require that an EIR contain a "statement of objectives sought by the proposed project;" this statement should include the "underlying purpose of the project" (State CEQA Guidelines 15124[b]).

1.3.1 Underlying Need

The need for the proposed action is based on the potential that the Permit Applicants' proposed covered activities that would be conducted, approved, or otherwise under their jurisdiction within the BRCP Plan Area could result in the take of covered species, thereby necessitating ITPs from USFWS, NMFS, and CDFW. Therefore, the Permit Applicants have applied for ITPs pursuant to Section 10(a)(1)(B) of ESA.

² USFWS is a federal government agency within the U.S. Department of the Interior.

³ NMFS is a federal government agency within the NOAA and the U.S. Department of Commerce.

1.3.2 Purpose and Need Statement

The purposes of the proposed action for USFWS and NMFS are listed below.

- In response to the Permit Applicants' application, USFWS and NMFS are proposing to issue ITPs for species currently listed under ESA as well as species that are not currently listed but may become listed during the permit term.
- To comprehensively protect and conserve covered species and to conserve, enhance, and restore the habitat and ecosystems upon which these species depend to ensure their long-term survival in the Plan Area.
- Assemble and maintain a reserve system within the Plan Area that focuses on preservation and enhancement actions that provide for the protection of species, natural communities, and ecosystems on a landscape level.

1.3.3 Statement of Objectives

The objectives of the proposed action for the Permit Applicants are listed below, based on the Planning Agreement for the BRCP.

- Provide for long-term conservation and management of covered species within the BRCP Plan Area at a regional scale while allowing for compatible future land uses and development under the general plans of the cities and County within the BRCP Plan Area and the Regional Transportation Plan (RTP).
- Provide for a streamlined permitting process that integrates habitat conservation with long-term general plan implementation to balance the need for growth with species protection and to make more predictable and certain that future development will comply with endangered species regulations.
- Provide a means to implement covered activities in a manner that complies with applicable state and federal fish and wildlife protection laws, including ESA, the California Endangered Species Act (CESA) (through the NCCPA), NEPA, CEQA, and the Clean Water Act (CWA).
- Provide a basis for permits and authorizations necessary to lawfully take certain native species of plants, fish, and wildlife, including species that are listed as threatened or endangered pursuant to the terms of ESA and CESA.
- Provide for issuance of take permits for other species that are not currently listed but that may become listed in the future.
- Coordinate and standardize mitigation and compensation requirements of ESA, CESA (through the NCCPA), NEPA, CEQA, CWA, and other applicable laws and regulations related to biological and natural resources within the Plan Area so that public and private actions will be governed equally and consistently, thus reducing delays, expenses, and regulatory duplication.
- Support issuance of a Master Streambed Alteration Agreement (MSAA) from CDFW under Section 1602 of the California Fish and Game Code, a programmatic wetlands permit (e.g., Programmatic General Permit) from USACE under CWA Section 404, and a regional water quality certification by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) under CWA Section 401. The BRCP has been prepared to comply with these regulations and facilitate separate applications for programmatic permits from these agencies.

1.4 Public and Agency Involvement

Public participation is an essential part of the NEPA and CEQA processes. The NCCPA and federal regulations also require public participation and outreach. This section describes the public and agency involvement activities for the BRCP, including the EIS/EIR scoping process (pursuant to NEPA and CEQA), agency coordination activities, BRCP Steering and Stakeholder Committee meetings, and other public outreach activities that have occurred since the initial stages of the BRCP planning process.

1.4.1 EIS/EIR Scoping Process

The public scoping process began on December 14, 2012, with the publication of a Notice of Intent (NOI) in the Federal Register (pursuant to NEPA) and submittal of a Notice of Preparation (NOP) to the State Clearinghouse (pursuant to CEQA). The NOI and NOP notified the public and agencies of the BRCP, the intent to prepare an EIS/EIR, and the public meetings held on January 9, 2013. The NOI and NOP also informed the public that written comments on the NOI and NOP should be received by January 28 and January 30, 2013, respectively. The NOI and NOP are included in Appendix A.

Legal notices of the NOP were run in the *Gridley Herald*, *Chico Enterprise-Record*, and *Oroville Mercury-Register* on Friday, December 14, 2012. The NOI/NOP and information about scoping meetings were sent by mail to BCAG's BRCP distribution list, posted on the BRCP website (www.buttehcp.com), and sent by email to USFWS' media contacts and BCAG's email distribution list. Publication of the NOI in the Federal Register constitutes public notice of that document. Additionally, USFWS posted a media release on its website.

Public Scoping Meetings

USFWS, as the NEPA lead agency, and BCAG, as the CEQA lead agency, held two joint public scoping meetings on January 9, 2013.

- Oroville City Council Chambers, 1735 Montgomery Street Oroville, CA 95965, from 2:00 p.m. to 4:00 p.m.
- BCAG Conference Room 2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928, from 6:00 p.m. to 8:00 p.m.

A total of nine people signed in as meeting participants (three in Oroville and six in Chico). Both meetings consisted of a brief presentation by USFWS, BCAG, CDFW, and USACE, followed by an open house-style forum in which participants were encouraged to walk around to various stations to view presentation boards about the BRCP and the environmental review process. Scoping comments received during the public scoping meetings are summarized in Appendix A.

Significant Issues Identified in Scoping Comments

Two comments, summarized below, were received from stakeholders regarding the EIS/EIRs during the scoping period.

- Nitrogen deposition in the Plan Area could contribute to growth of invasive plant species.

- Compliance with CEQA should be ensured in terms of adherence to laws related to historic resources and notification of appropriate tribal governments.

The State of California Office of Planning and Research sent a courtesy letter to reviewing agencies to encourage them to submit comments on the scope and content of the NOP in a timely manner.

1.4.2 Agency Coordination

Technical Agency Meetings

Regular technical agency meetings were held with USFWS, NMFS, USACE, CDFW, and EPA to discuss specific agency concerns related to administrative draft sections of the BRCP. These agencies provided technical input on the baseline data, covered species lists, covered species accounts, existing ecological conditions report, covered activities, impact analysis, and conservation strategy.

Collaboration and Consultation with Tribes

Outreach to tribal governments began with coordinating the formation of the Stakeholder Committee in 2007. Each tribal government in the Plan Area was invited to attend and participate. The Mooretown Rancheria tribe had a representative attend the first few Stakeholder Committee meetings in 2007. Several tribal government representatives receive updates on the BRCP via the “interested parties” email distribution list and through mailing list newsletters.

USFWS identified potentially interested parties as defined in 36 CFR 800 and in 33 CFR 325 by contacting the Native American Heritage Commission (NAHC) to request a Sacred Land search and list of tribal groups or individuals with local information or an interest in the BRCP. The NAHC was contacted on September 5, 2013.

1.4.3 Committee Meetings

An organizational structure was created to develop the BRCP efficiently and with substantial opportunity for input from stakeholders and the general public. BCAG led coordination of the process and preparation of the BRCP, while the federal and state permitting agencies—USFWS, NMFS, and CDFW—participated in Steering Committee and Stakeholder Committee meetings as well as separate meetings with BCAG, the BRCP consultant, and the environmental consultant.

Steering Committee

A Steering Committee was established in 2007 to provide administrative oversight in the development of the BRCP. The members of the BRCP Steering Committee are listed below.

- Butte County, Board of Supervisors (various districts)
- City of Chico, Mayor
- City of Oroville, Mayor or City Council Member
- Caltrans District 3, Director
- Western Canal Water District, District Manager

USFWS, NMFS, and CDFW staff members also attend these meetings. Steering Committee meetings are scheduled on an as-needed basis and are open to the public.

Stakeholder Committee

The BRCP Stakeholder Committee was formed in 2007 and is composed of a group of interested stakeholders with a broad range of interests in the BRCP and Plan Area. The committee is responsible for reviewing draft sections of the BRCP and providing recommendations for BRCP development to BCAG and the Steering Committee. The member organizations of the Stakeholder Committee are listed below.

- Chico Building Industry Association
- Butte County Farm Bureau
- Ducks Unlimited
- Butte Environmental Council
- Altacal Audubon Society
- Sierra Club
- CSU Chico
- Butte County Agricultural Commission
- The Nature Conservancy
- California Native Plant Society (CNPS)
- Butte County Resource Conservation District
- Caltrans
- Western Canal Water District
- Biggs–West Gridley Water District
- Butte Water District
- Richvale Irrigation District

USFWS, NMFS, CDFW, and USACE staff members also attend these meetings. The Stakeholder Committee generally meets on a monthly basis at the BCAG Conference Room, and its meetings are open to the public.

1.4.4 BRCP Public Outreach

In addition to the public involvement opportunities associated with the Steering and Stakeholder Committee meetings, other public outreach and involvement has taken place since the initial stages of the BRCP planning process. Public workshops were held on September 5, 2007, in Chico and on September 12, 2007, in Oroville, in part to educate and involve the public in the BRCP development process and answer questions from the community. Workshops were held again on January 15, 2013, in Oroville and Gridley and on January 16, 2013, in Chico to solicit additional public input and further educate the public on the BRCP.

Newsletters

BRCP newsletters have been published on a regular basis to keep interested parties updated with the latest information on development of the BRCP. To date, nine newsletter editions have been

released: Summer/Fall 2007, Winter 2008, Summer 2008, Spring 2009, Fall 2009, Spring 2010, Winter 2011, Winter 2012, and Winter 2013.

Project Website

A project website (www.buttehcp.com) was established for the BRCP in 2007. BCAG staff manages the website and updates the contents on a regular basis. The website provides updated information on the BRCP process and status, including public meetings, and serves as a clearinghouse for BRCP planning and environmental documents. Public comments can be submitted through the “Contact Us” page. This EIS/EIR is also available on the website.

1.5 Uses of this EIS/EIR

Implementation of the BRCP will require permits and approvals from the Lead Agencies as well as public agencies other than the Lead Agencies. This section describes the uses of this EIS/EIR by the Lead Agencies as well as the Cooperating and Responsible Agencies. Table 1-1 summarizes the permits and approvals associated with implementation of the BRCP.

Table 1-1. Summary of Federal and State Permits and Approvals for the BRCP

Agency	Legal Authority	Permit or Approval
Federal		
U.S. Fish and Wildlife Service	Federal Endangered Species Act, Section 7	Biological Opinion
	Federal Endangered Species Act, Section 10(a)(1)(B)	Incidental Take Permit; Implementing Agreement
National Marine Fisheries Service	Federal Endangered Species Act, Section 7	Biological Opinion
	Federal Endangered Species Act, Section 10(a)(1)(B)	Incidental Take Permit; Implementing Agreement
U.S. Army Corps of Engineers	Clean Water Act, Section 404	Evaluation of permit application(s) for the discharge of dredged and/or fill material into waters of the United States under Section 404 of the Clean Water Act.
State		
Department of Fish and Wildlife	California Fish and Game Code, Section 2835	Incidental Take Permit; Implementing Agreement
	California Fish and Game Code, Section 1602	Master Streambed Alteration Agreement
Central Valley Regional Water Quality Control Board	Clean Water Act, Section 401; Section 10 of the Rivers and Harbors Act	Regional Water Quality Certification

1.5.1 U.S. Fish and Wildlife

USFWS must decide whether to issue an ESA Section 10(a)(1)(B) permit (ITP) for the species under its jurisdiction that are covered under the BRCP (all nonmarine and nonanadromous species). They must also select a preferred alternative. ESA Section 10(a)(2)(B) requires that specific issuance criteria be met before USFWS may issue ITPs. The Permit Applicants have proposed a permit term of 50 years. If they decide to issue the ITP, USFWS would also sign the IA.

Permit Issuance Criteria

The issuance criteria for an ITP are contained in ESA Section 10(a)(2)(B) and the implementing regulations for ESA (50 CFR 17.22[b][2][i]). These issuance criteria are listed below.

1. All taking of federally listed fish and wildlife species must be incidental to otherwise lawful activities.
2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
3. The applicant will ensure that adequate funding for the HCP and procedures to deal with changed circumstances, including adequate funding to address such changes, will be provided.
4. The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
5. The applicant will ensure that other measures that USFWS may require will be provided.

An applicant must prepare and submit to USFWS for approval an HCP containing the mandatory elements of Section 10(a)(2)(A) before an ITP can be issued. Accordingly, the HCP must specify the following information.

1. The impact that will likely result from the taking.
2. What steps the applicant will take to monitor, minimize, and mitigate such impacts; the funding available to implement such steps; and the procedures to be used to deal with unforeseen circumstances.
3. What alternative actions to such taking the applicant considered and the reasons why such alternatives are not proposed to be used.
4. Such other measures that USFWS may require as being necessary or appropriate for the purposes of the plan.

The determination as to whether the criteria have been met will be described in USFWS's decision package: a Biological Opinion (BO) pursuant to Section 7 of ESA; a Findings and Recommendations for the issuance of a Section 10(a)(1)(B) permit; and a NEPA decision document (in this case, a Record of Decision [ROD]). These decision documents are produced at the end of the process and will contain the rationale behind USFWS's decision to either approve or deny a Section 10(a)(1)(B) permit application. USFWS may decide to issue the ITPs, which will contain standard terms and conditions and may also contain additional terms and conditions as deemed appropriate by USFWS. Alternatively, USFWS may deny the ITPs.⁴

⁴ Permit denial regulations are codified in 50 CFR 13.21(b).

ESA Section 7

Issuance of an ITP is also a federal action subject to Section 7 of ESA. Section 7(a)(2) requires all federal agencies, in consultation with USFWS, to ensure that any action “authorized, funded, or carried out” by any such agency “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification” of critical habitat. Because issuance of a Section 10 permit involves a federal authorization, it is subject to this provision. In this case, because it is issuing the authorization, USFWS will conduct an internal consultation. Although the provisions of Section 7 and Section 10 are similar, Section 7 and its regulations require an analysis of the HCP’s direct and indirect effects, a jeopardy analysis for federally listed plants, and effects on critical habitat. The results of this internal consultation will be documented in a BO, which will be produced at the end of the process.

NEPA

Issuance of an ITP is a federal action subject to NEPA. An EIS is required when the project or activity that would take place under the HCP is a major federal action that would significantly affect the quality of the human environment, though an agency may produce an EIS at its discretion even when the action is not likely to result in significant effects. As the federal lead agency under NEPA, USFWS has determined that issuance of ITPs for the BRCP is a major federal action likely to result in a significant impact on the environment, and preparation of an EIS is warranted. The EIS will culminate in a ROD, which will document USFWS’s final decision.

1.5.2 National Marine Fisheries Service

NMFS shares responsibility with USFWS for implementing ESA and oversees marine and anadromous species. Like USFWS, NMFS must also decide whether to issue ESA ITPs for the federally listed species covered under the BRCP. NMFS would also be responsible for executing the IA. The same issuance criteria (pursuant to Section 10[a][2][B] of ESA) must be met before NMFS may issue ITPs.

As part of its decision package, NMFS will need to issue a separate BO. As discussed in this chapter, NMFS is a Cooperating Agency under NEPA (see Section 1.2.1, *NEPA*, in this chapter). Accordingly, a ROD will likely be issued by NMFS at the end of the process.

1.5.3 California Department of Fish and Wildlife

CDFW must decide whether to approve the NCCP and issue an ITP for the state-listed species covered in the BRCP, pursuant to Section 2835 of the California Fish and Game Code. The determination as to whether the criteria for approval of the NCCP and issuance of ITPs have been met is described in CDFW’s ITP decision and CEQA findings. CDFW would also be jointly responsible for executing the IA.

NCCPA

In accordance with the NCCPA (California Fish and Game Code, § 2800 et seq.), CDFW will approve the NCCP for implementation after making the following findings, based on substantial evidence in the record.

1. The BRCP has been developed consistent with the process identified in the Planning Agreement entered into pursuant to California Fish and Game Code Section 2810.
2. The BRCP integrates adaptive management strategies that are periodically evaluated and modified on the basis of information from the monitoring program and other sources. These strategies will assist in providing for the conservation of covered species and ecosystems within the Plan Area.
3. The BRCP provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term management of habitat reserves or other measures that provide equivalent conservation of covered species appropriate for terrestrial, aquatic, and marine habitats within the Plan Area.
4. The development of reserve systems and conservation measures in the Plan Area provides, as needed for the conservation of species, all the following functions.
 - a. Conserving, restoring, and managing representative natural and seminatural landscapes to maintain the ecological integrity of large habitat blocks, ecosystem functions, and biological diversity.
 - b. Establishing one or more reserves or other measures that provide equivalent conservation of covered species within the Plan Area, and linkages between the reserves and adjacent habitat areas outside the Plan Area.
 - c. Protecting and maintaining habitat areas that are large enough to support sustainable populations of covered species.
 - d. Incorporating a range of environmental gradients (e.g., slope, elevation, aspect, coastal or inland characteristics) and high habitat diversity to provide for shifting species distributions due to changed circumstances.
 - e. Sustaining the effective movement and interchange of organisms between habitat areas in a manner that maintains the ecological integrity of the habitat areas within the Plan Area.
5. The BRCP identifies activities, and any restrictions on those activities, allowed within reserve areas that are compatible with the conservation of species, habitats, natural communities, and their associated ecological functions.
6. The BRCP contains specific conservation measures that meet the biological needs of covered species and are based on the best available scientific information regarding the status of covered species and the impacts of permitted activities on those species.
7. The BRCP contains a monitoring program.
8. The BRCP contains an adaptive management program.
9. The BRCP establishes the estimated timeframe and process by which the reserves or other conservation measures are to be implemented, the obligations of landowners and plan signatories, and the consequences of the failure to acquire lands in a timely manner.
10. The BRCP contains provisions that ensure adequate funding to carry out the conservation actions identified in the plan.

Section 2835 of the NCCPA allows CDFW to authorize take in an NCCP for any identified species for which conservation and management is provided in the plan, whether or not the species is listed as threatened or endangered under CESA or ESA.

CDFW will also enter into a master streambed alteration agreement (MSAA) with BCAG under Section 1602 of the California Fish and Game Code that will be implemented under the local aquatic resources ordinance. The MSAA will allow BCAG to authorize activities that affect the bed and bank of streams, ponds, and lakes, in the Plan Area with the implementation of the Aquatic Resources Plan (ARP) (refer to Section 1.5.4, *U.S. Army Corps of Engineers*, for additional information about the ARP).

CEQA

NCCPs require appropriate compliance with CEQA. The CEQA document for the NCCP must include a specific mitigation, monitoring, and reporting program consistent with the requirements of PRC Section 21000 et seq. As a responsible and trustee agency under CEQA, CDFW would be required to adopt the EIR and make findings pursuant to the EIR.

1.5.4 U.S. Army Corps of Engineers

The Permit Applicants are anticipating a Regional General Permit issued by USACE to authorize BRCP covered activities BRCP that would result in the discharge of dredge and/or fill material into waters of the United States pursuant to CWA Section 404 and Section 10 of the Rivers and Harbors Act of 1899. If sufficient for its purposes, USACE intends to use this EIS/EIR to support the RGP. If issued, the proposed RGP would include conditions, including reporting requirements, impact thresholds, mitigation (avoidance, minimization, and compensation), and compliance with other related federal laws (e.g., CWA Section 401, ESA, NHPA).

During RGP development, USACE may use the information and analysis found in this EIS/EIR to develop cumulative and alternative analysis documents in support of the RGP. The overall CWA permitting strategy for BRCP approved projects will primarily include the RGP. However, Individual Permits, including Letter of Permission (LOP) may be used to cover activities under the BRCP that do not meet the RGP conditions or impact thresholds. The overall CWA permit strategy would incorporate the BRCP conservation measures and provide greater protection to waters of the United States in the Plan Area than provided under the current CWA program (i.e., no RGP). If sufficient, USACE would utilize the BRCP and EIS information and analyses to the maximum extent possible to develop and implement the 404 permitting strategy. As a cooperating agency, USACE would consider the EIS to be a programmatic NEPA document from which it can tier to make permit decisions, including establishing the RGP and issuing Individual permits.

ARP

The Butte Regional ARP establishes a local program to conserve aquatic resources in the Plan Area through the avoidance and minimization of impacts on aquatic resources from regional growth and development. It provides for the conservation of wetlands, streams, and the waters and the watersheds that support them in the Plan Area while streamlining the USACE's CWA Section 404 and 401 permit process for covered activities. The ARP will be integrated into the BRCP. See Chapter 2, *Proposed Action and Alternatives*, for a detailed description of the ARP.

NEPA

USACE would also need to ensure compliance with the United States Environmental Protection Service's Section 404(b)(1) guidelines for any proposed RGP and standard permits that would result in the discharge of dredged and/or fill material into waters of the United States. As part of its

compliance with the Section 404(b)(1) guidelines, USACE would conduct an alternatives analysis to determine the least environmentally damaging practicable alternative (LEDPA). In addition, USACE would need to evaluate any proposed RGPs, LOPs, and standard permits to determine if they are contrary to the public interest. USACE cannot issue any permits for activities that do not meet all of the requirements of the 404(b)(1) guidelines and/or that are contrary to the public interest. Compliance with the Section 404(b)(1) guidelines and the effects on the public would be determined by USACE in its decision documents for any proposed RGPs, LOPs, or standard permits.

This EIS/EIR has been prepared in cooperation with USACE as a NEPA cooperating agency; consequently, the alternatives analysis contained in this EIS/EIR is expected to satisfy USACE's alternatives analysis obligations as set forth in the 404(b)(1) guidelines, as well as NEPA requirements.

Moreover, if sufficient, USACE may rely on and tier from the alternatives analysis in an existing EIS, such as this EIS/EIR, in reviewing subsequent individual permit applications (i.e., for activities that are not authorized in the RGP). USACE can, therefore, tier from this EIS/EIR for covered projects that fall within the BRCP's and the ARP's parameters.

1.5.5 Participating Jurisdictions

BCAG would be responsible for adopting the BRCP, certifying the EIS/EIR as the lead agency under CEQA, making Findings of Fact pursuant to CEQA, and signing the IA. Each of the Permit Applicants must decide whether to adopt the BRCP and sign the IA. Each of these entities is also a responsible agency under CEQA and would be required to adopt the EIR and make findings pursuant to the CEQA.

Local jurisdictions that adopt the BRCP, sign the IA, and adopt the EIR would be listed on the joint ESA Section 10(a)(1)(B) ITP and NCCPA Section 2835 permits. These permits will provide authorization for take of covered species resulting from covered activities within their respective jurisdictions. To implement the BRCP, the Local Agencies would rely on the land use authority provided through their general plans and zoning ordinances. Local Agencies may be required to pass a local ordinance to implement the local funding provisions of the BRCP.

1.5.6 Relationship of EIS/EIR with the BRCP

The proposed action, as described in Chapter 2, *Proposed Action and Alternatives*, is based on information contained in the BRCP, including the Plan Area boundary, goals and objectives, covered species, covered activities, and anticipated permit duration. In addition to the species identified for coverage under the BRCP, this EIS/EIR also evaluates species not proposed for coverage by the BRCP that may be affected by plan implementation, such as special-status animal and plant species that are legally protected under ESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing.

This EIS/EIR evaluates a broad range of alternatives to the proposed action, including a no action alternative. This EIS/EIR will be used to inform agency decision makers and the public regarding the potential significant environmental effects of the proposed action, potential measures to mitigate these significant effects, and reasonable alternatives that could reduce the significant adverse environmental effects related to implementing the proposed action. See Chapter 2 for a more complete discussion of the requirements of selecting and evaluating alternatives.

Chapter 2

Proposed Action and Alternatives

This chapter describes the proposed action and the implementation of the conservation strategy that is intended to provide for the conservation of the covered species and natural communities addressed by the BRCP. This chapter also describes the requirements of NEPA and CEQA and other regulatory considerations for the development of alternatives to the proposed BRCP, the alternatives selection process, alternatives carried forward for detailed analysis in this EIS/EIR, and alternatives eliminated from further consideration.

2.1 Approach to Developing Alternatives

2.1.1 Regulatory Framework

NEPA and CEQA

Range of Alternatives

NEPA and CEQA require that an EIS/EIR evaluate a reasonable range of alternatives to a proposed action, including a no action alternative. While there is no clear rule for determining a reasonable range, NEPA and CEQA provide guidance that can be used to define a range of alternatives for consideration in an EIR/EIS.

According to NEPA, the range of alternatives required in an EIS is governed by the rule of reason, which requires an EIS to set forth only those alternatives necessary to permit a reasoned choice. The reasonable range of options is to be defined by the specific facts and circumstances of the proposed action. To be considered reasonable, it is generally understood that first, alternatives must fulfill the basic requirements of the statement of purpose and need (described for the BRCP in Chapter 1, *Introduction*). Second, alternatives to be analyzed should not have more significant impacts on the environment than the proposed action or result in impacts that are indistinguishable from those of the proposed action. Finally, alternatives must be able to be feasibly carried out in the context of technical, economic, environmental, and other factors. If alternatives have been eliminated from detailed study, the EIS must briefly discuss the reason for their elimination (40 CFR 1502.14[a]; Forty Questions No. 1[a]).

The range of alternatives under CEQA is governed by the rule of reason. Alternatives under CEQA must meet the basic project objectives, should not result in greater impacts on the environment than those of the proposed project, and must be potentially feasible. In determining whether alternatives are feasible, lead agencies are guided by the general definition of feasibility found in State CEQA Guidelines Section 15364: “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” In accordance with State CEQA Guidelines Section 15126.6[f], the lead agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent’s control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must

briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied upon in making the selection. It should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (State CEQA Guidelines Section 15126[d][2]).

No Action/No Project Alternative

A no action alternative is required to be considered in an EIS and a no project alternative is required to be considered in an EIR. A no action/no project alternative allows decision makers to compare the impacts of approving the project to the impacts of not approving the project. CEQ regulations for implementing NEPA require an EIS to include evaluation of a no action alternative (40 CFR 1502.14). At the lead agencies' discretion under NEPA, the no action alternative may be described as the future circumstances without the proposed action and can also include predictable actions by persons or entities, other than the federal agencies involved in a project action, acting in accordance with current management direction or level of management intensity. When the proposed action involves updating an adopted management plan or program, the no action alternative includes the continuation of the existing management plan or program.

Under CEQA, an EIR is required to analyze the no project alternative. State CEQA Guidelines Section 15126.6, Subdivision (e)(2) indicates that no project conditions may include some reasonably foreseeable changes in existing conditions and changes that would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

Clean Water Act

Activities that would result in the discharge of dredged or fill material into waters of the United States require authorization from USACE under Section 404 of the CWA. Projects subject to permitting under the CWA must comply with Section 404(b)(1) guidelines (40 CFR, Part 230) for discharge of dredged or fill material into waters of the United States. Section 404(b)(1) guidelines require that

except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

The guidelines consider an alternative practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Practicable alternatives under the guidelines assume that "alternatives that do not involve special aquatic sites are available, unless clearly demonstrated otherwise." The guidelines also assume that "all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise."

The Permit Applicants are seeking a Regional General Permit (RGP) under Section 404 from USACE to accompany the BRCP. If issued, this RGP would authorize BRCP activities that meet the conditions of the RGP and result in no more than minimal individual or cumulative impact on waters of the United States. As part of the evaluation to issue an RGP under Section 404, USACE will issue a public notice, address the public's comments, and address the EPA's Section 404(b)(1) regulations

(analysis of possible alternatives to the RGP and LEDPA determination) in their decision document issued with the RGP.

Endangered Species Act

ESA Section 10(a)(1)(B) requires applicants for ITPs to specify in an HCP what alternative actions to the take of federally listed threatened and endangered species were considered and the reasons that those alternatives were rejected. There is no similar requirement under the NCCPA. This requirement is addressed in Chapter 9 of the BRCP, which considers alternatives to take. Alternatives to take can be similar to EIS/EIR alternatives, but they do not have to be the same because they fulfill different regulatory requirements. Alternatives to take typically include alternatives such as not achieving implementation of the general plan and reducing overall development in certain areas.

2.1.2 Alternatives Considered

Ideas for potential alternatives came from a variety of sources, including the BRCP development process, the public scoping process under CEQA and NEPA, and the lead and cooperating agencies. The following categories of potential alternatives to the BRCP were considered by the lead agencies. All alternatives considered were different types of conservation plans that varied in the ways described below.

- **Variation in permit term.** Permit term of 30 or 40 years (instead of 50 years).
- **Variation in covered species.** Fewer covered species (e.g., only species currently listed as threatened or endangered under ESA or CESA).
- **Variation in Permit Area.** Smaller or larger Permit Area (e.g., all of Butte County, county-only Permit Area [excluding cities]).
- **Variation in covered activities.** Reduced development by each participating jurisdiction consistent with general plan development alternatives.
- **Variation in the conservation strategy.** Changes in the type, location, magnitude, or frequency of implementing certain conservation measures, or considering only an HCP component of the conservation plan.

Additionally, in anticipation of USACE's use of the EIS/EIR to satisfy its requirements under CWA Section 404(b)(1), the following alternatives were also considered for evaluation.

- **No Programmatic General Permit or Letter of Permission Issued by USACE Alternative.** The CWA evaluation would consider effects on wetlands and waters on a project-by-project basis.
- **No Fill Alternative (No Section 404 Action).** Development would be allowed but would avoid all fill of waters and wetlands; USACE would not permit any development that would affect waters or wetlands.
- **Reduced Development/Reduced Fill Alternative.** This alternative would aim to reduce the potential impacts on waters and wetlands.

2.1.3 Alternatives Screening

Once alternatives were selected, they were screened against a set of criteria using a systematic screening process. Screening occurred in three tiers, with separate criteria used in each tier. Potential alternatives that met the screening criteria in one tier were carried forward to the next tier. Only the alternatives that met the criteria for all three tiers were carried forward in this EIS/EIR for detailed analysis.

The screening criteria for the EIS/EIR are based on a number of considerations, including (1) legal requirements for adequate discussions of alternatives in the EIS/EIR, as set forth in CEQA and NEPA and the regulations and case law interpreting those statutes; (2) concepts of “potential feasibility” under CEQA and “reasonableness” under NEPA; and (3) CWA Section 404(b)(1) screening criteria.

Under CEQA, alternatives to be included in an EIR, in addition to a no project alternative, must satisfy the following requirements.

- Are potentially feasible.
- Attain most of the basic objectives of the project.
- Avoid or substantially lessen any of the significant effects of the project.

BCAG, as the CEQA lead agency, may structure its alternatives around a reasonable definition of a fundamental underlying purpose and need not study alternatives that cannot achieve the basic project objectives.

CEQ’s *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations* is used as NEPA guidance by DOI (including USFWS, the NEPA lead agency, and NMFS, the NEPA cooperating agency). The CEQ guidance indicates that the “range of alternatives” should include all reasonable alternatives that must be rigorously explored and objectively evaluated, as well as those other alternatives that are eliminated from detailed study with a brief discussion of the reasons for eliminating them. The reasonable range of alternatives also includes those that are not within the jurisdiction of the lead agencies. The CEQ guidance also states that what constitutes a reasonable range depends on the nature of the action. When there is potentially a very large number of alternatives, a reasonable range of alternatives covering the full spectrum of reasonable alternatives can be identified for detailed analysis in the NEPA document.

DOI has adopted additional regulations (43 CFR Section 46.415[b]) that require, in addition to a no action alternative, an EIS to include alternatives that meet the following requirements.

- Are reasonable.
- Meet the purpose and need of the proposed action.
- Address one or more significant issues related to the proposed action.

Finally, USACE must address certain issues when evaluating alternatives for consideration in NEPA documents and to determine the LEDPA under Section 404(b)(1) of the CWA. These issues include those listed below.

- Availability.
- Overall purpose.
- Costs.

- Logistics.
- Existing technology.
- Direct impacts on waters of the United States.
- Direct impacts on special aquatic sites.

First Tier Screening Criteria

The legal requirements of CEQA and NEPA were considered in the context of the statements of project objectives and purpose (Chapter 1, Section 1.3, *Purpose and Need*) to develop the following first tier screening criteria.

- Could the potential alternative provide for long-term conservation and management of covered species within the Plan Area at a regional scale while allowing for compatible future land uses and development under the general plans of the County and Cities within the Plan Area and the RTP?
- Could the potential alternative provide for a streamlined endangered species permitting process that integrates habitat conservation with long-term general plan implementation to balance planned growth with species protection and to make more predictable and certain that future development will comply with endangered species regulations?
- Could the potential alternative provide a means to implement covered activities in a manner that complies with applicable state and federal laws such as the CWA and fish and wildlife protection laws, including ESA and CESA (through the NCCPA)?
- Could the potential alternative coordinate and standardize mitigation and compensation requirements of ESA, CESA (through the NCCPA), NEPA, CEQA, the CWA, and other applicable laws and regulations related to biological and natural resources within the Plan Area so that public and private actions will be governed equally and consistently, thus reducing delays, expenses, and regulatory duplication?
- Could the potential alternative support issuance of a MSAA from CDFW under Section 1602 of the California Fish and Game Code, a regional general wetlands permit (e.g., RGP) from USACE under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act, and/or a regional water quality certification by the Central Valley Water Board under Section 401 of the CWA?

Under the principles of both CEQA and NEPA, for an alternative to be advanced to the next tier of screening, the answer to most or all of these questions had to be *possibly* or *unknown*. If the answers to most of the questions were *not likely*, the potential alternative was rejected.

Second Tier Screening Criteria

Potential alternatives that advanced to the second tier of screening were evaluated under CEQA using the following question.

- Would the potential alternative avoid or substantially lessen any of the significant environmental effects of the proposed project?

Similarly, potential alternatives that advanced to the second tier of screening were evaluated under NEPA using the following question.

- Would the potential alternative address one or more significant issues related to the proposed action?

If the answer to the first question under CEQA was *possibly* or *unknown*, the potential alternative was carried forward for third tier screening. If the answer under CEQA was *possibly* or *unknown*, and the answer under NEPA was *no*, then the potential alternative was also considered under subsequent screening. If the answers to both questions were *no* or *not likely*, then the potential alternative was rejected.

Third Tier Screening Criteria

The third-tier criteria focus on CEQA's concept of feasibility and NEPA's principle of reasonableness. Under CEQA, alternatives evaluated in an EIR should be feasible. CEQA defines feasible as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. Under NEPA, an EIS must rigorously explore and objectively evaluate all reasonable alternatives. Reasonable alternatives include those that are practical or feasible from a technical or economic standpoint. Under both NEPA and CEQA, potential alternatives can be developed using economic considerations, social factors, legal feasibility under species protection laws, and technical factors to inform the general concepts of feasibility under CEQA and reasonableness under NEPA. The CWA 404(b)(1) analysis must consider similar issues to those under CEQA and NEPA. These include costs, logistics, existing technology, and overall purpose.

In addition to these CEQA and NEPA considerations, direct impacts on waters of the United States and direct impacts on special aquatic sites must be evaluated under the CWA and USACE must consider; the third-tier criteria includes the following issues.

- Would the marginal costs of the potential alternative, as compared to the cost with the proposed action, be so substantial that a reasonably prudent public agency would not proceed with the alternative?
- Would the marginal costs of the potential alternative, as compared with the cost of the proposed action, be so substantial that it would be impractical to proceed with the alternative?
- Would the potential alternative take so long to implement, as compared with the proposed action, that it would not meet the project purpose or objectives within an acceptable time frame?
- Would the potential alternative require technology or physical components that are clearly technically infeasible based on currently available science and engineering for the scope of the potential alternative?
- Would construction, operation, and/or maintenance of the potential alternative violate any federal or state statutes or regulations?
- Would the potential alternative involve an outcome that is clearly undesirable from a policy standpoint in that the outcome could not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors?

- Would the potential alternative involve a potential increase in direct impacts on waters of the United States?
- Would the potential alternative involve a potential increase in direct impacts on special aquatic sites?

If the answers to all these questions were *not likely* or *unknown*, the potential alternative is considered in this EIS/EIR. If the answers to any of these questions were *likely* or *yes*, the potential alternative failed the third tier screening and, consequently, is not considered in detail in this EIS/EIR.

2.2 Alternatives Eliminated

This section describes the alternatives eliminated from further analysis in this EIS/EIR as they did not satisfy the three-tiered screening process described above. Brief descriptions of the alternatives screened and the primary reason for eliminating the alternatives from consideration are provided below. Appendix B presents three tables that provide additional information regarding the alternative elimination process.

2.2.1 Reduction in Covered Species

Under this alternative, the HCP/NCCP would only include species currently listed as threatened or endangered under ESA or CESA, a reduction to 19 covered species from the 40 covered species proposed in the BRCP. As a result, it is expected that the type and amount of conservation lands would be reduced. The type and number of covered activities as described in the BRCP would remain the same under this alternative.

This alternative was rejected during second tier screening primarily because maintaining covered activities identified in many of the Local Agencies' general plans could result in significant environmental effects on species of special status or concern (which would not be protected under this alternative). These effects would not be offset by the conservation strategy or conservation lands established because they would not include these types of species. Therefore, it is not expected this potential alternative would avoid or substantially lessen any of the significant environmental effects of the proposed action.

2.2.2 Reduction in Permit Area

Permit conditions under this alternative would only include those covered activities in the Plan Area that occur within County jurisdiction, outside of the spheres of influence (SOIs) of the Cities in the county. Conservation measures and the conservation strategy would be limited to areas within the jurisdiction of the County outside of the Cities' SOIs and would not include lands or resources within the Cities' SOIs. Therefore, the Cities would not be Permit Applicants.

This alternative was rejected during first tier screening primarily because it would not include the Cities' covered activities; therefore, it would not provide long-term conservation and management while allowing for land uses and continued growth under the Cities' general plans. Furthermore, Cities would be required to process permits on a project-by-project basis. Therefore, any mitigation to conserve habitat that might occur as a result of individual projects would not be integrated with the county efforts. This would not make the process more predictable for future development in the

cities. It could also create confusion for water and irrigation districts whose service areas are located in both the cities and the county.

2.2.3 Increase in Permit Area

The Plan Area under this alternative would be expanded to apply to all of Butte County. Specifically, it would extend the Permit Area to the east, which goes upslope to elevations over 7,000 feet. In addition to an increase in the unincorporated lands covered under this alternative, it would include the Town of Paradise and conservation of some of the natural communities within and around the town. This alternative would include the same permit conditions for covered activities and same conservation measures and conservation strategy as the BRCP, in addition to a larger conservation strategy that would be applied to all of Butte County. The increased Plan Area would include habitat types not included in the BRCP. Under this alternative, up to six additional wildlife species could be covered and up to seven additional plant species, for a total of 53 potentially covered species.

This alternative was rejected during third tier screening primarily because the expanded Plan Area would bring in numerous additional natural communities, habitats, covered species, and land uses that would add substantial time and costs to the development of the BRCP. Participating jurisdictions are also likely to perceive the costs and delays to be unacceptable and not proceed with the alternative. Therefore, marginal costs compared to those of the proposed action are expected to be substantial such that it would be impractical to proceed with this potential alternative.

2.2.4 Habitat Conservation Plan/2081 Conservation Plan

This alternative would include the same covered activities (i.e., level of development) as the BRCP but the conservation strategy would only identify lands needed for mitigation to satisfy ESA and CESA (i.e., an HCP/2081, not an HCP/NCCP). As a result, the amount of land conserved would be reduced by up to two thirds of the land conserved by the BRCP.

This alternative was rejected during first tier screening primarily because the HCP/2081 would not provide the same level of permit streamlining for ESA compliance because fewer species would be listed in this type of plan (10 instead of 40). Also, effects on the non-listed species would be handled outside of the HCP/2081 process, thus resulting in a non-streamlined permitting process. Furthermore, a reduction of listed species under the HCP/2081, while maintaining the covered activities identified in many of the Local Agencies' general plans, could result in significant environmental effects on listed species that are not covered. These effects would not necessarily be offset by the conservation strategy or conservation lands established because the amount of conservation would be less as the HCP/2081 would be required to mitigate impacts on covered species but not contribute to species recovery.

2.2.5 No Programmatic General Permit or Letter of Permission Issued by USACE

This alternative would include the permit conditions and conservation strategy of the BRCP without the issuance of a Programmatic General Permit (PGP) or letter of permission (LOP) (as was under consideration at the time of alternatives screening) by USACE. Therefore, under this alternative, the effects of covered activities on waters of the United States, including wetlands, would be evaluated

on a project-by-project basis using existing permitting mechanisms (i.e., Nationwide Permit Program, Sacramento District’s Minor Impact Letter of Permission, and standard permit process).

This alternative was rejected during first tier screening primarily because effects on waters of the United States, including wetlands, would be considered on a project-by-project basis. Therefore, any attempt to conserve habitat that might occur as a result of individual projects would not be integrated into the habitat conservation that occurs within the county and would not make the process more predictable for future development in the cities. Furthermore, because effects on waters of the United States, including wetlands, would be considered on a project-by-project basis, coordination and standardization for mitigation and compensation requirements would not occur between applicable laws (i.e., ESA, CESA, NEPA, CEQA, and the CWA).

2.2.6 No Fill/No PGP Alternative

Under this alternative, development consistent with Local Agencies’ general plans would proceed but would be required to avoid the placement of any dredged or fill material into wetlands or other waters of the United States. USACE would not issue any permits (such as the PGP that was under consideration at the time of alternatives screening) that would affect waters or wetlands associated with covered activities under the BRCP. Therefore, development would be limited to upland locations and exempt activities under the CWA. In addition, this alternative would not include conservation measures that could potentially affect waters or wetlands.

This alternative was rejected during the first tier screening as it would not allow for compatible future land uses and development under the Local Agencies’ general plans within the Plan Area and the RTP because USACE would not permit implementation of the general plans within the Plan Area that would affect waters of the United States. In addition, avoiding all jurisdictional waters, including wetlands, would be logistically and cost prohibitive. It would not govern public and private actions equally or consistently because the action would likely need to be modified depending on the type and extent of jurisdictional waters, including wetlands. This would ultimately be expected to result in delays and expenses.

2.3 Alternatives Carried Forward

The alternatives screening process described in Section 2.1.3 resulted in four alternatives to be further analyzed in the EIS/EIR. These alternatives are: Alternative 1—the No Action (No Plan Implementation); Alternative 2—Proposed Action; Alternative 3—Reduced Development/Reduced Fill; and Alternative 4—Greater Conservation.

2.3.1 Alternative 1—No Action (No Plan Implementation)

This EIS/EIR includes an analysis of a no action alternative/no project alternative in accordance with the requirements of NEPA and CEQA, respectively. In this document, the no action/no project alternative is referred to as the No Action Alternative. The analysis of this alternative allows decision makers to compare the impacts of approving or of not approving the proposed action.

Geographic Area

The geographic area for the No Action Alternative is the same as the Plan Area, as described in Chapter 1, Section 1.1.2, *Plan Area Boundary*.

Description

Under the No Action Alternative, permits would not be issued by USFWS, NMFS, or CDFW for incidental take of the proposed covered species through a regional HCP or NCCP. As a result, Permit Applicants and the private developers within their jurisdictions would remain subject to the take prohibition for federally listed species under ESA and state-listed species under CESA. The Permit Applicants and others that have ongoing activities or future actions in the Plan Area that may result in the incidental take of federally listed species would need to apply, on a project-by-project basis, for incidental take authorization from either USFWS or NMFS through ESA Section 7 (when a federal agency is involved) or Section 10 (for nonfederal actions). Similarly, Permit Applicants and others whose ongoing activities or future actions have the potential for incidental take of state-listed species in the Plan Area would apply for incidental take authorization under CESA through a Section 2081(b) permit. In addition, regional wetland permits would not be issued by USACE and, as a result, Permit Applicants and private developers within their jurisdictions would remain subject to the federal wetland regulations for any ongoing activities or future actions.

For this analysis, the No Action Alternative assumes the continuation of existing plans, policies, and operations. Based on this assumption, the No Action Alternative incorporates programs adopted during the early stages of development of this EIS/EIR, facilities that are permitted or under construction during the early stages of development of this EIS/EIR, and projects that are permitted or are assumed to be constructed by 2035, which encompasses the planning horizon for many of the general plans and the RTP in the Plan Area.

Under the No Action Alternative, because the Permit Applicants and private developers would generate environmental documentation and apply for permits on a project-by-project basis, there would be no comprehensive means to coordinate and standardize mitigation and compensation requirements of ESA, NCCPA, CEQA, NEPA, and the CWA within the Plan Area. This is anticipated to result in a more costly, less equitable, less efficient project review process that would reap fewer conservation benefits. Conservation planning and implementation would not happen at a regional scale and, therefore, would not establish an efficient and effective system of conservation lands to meet the needs of the species covered by the BRCP. In addition, it is not expected to integrate species conservation into the existing agricultural working landscape and would allow for compatible multiple uses within specific areas important for habitat conservation. Therefore, the No Action Alternative would not streamline the permitting process or provide local control of the endangered species process. It is not expected to provide species with the benefits of a comprehensive system of conservation lands that would be provided through a coordinated effort to minimize biological impacts throughout the Plan Area.

Typical Activities

Under the No Action Alternative, various types of activities would continue in the Plan Area consistent with current regulatory practices. While regulatory practices are likely to change over the next 50 years, assumptions about future changes to existing regulations (or new regulations) are too speculative. Therefore, it is assumed future regulations would be consistent with existing

regulations. The various types of activities assumed to occur under the No Action Alternative are described below.

- Urban development, including roadway projects, would continue to occur pursuant to the approved general plans of the Local Agencies and the regional plan(s) of BCAG. Urban development would occur within the Urban Permit Areas (UPAs), described in the BRCP as those mapped locations in the Plan Area within which the Local Agencies anticipate urban development will occur under their respective general plans. In addition to residential, commercial, and industrial development, this would also include the construction, maintenance, and use of urban infrastructure (e.g., roads, utilities), parks and recreational facilities, public services, and similar types of urban land uses.
- Public infrastructure projects within and over streams (e.g., replacement or new construction of bridges) would continue to be constructed under the No Action Alternative.
- Infrastructure projects outside of urban areas would continue to be constructed under the No Action Alternative. Such rural capital projects would include infrastructure such as rural transportation projects and new recreational facilities.
- Infrastructure projects outside urban areas would continue to be operated and maintained under the No Action Alternative. This would include activities such as utility line and facility operations and maintenance, vegetation and invasive species management, and road maintenance.

These typical activities would require consideration of environmental effects on a project-by-project basis. However, these projects would lack a comprehensive and streamlined mechanism for ESA and CESA compliance through the regional conservation plan. Therefore, in many cases, these activities would be subject to individual project review under ESA and CESA, which would restrict the activities based on the needs of federally and state-listed species. As previously discussed, these individual regulatory reviews and permit application processes would take considerably longer and would likely be more costly than the comprehensive and streamlined endangered species compliance process proposed in the BRCP.

Typical Species Considered

As described above for the No Action Alternative, compliance with ESA and CESA would continue to be addressed on a project-by-project basis. Projects and activities with a potential to take state-listed species would be required to comply with CESA by applying to CDFW for a 2081(b) ITP. Permit Applicants or private developers within their jurisdictions would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements as identified as part of the project-specific environmental review, as well as any applicable policies contained in the Local Agencies' general plans.

Conservation of species and their habitats through mitigation and compensation under the existing regulatory framework would likely result in a pattern of conservation that is geographically fragmented and managed in a piecemeal fashion. It would be unviable to conserve essential ecological processes under the No Action Alternative because there would not be a coordinated system of conservation areas, and the ability to provide linkages through project-by-project mitigation over time may be precluded by continued development. There would be no mechanism to comprehensively provide for species recovery. In addition, there would be no comprehensive adaptive management and monitoring program to ensure successful conservation at a landscape

scale. Furthermore, project-by-project permit applications would likely be limited to federally and state-listed species, reducing the number of species that would benefit from conservation actions. Of the 40 species proposed for coverage in the BRCP, 20 are either state- or federally listed as threatened, endangered, or rare. Therefore, the project-by-project mitigation approach under the No Action Alternative would greatly reduce conservation benefits for the remaining 20 nonlisted species.

Typical Species Mitigation

As a result of federal and state consultation for impacts on listed species and project-by-project CEQA and NEPA review for impacts on biological resources, various types of mitigation measures are expected to be required under the No Action Alternative. These types of mitigation measures are listed below.

- Avoidance and minimization measures (AMMs) incorporating generally accepted species-specific protocols and/or project-specific measures as negotiated with various wildlife agencies. This could include preservation and management of onsite habitat. Other avoidance and minimization requirements could include preconstruction surveys, construction timing restrictions, setback requirements, use restrictions, or other similar measures.
- Restoration and/or enhancement of onsite habitat.
- Compensatory mitigation in offsite areas. Such mitigation could include purchasing credits at a private conservation bank; purchasing and restoring large areas of habitat and using those areas to mitigate various project impacts in much the same way that a mitigation bank functions; and purchasing and restoring habitat to mitigate individual project impacts.

Mitigation associated with individual project compliance under the No Project Alternative is expected to result in less conservation and to benefit fewer species than would the regional conservation approach under the BRCP.

2.3.2 Alternative 2—Proposed Action

This alternative consists of issuance of ITPs by USFWS, NMFS, and CDFW; approval and execution of the Implementing Agreement (IA) for the BRCP; and implementation of the BRCP by the Permit Applicants. The BRCP is a regional, comprehensive plan that establishes a framework for complying with state and federal endangered species regulations for the Permit Applicants while accommodating compatible future land use and development under the general plan updates of the Local Agencies and the RTP. The BRCP is intended to establish and implement a program to conserve ecologically important resources in the Plan Area. The Permit Applicants preparing this plan are listed below.

- Butte County
- City of Oroville
- City of Chico
- City of Biggs
- City of Gridley
- Butte County Association of Governments (BCAG)

- California Department of Transportation (Caltrans)
- Western Canal Water Districts
- Biggs–West Gridley Water District
- Butte Water District
- Richvale Irrigation District

The BRCP identifies a range of covered activities (discussed below), which are specific projects and activities within the jurisdictions listed above in the Plan Area that may result in the take of listed species or species that may become listed during the 50-year permit term (covered species). These activities and projects are considered when assessing the total amount of take of covered species that would be expected in the Plan Area and in developing the overall BRCP conservation strategy. A summary of the proposed action is presented below, describing the Plan Area, the covered activities, the covered species, the proposed conservation strategy, and the aquatic resources plan. For more details on all of these topics, see the BRCP.

Plan Area

The Permit Area for the proposed action is the Plan Area, as described in Chapter 1, Section 1.1.2, *Plan Area Boundary*. It encompasses 564,219 acres in western Butte County (Figure 1-1). The Plan Area encompasses the western lowlands and foothills of Butte County and is bounded on the west by Tehama, Glenn, and Colusa Counties; on the south by Sutter and Yuba Counties; and on the north by Tehama County. On the east, the Plan Area is defined by the upper extent of landscape dominated by oak woodland natural communities. The elevation below which land cover types dominated by oak trees comprise more than one-half of the land cover present (referred to hereafter as the oak zone), plus a small portion of the City of Chico that extends above the oak zone, marks the oak woodland boundary.

Although the Plan Area includes portions of the Sacramento River within Butte County, the BRCP does not address activities conducted by Permit Applicants and non-Permit Applicants that could affect listed fish species in the Sacramento River. The Sacramento River floodplain in Butte County is included in the BRCP for implementing conservation measures for covered species and natural communities. There are 11 watersheds in the Plan Area: Red Bluff, Butte Basin, Upper Dry Creek, Below Oroville Reservoir, Sutter Bypass, Lower Feather River, South Honcut Creek, Upper Big Chico Creek, Upper Little Chico Creek, Upper Butte Creek, and Bloomer Hill.

There are four major geographic categories in the Plan Area: Urban Permit Areas (UPAs); areas outside UPAs; areas within irrigation and water districts; and areas within conservation lands. UPAs are those mapped locations in the Plan Area within which the Cities and County anticipate concentrated urban and infrastructure development under their respective general plan updates. There are 15 UPAs within the Plan Area (shown in Figure 2-1). The BRCP simplifies the extensive land use categories of each local agency into six major categories: agricultural, commercial, industrial, public, residential, and resource management (Figure 2-2). The Plan Area is dominated by agricultural land use practices with irrigated agriculture accounting for 250,587 acres, or 44%, of the total Plan Area. Rice and orchards (mostly almonds and walnuts) dominate the irrigated agricultural land use. There are also six Conservation Acquisition Areas (CAZs) within the Plan Area (Figure 2-1). The CAZs include lands that can be acquired to support the conservation strategy (detailed in the Section 2.3.2, *Alternative 2—Proposed Action*, of this chapter).

Covered Activities

Covered activities include those existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; operation of water delivery systems (e.g., Western Canal Water District [WCWD] canals and similar delivery systems); habitat restoration, enhancement, and management actions; and adaptive management and monitoring activities. The covered activities include the construction and maintenance of facilities and infrastructure, both public and private, which are consistent with local general plans, transportation plans, and local, state, and federal laws. The covered activities are divided into activities that result in permanent development and activities involving maintenance measures that take place periodically over the duration of the permit term. The types of covered activities within the Plan Area for which ITP coverage is requested from USFWS, NMFS, and CDFW in compliance with ESA and the NCCPA are summarized below by the four major geographic categories (i.e., within the UPAs, outside the UPAs, areas within irrigation and water districts; and areas within conservation lands).

Covered Activities within UPAs

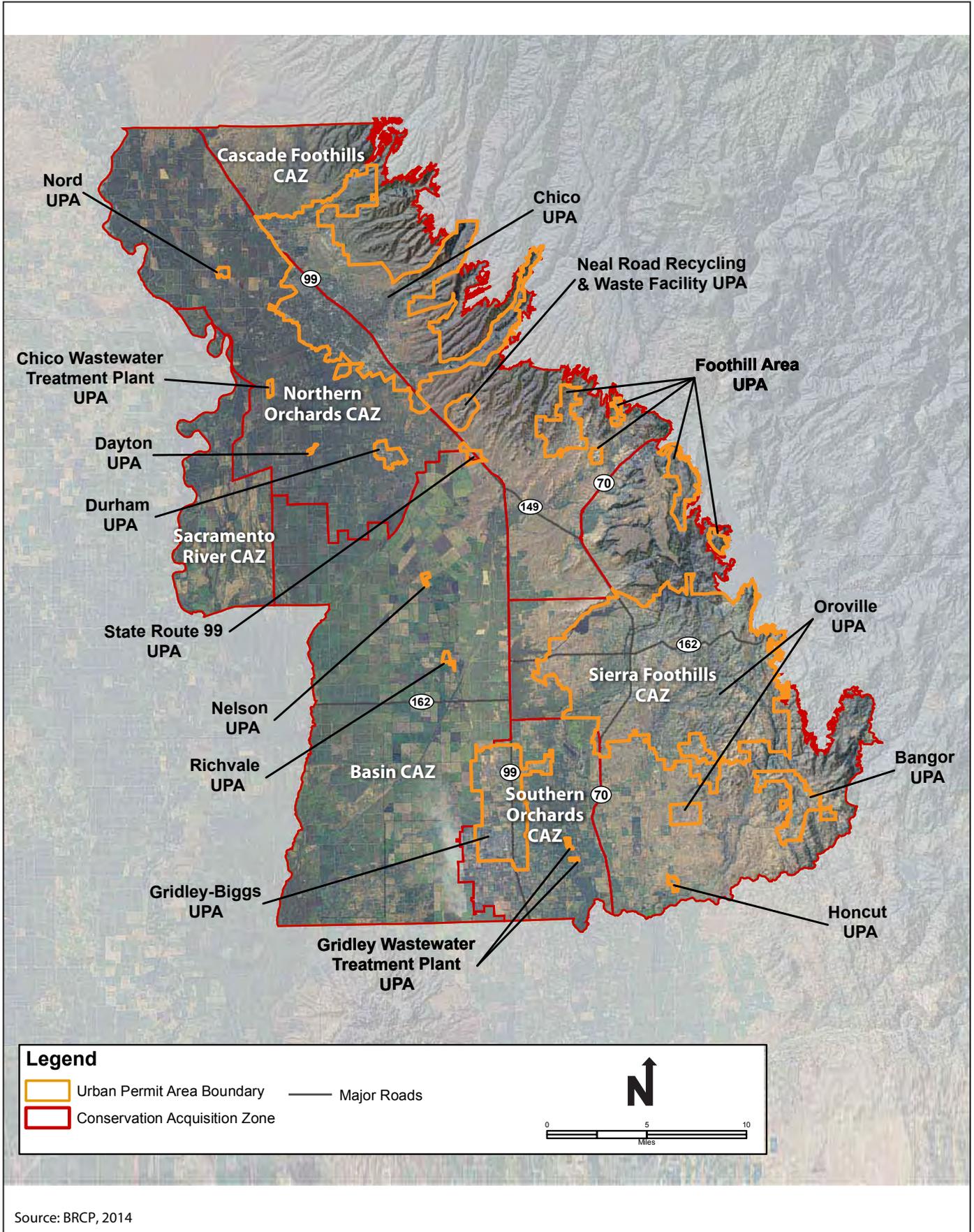
Covered activities implemented in the 15 Plan Area UPAs include all new public and private sector construction, improvements to existing facilities, and maintenance of existing and new facilities consistent with the Local Agencies' general plans and local, state, and federal laws. The intent of the BRCP is to cover all land use designations from all Local Agencies' general plans that could affect covered species. Therefore, the UPAs encompass all such land use designations from the Local Agencies' general plans.¹ Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

Permanent Development Projects within UPAs

Permanent development projects within the UPAs that would be covered activities under the BRCP include new construction and improvements, expansions to existing facilities, and other urban-related projects. The list below summarizes the potential permanent development projects within the 15 UPAs. Additional details regarding descriptions of these covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

- **Residential, Commercial, Public, or Industrial Facilities.** Covered new development projects would include any new construction, expansion, and repair/restoration of residential, commercial, public, or industrial facilities. This category also includes the construction of new appurtenant structures such as roads, sidewalks, utilities, and sewer lines. The projects in this category are primarily those undertaken by the Local Agencies.
- **Recreation Facilities.** Covered recreation facility development projects include construction of trails and associated pedestrian/bike bridges, interpretive trails, new parks, playgrounds, sports complexes, golf courses, ball fields, bike paths, restrooms, racetracks, campgrounds, equestrian facilities, whitewater parks, and recreational facilities associated with education and interpretation. This category also includes appurtenant infrastructure such as utilities and pipelines (sewer/water) for education and interpretation recreational infrastructure. Recreation facility development projects that may require actions in stream channels include

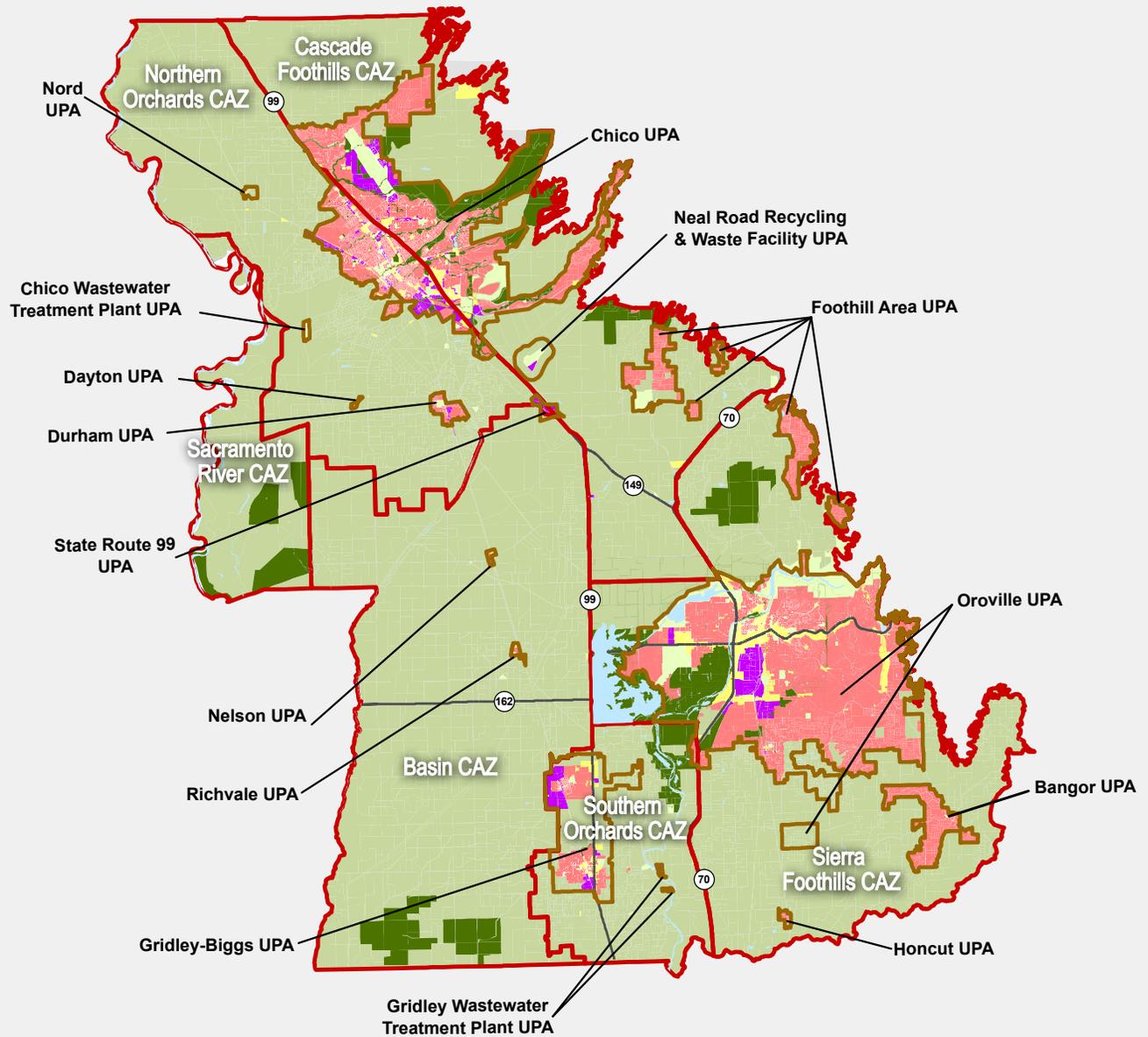
¹ Except for several isolated parcels designated by the County as *Agricultural Services*, which occur outside UPAs (see the *Covered Activities outside UPAs* section below).



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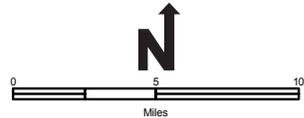
Figure 2-1
BRCP Urban Permit Areas (UPA) and
Conservation Acquisition Zones (CAZ)



Legend

 Residential	 Agriculture	 Water
 Commercial	 Resource Management	 Conservation Acquisition Zone
 Industrial	 Public	 Urban Permit Area Boundary

Note: This figure reflects the maximum development identified in the combined city and County General Plans.



SOURCE: Butte County, 2010. Butte County General Plan-Preferred Alternative 2030. City of Chico, 2011. City of Chico General Plan Update-Preferred Land Use Alternative 2030. City of Oroville, 2009. City of Oroville General Plan Update-Preferred Land Use Alternative 2030. City of Biggs, 2009. City of Biggs General Plan Update-Preferred Land Use Alternative 2030. City of Gridley, 2009. City of Gridley General Plan Update-Preferred Land Use Alternative 2030.

Source: BRCP, 2014



Figure 2-2
Generalized BRCP Land Use Designation Categories
Derived from County and City General Plans

the construction of new or replacement pedestrian bridges. The projects in this category primarily include those undertaken by Local Agencies.

- **Transportation Facilities.** Covered transportation facility development projects include construction of new roadways and bridges and associated infrastructure; road and bridge widening and capacity improvements; freeway interchange improvements; roadway safety improvements; bike lane and bike path projects; park-and-ride lots; transit facilities (e.g., transit stops, shelters, signs, transit centers, transit maintenance yards, transit vehicle refueling stations); rail and light rail facilities; and airport expansions. Construction of these facilities could include activities such as grading, excavation, and placement of fill material. Covered transportation projects that require implementing actions in waterways include constructing new or replacing existing bridges and their associated infrastructure. Projects in this category include those undertaken by Caltrans, BCAG, and the Local Agencies.
- **Pipeline Facilities.** Covered pipeline facility development projects include all activities associated with accessing, surveying, excavating, trenching, and constructing underground pipeline infrastructure; backfilling and compaction and any windrowing or storage of overburden material; and restoration of the construction site. Examples of new pipeline construction covered activities include underground mainline water and sewer lines. At-stream crossings, new pipelines are expected to be bored under or placed above stream channels and thus are not expected to require activities within stream channels. Projects in this category are primarily those undertaken primarily by the Local Agencies, BCAG, and water districts.
- **Utility Service Facilities.** Covered utility services facility projects include activities associated with construction and installation of electrical utilities (e.g., above- and belowground electrical transmission lines), telecommunication lines, and natural gas transmission lines (e.g., underground mainlines). New utility lines are expected to be bored under or placed above stream channels and thus are not expected to require activities within stream channels. Projects in this category primarily include those undertaken by the Local Agencies.
- **Waste Management Facilities.** Covered waste management facility development projects include construction and expansion of waste management facilities, including landfills, recycling centers, and recycling facilities. These covered activities are associated with development of the Neal Road Recycling and Waste Facility UPA, including a planned landfill expansion project that would expand the Neal Road Recycling and Waste Facility in the town of Paradise. The projects in this category primarily include those undertaken by the Local Agencies.
- **Wastewater Management Facilities.** Covered wastewater management facility development projects include construction or expansion of wastewater treatment plants (WWTPs), temporary WWTPs, pretreatment wastewater facilities, water recycling facilities, and pump stations. They also include construction and installation of force mains, effluent lines, sewer lines, discharge lines, reclamation lines, and mainlines, and all appurtenant infrastructure. These covered activities are associated with but are not limited to the Chico, Gridley, Biggs, and Oroville wastewater management facilities. With the exception of culverts placed in small intermittent drainages along roads within the project footprint of new facilities, activities associated with the construction of waste and wastewater management facility projects are not expected to include development of in-water structures. Projects in this category primarily include those undertaken by the Local Agencies or water and irrigation districts.

- **Flood Control and Stormwater Management Facilities.** Covered flood control and stormwater management facility development projects include the construction of new channels, levees/dikes, flood walls, retention/detention basins, stormwater channel lining, and water quality control facilities for mitigating stormwater runoff (e.g., sediment barriers, filters, berms) to provide flood control and stormwater management. Covered activities associated with the construction of flood control and stormwater management facility projects are not expected to include development of in-water structures in natural channels. Projects in this category primarily include those undertaken by the Local Agencies.

Maintenance Activities within UPAs

Maintenance activities involving existing and new facilities in the 15 UPAs are covered activities under the BRCP. Covered maintenance activities are intended to be as inclusive as possible to accommodate all ground-disturbing maintenance activities that are likely to occur within the UPAs over the term of the BRCP. The list below summarizes the potential recurring maintenance activities at certain facilities within the 15 UPAs. Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

- **Recreation Facilities.** Covered activities include maintenance of the recreational facilities described in the *Permanent Development Projects within UPAs* section above. The maintenance (e.g., silt, gravel, and debris removal) and operation of Sycamore Pool in Big Chico Creek and maintenance of the associated bladder dam at Bidwell Park are also covered activities. The bladder dam is raised annually from Memorial Day through Labor Day and lowered during winter to allow gravel to clear the pool and to minimize impacts on migrating fish.
- **Transportation Facilities.** Covered activities include rehabilitation and minor improvement (i.e., within the footprint of existing roadways and facilities) of transportation facilities (e.g., bridges, highways). Covered activities include: patching, striping, guardrail and shoulder repair; cleaning of curbs, gutters, ditches, and sidewalks; grading and mowing of existing roadways and shoulders; bridge and culvert repair; and erosion and dust control. Recurring maintenance of bridges and associated drainage structures includes in-stream operation of equipment to repair and prevent scour of the streambed beneath and adjacent to bridge structures; debris and woody debris removal from bridge piers and pilings; vegetation management beneath and adjacent to bridge structures; and erosion/sediment control for bridges and drainage infrastructure beneath and adjacent to bridge structures.
- **Pipeline Facilities.** Covered activities include all maintenance activities associated with the monitoring, accessing, surveying, excavation/trenching, and installation or replacement of underground pipeline infrastructure. These covered activities are not expected to include in-water maintenance activities.
- **Utility Service Facilities.** Covered activities include the maintenance of utilities described in *Permanent Development Projects within UPAs* section above. Maintenance activities include surveying, excavation and trenching, replacement of above- and below ground infrastructure, storage of overburden material, and restoration of disturbed ground at maintenance sites. These covered activities are not expected to include in-water maintenance activities.

- **Waste and Wastewater Facilities.** Covered activities include maintenance of landfills and recycling stations; existing, temporary, or new WWTPs and water recycling facilities; force mains and effluent, sewer, discharge, and reclamation lines; pump stations; and sewerage ponds. These covered activities are associated with, but not limited to, all such activities at the Chico, Gridley, Biggs, and Oroville wastewater management facilities and the Neal Road Recycling and Waste Facility. These covered activities are not expected to include in-water maintenance activities.
- **Flood Control and Stormwater Management Facilities.** Covered activities include maintenance activities on channels, levees, dikes, and retention/detention basins; removal of vegetation and debris from flood control and stormwater management facilities; repair and installation of replacement of these facilities (e.g., culverts, stormwater conveyance facilities, local detention/retention facilities); maintenance of water retention facilities; floodplain enhancement; ditch cleaning; culvert replacements; and vegetation control. Recurring maintenance to remove vegetation and debris from streambeds, channels, ponds, flood control facilities, retention basins, and detention basins includes: the in-water operation of equipment to perform the maintenance of levees, ditches, canals, drains, and retention or sewerage ponds in different County Service Areas within the UPAs. Vegetation removal and maintenance of stormwater conveyance canals occurs annually and requires the in-water operation of equipment to mechanically remove emergent and aquatic vegetation and to trim trees in channels and canals that transport stormwater runoff from urban areas throughout portions of Chico and other Local Agency jurisdictions.
- **Vegetation Management.** Covered activities include vegetation clearing for fire control/fuel breaks and the trimming and removal of trees, if necessary, to maintain infrastructure and other facilities that are not associated with transportation facility maintenance and flood control and stormwater management maintenance.

Covered Activities outside UPAs

Covered activities implemented within the Plan Area but outside the UPAs include development projects and maintenance activities, primarily of linear infrastructure projects that cross undeveloped lands between urban areas. As described in this section, this category includes covered activities such as utilities, transportation construction and maintenance projects, and agricultural services; it does not include areas that would become part of the BRCP conservation land system. Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

Permanent Development Projects outside UPAs

Permanent development projects outside the UPAs that would be covered activities under the BRCP would include new construction and improvements, expansions to existing facilities, and other urban-related projects. The list below summarizes the potential development projects at certain facilities outside the 15 UPAs. Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

- **Wastewater Management Facilities.** Covered projects include force main and effluent line construction, discharge and reclamation line installation, and trunk sewer line construction. These activities could include up to 5 miles of new trunk sewer line associated with the Chico WWTP and up to 3 miles of new mainline from Gridley to the Gridley WWTP. The new trunk sewer line and new mainline are assumed to include a 100-foot-wide right-of-way (ROW). These projects are not expected to include development of in-water structures as facilities are expected to be bored under or placed above stream channels and thus are not expected to require activities within stream channels.
- **Transportation Facilities.** Covered projects outside the UPAs include construction of new roads and bridges; widening and capacity improvements on existing roads and bridges; construction of new roadside parking and viewing facilities, transit facilities, and rail facilities; and safety improvements on existing transportation facilities. Such transportation projects for which the specific location and type of project are currently known are described in Table 2-1.
- **Agricultural Service Projects.** Covered agricultural services² projects outside the UPAs include construction of agriculture-related service facilities that are complementary to existing agricultural uses, including industrial uses such as processing facilities, commercial uses such as agricultural equipment sales, and technologies that use agricultural byproducts. The construction of alternative energy facilities (e.g., solar panel arrays, biofuel facilities, wind turbine towers) is also included in the agricultural services category as a covered activity; however, the operation of wind turbines/wind energy facilities is not a covered activity. Figure 2-3 shows locations of individual areas within the Plan Area designated by the Butte County General Plan as agricultural services and that are covered activities under the BRCP. The development footprint for all agricultural services covered activities is assumed to be the entire parcel.

² *Agricultural Services* is a land use designation identified in the Butte County General Plan that occurs only on single, isolated parcels that are primarily surrounded by agricultural land. Because this land use designation was only applied to individual isolated parcels, they were deemed too small and isolated to be designated as UPAs. Alternatively, they are being included as a covered activity outside the UPAs and represent the only land development activity that is covered under the BRCP outside the UPAs.

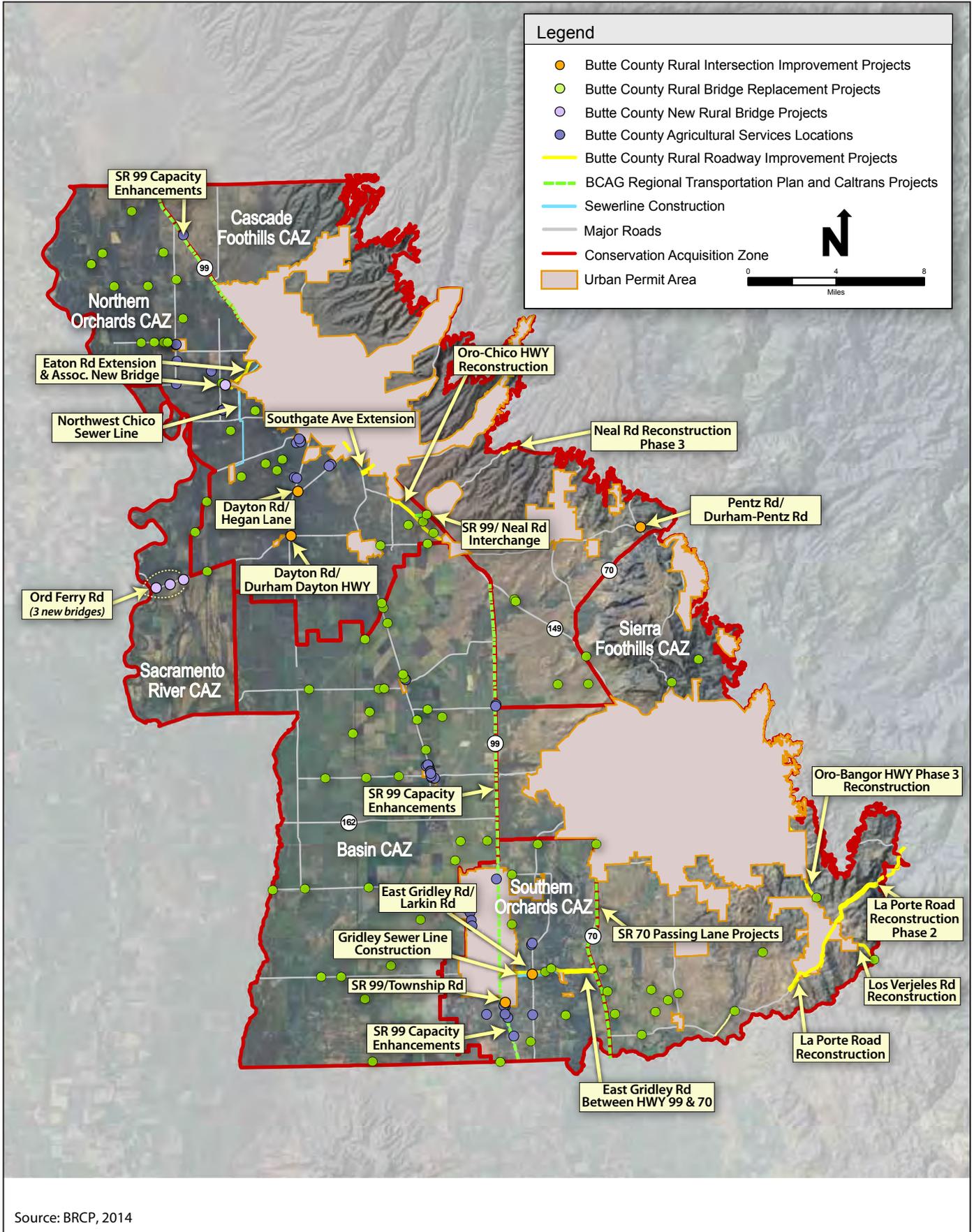


Figure 2-3
Transportation and Sewerline Projects and
Agricultural Services Areas Outside of Urban Permit Areas

Table 2-1. Covered Transportation Projects outside UPAs

Activity	Location/Road	Description
BCAG and Caltrans		
Improve Corridor Passing Lanes	SR 70	Covered activities would include corridor passing lane projects involving four segments that would produce a 5-lane facility (four lanes with a center turn lane). Width of new road ROW is assumed to be 150 feet requiring four 20-acre borrow sites within 1 mile of the project site.
Intersection Improvements	SR 99	Covered activities would include intersection improvements and traffic capacity enhancements.
Butte County		
Rural Bridge Replacement	Entire BRCP Plan Area	Covered activities include replacement of up to 87 bridges (Figure 2-3). It is likely that only a portion of the 87 bridges would be replaced during the 50-year term of the BRCP because of a current lack of available funding for bridge replacement projects. If additional bridge replacement projects that are not included in Figure 2-3 are identified during BRCP implementation, they would also be covered activities, as long as the 87-bridge limit is not exceeded and the bridge replacement projects are similar in size and scope.
New Bridge Construction	Ord Ferry Road and Mud Creek	Covered activities include construction of new bridges along Ord Ferry Road at “the dips” and a new bridge across Mud Creek. Each of the new bridges is assumed to require a 2-acre construction footprint, including a 1-acre staging area. The footprint area, within which equipment would be operated in stream channels for replacement of bridges across water courses, is assumed to encompass 0.26 acre of channel bed below the centerline of each bridge. Each new bridge is assumed to remove 100 feet of channel bank habitat along each side of the channel associated with placement of bridge revetment material.
Rural Intersection Improvements	SR 99 at Township Road Pentz Road at Durham-Pentz Road Dayton Road at Durham Dayton Hwy Dayton Road at Hegan Lane East Gridley Road at Larkin Road	Covered activities include installation of traffic signals and widening of the roadway to accommodate the creation and/or extension of intersection turn lanes and through lanes as well as bicycle and pedestrian facilities (e.g., bike lanes, crosswalks, islands). Each of the roadway intersection improvement projects is assumed to require a 3-acre construction footprint, including a staging area.
Rural Roadway Improvements	Southgate Avenue La Porte Road East Gridley Road Oroville-Bangor Highway Oroville-Chico Highway Neal Road Los Verjeles Road Eaton Road	Covered activities include projects to extend and widen existing roads, improve their structural integrity, add bike lanes, and other improvements. The width of project ROWs, within which all construction activity would occur, is assumed to average 150 feet (the approximate length of each road improvement is provided in each project description). Project equipment staging areas would be located within the 150-foot ROW work areas.

Maintenance Activities outside UPAs

Maintenance activities outside the 15 UPAs involving existing and new facilities are covered activities. These activities include the maintenance of wastewater management facilities and transportation facilities, as well as flood control, stormwater, and vegetation management. The list below summarizes the potential maintenance projects at certain facilities outside the 15 UPAs. Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

- **Wastewater Management Facilities.** Covered activities include the maintenance facilities described in the *Permanent Development Projects outside the UPAs* section above. Activities include accessing, surveying, excavating, trenching, removing or storing of overburden materials, and replacement of force mains, effluent lines, trunk/sewer lines, discharge lines, reclamation lines, and mainlines and all related appurtenant infrastructure. Approximately 4 miles of existing sewer force mainline east of Gridley and 3 additional miles of a new mainline that would be built on a new alignment associated with the Gridley WWTP would be maintained (Figure 2-3). All the existing wastewater treatment lines associated with the Chico WWTP outside the UPAs (up to 7 miles in length), and an additional 5 miles of new line that would be constructed over the term of the BRCP on a new alignment would be maintained (Figure 2-3). Maintenance of these wastewater treatment lines is assumed to occur within a 100-foot ROW extending 50 feet on each side of the centerlines
- **Transportation Facilities.** Covered activities include rehabilitation and minor improvement (i.e., within the footprint of existing roadways and facilities) of existing roadways, bike paths, roadside parking and viewing facilities, transit facilities, rail and light rail facilities, airports, charging stations for electric vehicles, and park-and-ride lots; and maintenance of bridge structures and associated drainage. These covered activities include the in-stream operation of equipment to repair bridges and remove debris, manage vegetation, and maintain erosion/sediment control for bridges and drainage infrastructure beneath and adjacent to existing bridge structures.
- **Flood Control and Stormwater Management.** Covered activities outside the UPAs are limited to vegetation control on the top and outer side of levees (i.e., they do not include in-stream maintenance or repair of levees) on the Sycamore–Mud Creek system. All other flood control levee and canal maintenance activities within the Plan Area outside UPAs are conducted by DWR. DWR is not a Permit Applicant and its activities are not covered under the BRCP.
- **Vegetation Management.** This is the same as described above for maintenance activities within the UPAs.

Covered Activities within Water and Irrigation Districts

This section describes BRCP covered activities related to development and maintenance within the WCWD, Biggs–West Gridley Water District, Butte Water District, and Richvale Irrigation District. All these activities are covered under the BRCP for WCWD, Biggs–West Gridley Water District, Butte Water District, and Richvale Irrigation District. Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

- **Permanent rerouting of up to 12 miles of existing canals (averaging 55 feet in width).** These facilities are operated by the water and irrigation districts over the term of the BRCP to better meet water delivery objectives of the water and irrigation districts.

- **Replacement of water delivery structures, such as underground pipe and concrete supports.** These projects are typically undertaken in already disturbed areas and typically entail a disturbance area, including the construction zone, of approximately 20 feet by 30 feet per project. Approximately 15 of these smaller projects may be completed per year in each district (up to 60 total annually for four districts); they are typically carried out when the water conveyance structures are dewatered (September–December; late January–early April).
- **Replacement of larger structures (e.g., large weirs).** These projects would typically entail a disturbance area, including the construction zone, of approximately 200 feet by 200 feet, all within already disturbed areas. Typically one large project may be completed every 4–5 years per district (i.e., four total projects every 4–5 years for four districts).
- **Mowing and trimming of vegetation along district service roads.** These activities would be conducted to maintain accessibility. Machinery would be used to maintain and repair the shape, slope, and integrity of canals and canal beds.
- **Maintenance activities to remove aquatic vegetation from canals.** These activities would be conducted to maintain the canals. A portion of the canals is maintained annually, while other portions are maintained less frequently. Habitat does not typically reestablish between maintenance events. Typically, approximately 5 miles of WCWD canals are repaired and resloped each year. Every 5 years, approximately 25 miles of WCWD canals are maintained, and every 10 years, approximately 49 miles are maintained. Within the permit term, maintenance activities would have been conducted at least once for all approximately 49 miles of WCWD canals and ditches likely to be maintained.

Covered Activities within Conservation Lands

Activities that occur within the BRCP conservation lands would be covered by the BRCP. These activities would be associated with implementing the conservation actions described in Chapter 5, *Conservation Strategy*, of the BRCP and in Section 2.3.2, *Alternative 2—Proposed Action*, of this chapter. These activities would include habitat and species surveys and monitoring, directed studies, public education and access control facilities, as well as the following activities. Additional details regarding descriptions of the covered activities are in Chapter 2 and Tables 4-1 and 4-2 of the BRCP.

- **Habitat Management and Enhancement.** These are actions necessary to maintain and enhance the functions of BRCP conservation lands as habitat for covered and other native species. Examples of habitat management and enhancement actions include vegetation management and control of nonnative species using a variety of tools, such as livestock grazing, controlled fire, manual labor, water management, and mechanical vegetation removal.
- **Habitat Restoration.** These are actions necessary to restore natural communities and covered species habitat. Examples of habitat restoration actions include ground surface grading and recontouring, vegetation removal, installation of plantings, installation and operation of irrigation systems, and other activities necessary to establish restored physical and biological conditions that support native species habitats.
- **General Maintenance.** These are actions necessary to maintain access roads, fences, and fire/fuel breaks; travel through the preserve by foot, all-terrain vehicle, truck, or off-road vehicle; and construction and maintenance of facilities needed to manage conservation lands, including reserve field offices, maintenance sheds, carports, restrooms, service roads, bridges,

fences, gates, wells, stock tanks, and stock ponds. All such structures would be constructed to minimize impacts on covered species and vegetation communities.

- **Avoidance and Minimization Measures.** These are actions to avoid and minimize adverse effects of conservation activities on natural communities and covered species (e.g., preconstruction surveys, capturing, and translocating covered species from construction sites).
- **Species Population Enhancement.** These are actions to benefit covered species' populations (e.g., seeding of native species; removal of riprap; replenishment of spawning gravels; and, targeted control of introduced predators such as feral cats and dogs, pigs, nonnative fish, and bullfrogs).

Some of these activities could require in-water operation of equipment or other activities that could result in the disturbance of aquatic environments. Examples of in-water activities include removal of vegetation from water conveyance ditches and ponds to maintain capacity, resculpting of channel banks to restore and enhance aquatic and riparian habitat conditions, removal of riprap, placement of spawning gravels and modification diversions, in-stream monitoring and research activities, maintenance of stream crossings, control of nonnative aquatic species, and capture and translocation of covered amphibian species. In addition, ongoing land uses and activities (e.g., agricultural and grazing practices, infrastructure maintenance activities, use of public roads) as approved in BRCP Conservation Lands Management Plans and BRCP conservation easements are covered activities. These allowable uses are described in Section 8.8 of the BRCP.

Covered Species

Covered species are species that would be authorized for take and conserved and protected by the BRCP. The BRCP proposes 38 special-status species for coverage under the ITPs (Table 2-2).

Table 2-2. Species Proposed for Coverage under the BRCP

Common Name	Scientific Name	Status ^a (Federal/State/ CNPS)
Birds		
1 Tricolored blackbird	<i>Agelaius tricolor</i>	-/SSC/-
2 Yellow-breasted chat	<i>Icteria virens</i>	-/SSC/-
3 Bank swallow	<i>Riparia riparia</i>	-/T/-
4 Western burrowing owl	<i>Athene cunicularia hypugea</i>	-/SSC/-
5 Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	C/E/-
6 Greater sandhill crane	<i>Grus canadensis tabida</i>	-/T,FP/-
7 California black rail	<i>Laterallus jamaicensis coturniculus</i>	-/T,FP/-
8 American peregrine falcon	<i>Falco peregrinus anatum</i>	D/D,FP/-
9 Swainson's hawk	<i>Buteo swainsoni</i>	-/T/-
10 White-tailed kite	<i>Elanus leucurus</i>	-/FP/-
11 Bald eagle	<i>Haliaeetus leucocephalus</i>	D/E,FP/-
Reptiles		
12 Giant garter snake	<i>Thamnophis gigas</i>	T/T/-
13 Blainville's horned lizard	<i>Phrynosoma blainvillii^b</i>	-/SSC/-
14 Western pond turtle	<i>Actinemys marmorata</i>	-/SSC/-

Common Name	Scientific Name	Status ^a (Federal/State/ CNPS)
Amphibians		
15 Foothill yellow-legged frog	<i>Rana boylei</i>	-/SSC/-
16 Western spadefoot	<i>Spea hammondi</i>	-/SSC/-
Fish		
17 Central Valley steelhead	<i>Oncorhynchus mykiss</i>	T/-/-
18 Central Valley spring-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	T/T/-
19 Central Valley fall-/late fall-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	-/SSC/-
20 Green sturgeon	<i>Acipenser medirostris</i>	T/SSC/-
Invertebrates		
21 Valley elderberry longhorn beetle ^c	<i>Desmocerus californicus dimorphus</i>	T/-/-
22 Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E/-/-
23 Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E/-/-
24 Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T/-/-
Plants		
25 Ferris' milkvetch	<i>Astragalus tener</i> var. <i>ferrisiae</i>	-/-/1B
26 Lesser saltscale	<i>Atriplex minuscula</i>	-/-/1B
27 Hoover's spurge	<i>Chamaesyce hooveri</i>	T/-/1B
28 Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	-/-/1B
29 Red Bluff dwarf rush	<i>Juncus leiospermus</i> var. <i>leiospermus</i>	-/-/1B
30 Butte County meadowfoam	<i>Limnanthes floccosa</i> ssp. <i>californica</i>	E/E/1B
31 Veiny Monardella	<i>Monardella douglasii</i> ssp. <i>venosa</i>	-/-/1B
32 Hairy Orcutt grass	<i>Orcuttia pilosa</i>	E/E/1B
33 Slender Orcutt grass	<i>Orcuttia tenuis</i>	T/E/1B
34 Ahart's paronychia	<i>Paronychia ahartii</i>	-/-/1B
35 California beaked-rush	<i>Rhynchospora californica</i>	-/-/1B
36 Butte County checkerbloom	<i>Sidalcea robusta</i>	-/-/1B
37 Butte County golden clover	<i>Trifolium jokerstii</i>	-/-/1B
38 Greene's tuctoria	<i>Tuctoria greenei</i>	E/R/1B

^a Status:

Federal

- E = Listed as endangered under ESA.
- T = Listed as threatened under ESA.
- C = Candidate for listing under ESA.
- D = Delisted under ESA.

State

- E = Listed as endangered under CESA.
- T = Listed as threatened under CESA.
- D = Delisted under CESA.
- R = Listed as rare under the California Native Plant Protection Act.
- SSC = California species of special concern.
- FP = Fully protected under the California Fish and Game Code.

California Native Plant Society (CNPS) California Rare Plant Rank

- 1B = rare or endangered in California and elsewhere.

^b Formerly California horned lizard (*Phrynosoma coronatum frontale*).

^c Valley elderberry longhorn beetle was proposed for de-listing by USFWS in October 2006. If it is removed from federal protection status, it may no longer meet the criteria for coverage under the BRCP.

Conservation Strategy

The BRCP conservation strategy and its components are part of the proposed action. The conservation strategy is designed to meet the regulatory requirements of ESA and the NCCPA and to streamline compliance with CEQA, NEPA, and other applicable environmental regulations. To meet the NCCPA permit standards, the conservation strategy provides for the conservation of covered species by protecting, enhancing, restoring, and managing natural communities and species habitat through a suite of conservation measures. The conservation strategy, detailed in Chapter 5 of the BRCP, consists of biological goals and objectives, conservation measures, a monitoring program, and an adaptive management plan.

The conservation strategy is designed to achieve the objectives listed below, pursuant to the NCCPA (Section 2820).

- Conserve, restore, and provide for the management of representative natural and semi-natural³ landscapes.
- Establish reserves that provide for the conservation of covered species within the BRCP geographic area and linkages to adjacent habitat outside the Plan Area.
- Protect and maintain habitat areas that are large enough to support sustainable populations of covered species.
- Incorporate in the reserves (BRCP conservation lands) a range of environmental gradients and high habitat diversity to provide for shifting species distributions in response to changing circumstances.
- Sustain the effective movement and interchange of organisms between habitat areas in a manner that maintains the ecological integrity of the reserve system (BRCP conservation lands).

Conservation Measures

The conservation measures are designed to protect, enhance, and restore natural communities and the covered species habitats they support; improve the ecological function of natural communities; avoid, minimize, and compensate for impacts on covered species associated with implementation of covered activities; and provide for the conservation of covered species in the Plan Area. The conservation measures would collectively achieve the BRCP biological goals and objectives. Because of the large scale and long timeframe over which the BRCP would be implemented, the conservation measures are also designed to be flexible to allow for adaptive management with increasing knowledge over time. The conservation measures are divided into landscape-level measures, natural community-level measures, and species-specific measures. Table 2-3 and Table 2-4 summarize the conservation measures, the magnitude of their application (typically in acres), their general locations, and the physical actions expected under each conservation measure. For more detail regarding the physical actions expected under the conservation measures see Tables 4-1 and 4-2 of the BRCP. Table 2-5 summarizes the required acreage of protection of existing natural communities within each CAZ to achieve the objectives of Conservation Measure (CM) 1. The information summarized in Table 2-5 and information discussing species recovery plans is detailed in Sections 5.3 and 5.4 of the BRCP.

³ A *semi-natural landscape* is defined as one that is disturbed by human activity but still provides important habitat for a variety of native species.

Table 2-3. BRCP Conservation Measures

CM Number: Title	Description	Extent	General Location
Landscape-Level Conservation Measures (CMs)			
CM1: Acquire Lands	<p>This CM provides the mechanism and guidance for the acquisition of lands and the establishment of the BRCP conservation lands system to meet the natural community and covered species habitat protection biological objectives. The conservation lands system will be assembled over the term of the BRCP permit in accordance with the implementation schedule described in the BRCP Section 8.1 to accomplish the following.</p> <ul style="list-style-type: none"> • Protect and enhance areas of existing natural communities and covered species habitat. • Protect and maintain occurrences of covered plant species with limited distributions and habitat areas occupied by specified covered wildlife species (see BRCP Section 5.4.3). • Provide sites for restoring natural communities and covered species habitat. • Provide habitat connectivity among the various land units within the conservation land system. <p>This CM describes the land acquisition procedures, including pre-acquisition survey requirements, land acquisition methods, and land selection criteria that will be applied to ensure that the ecological attributes of the acquired lands will serve to achieve the biological goals and objectives.</p>	• (see Table 2-5)	• Entire Plan Area
CM2: Develop an Invasive Species Control Program	<p>This CM establishes methods and procedures to control invasive animal and plant species that could substantially degrade the functions of protected natural communities as habitat for covered and other native species on BRCP conservation lands. It would require the development of a plan that would include the following.</p> <ul style="list-style-type: none"> • Protocols for periodically surveying for and assessing the abundance of nonnative predators and competitors on BRCP lands. • Protocols for periodically surveying for and assessing the occurrence and abundance of invasive nonnative plants on BRCP lands. • A brown-headed cowbird monitoring and control program. • Methods for assessing degree of biological effect nonnative species have on covered and other native species within BRCP lands. • Methods for assessing threats for establishment of nonnative animals and plants adjacent to lands onto BRCP lands. 	• Unknown	• Entire Plan Area

CM Number: Title	Description	Extent	General Location
	<ul style="list-style-type: none"> • Methods for assessing threats for the spread of nonnative plants from BRCP lands onto adjacent lands. • A decision-making process for determining the need for implementing management actions to control nonnative species. • A description of potential nonnative species control methods. • A process for developing and implementing monitoring necessary to assess the effectiveness of implemented control methods 		
<p>CM3: Identify High Priority Locations for Wildlife Passage Structures and Secure Funding</p>	<p>This CM would require an assessment of the permeability for movement of small mammals, amphibians, and reptiles across linear anthropogenic structures (e.g., roads, railroads, utilities) in BRCP-established ecological corridors. To conduct the assessment, the BRCP Implementing Entity⁴ will review CDFW, Caltrans, and other relevant wildlife roadkill records for roads within BRCP ecological corridors and will coordinate with USFWS and CDFW to identify locations in the corridors where movement and migration of covered and other native wildlife may be substantially impeded by roads and other anthropogenic barriers. Based on results of the assessment, the BRCP Implementing Entity will identify high-priority areas for implementing actions to improve wildlife passage across structures.</p>	<ul style="list-style-type: none"> • Unknown 	<ul style="list-style-type: none"> • Entire Plan Area
<p>Natural Community–Level Conservation Measures</p>			
<p>CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans</p>	<p>This CM would restore different acreages of wetland and riparian habitat across all CAZs to support habitat for covered species and to be dominated by native plant species that are typical of these riparian and wetland habitat types in the Plan Area.</p>	<ul style="list-style-type: none"> • 179 acres of riparian forest habitats • 11 acres of riparian willow scrub • 126 acres of emergent wetlands • 306 acres of vernal pool and other seasonal wetlands 	<ul style="list-style-type: none"> • Cascade Foothills CAZ • Sierra Foothills CAZ • Northern Orchards CAZ • Southern Orchards CAZ • Basin CAZ • Sacramento River CAZ

⁴ BCAG would be the BRCP Implementing Entity and would be the agency responsible for implementing the BRCP.

CM Number: Title	Description	Extent	General Location
<p>CM5: Enhance Protected Natural Communities for Covered Species</p>	<p>This CM would require the preparation and implementation of management plans for protected natural communities and covered species habitats supported by those communities and would implement management activities for specific natural communities, including oak woodland and savanna, grassland, riparian, wetlands, aquatic, and agricultural. Management plans would provide the information necessary to guide habitat enhancement and management actions to achieve the biological objectives established for the conserved lands addressed by each plan. The content of management plans will include a description of the following.</p> <ul style="list-style-type: none"> • The biological goals and objectives to be achieved with the protection and management of the parcels. • Base ecological conditions (e.g., habitat maps, assessment of covered species habitat functions, occurrence of covered and other native wildlife species, vegetation structure and composition, assessment of nonnative species abundance and their effects on habitat functions, occurrence and extent of nonnative species). • Vegetation management actions that benefit covered communities, habitats, and species and reduce fuel loads as appropriate and that are necessary for implementing species-specific conservation measures. • Current and historical livestock grazing management practices. • Incorporation of a fire management plan developed in coordination with the appropriate agencies and, to the extent practicable, consistent with achieving the biological objectives of the BRCP. • Infrastructure, hazards, and easements. • Existing land uses and management practices and their relationship to covered species habitat functions. • Applicable permit terms and conditions. • Applicable terms and conditions of conservation easements. • Management actions and schedules. • Monitoring requirements and schedules. • Established data acquisition and analysis protocols. • Established data and report preservation, indexing, and repository protocols. • The adaptive management approach. • Any other information relevant to management of the protected parcels. 	<ul style="list-style-type: none"> • Same as CM1 and CM4 	<ul style="list-style-type: none"> • Specific parcels or multiple parcels within each CAZ in the entire Plan Area

CM Number: Title	Description	Extent	General Location
<p>CM6: Maintain and Enhance Public and Easement Habitat Lands for Covered Species</p>	<p>This CM would require coordination with federal, state, and local government agencies and other organizations and entities responsible for public and easement habitat lands (PEHL) in the Plan Area to implement actions to maintain or enhance conservation of certain species. The BRCP Implementing Entity would coordinate and enter into agreements with various agencies and Permit Applicants to enhance the conservation provided for the following species: active Swainson’s hawk, white-tailed kite, and peregrine falcon nest sites; active bald eagle nest and roost sites; active bank swallow nesting colonies; occupied western burrowing owl nesting burrows; giant garter snake and western pond turtle; occurrences of Ferris’ milkvetch, Ahart’s dwarf rush, Greene’s tuctoria, Hoover’s spurge, Butte County checkerbloom, California beaked-rush, Ahart’s paronychia, Butte County meadowfoam, lesser saltscale, Butte County golden clover, and Red Bluff dwarf rush.</p>	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Sacramento River CAZ
<p>Species-Specific Conservation Measures</p>			
<p>CM7: Create and Maintain Greater Sandhill Crane Winter Roosting Habitat</p>	<p>This CM would require the creation and maintenance of greater sandhill crane winter roosting habitat within the Basin CAZ in proximity to traditional greater sandhill crane winter upland use areas.</p>	<ul style="list-style-type: none"> • 160 acres 	<ul style="list-style-type: none"> • Basin CAZ
<p>CM8: Restore Giant Garter Snake Habitat</p>	<p>This CM would restore giant garter snake habitat and would include a mosaic of emergent wetland, open water, and upland habitat. Restored giant garter snake habitat will be a minimum of 20 acres; where rice agricultural fields are converted to habitat for giant garter snake, minimum acreage and geometry of restored wetlands will be prescribed by the size of rice fields. All restored emergent wetland in giant garter snake habitat sites must have a secure source of water for maintaining the intended restored habitat functions. To minimize the potential for injury or mortality of giant garter snake, habitat restoration and management activities would be conducted during the giant garter snake active period. Restored giant garter snake habitat would be designed to support a mix of native emergent vegetation and open water and upland edge configuration that provide maximum function, within site constraints.</p>	<ul style="list-style-type: none"> • 500 acres 	<ul style="list-style-type: none"> • Basin CAZ

CM Number: Title	Description	Extent	General Location
CM9: Replenish Spawning Gravels for Salmonids	This CM would place 30,000 cubic yards of spawning gravels of a suitable size for use by Chinook salmon and steelhead in suitable spawning locations to increase the extent of salmonid spawning habitat. Anticipated actions to implement this conservation measure include mapping, assessing and prioritizing locations of existing and suitable spawning habitat. BCAG will monitor enhanced and restored spawning habitat to determine if they support salmonid spawning and to determine if additional replenishment may be required to maintain the habitats over time.	<ul style="list-style-type: none"> • 30,000 cubic yards 	<ul style="list-style-type: none"> • Big Chico Creek • Little Chico Creek • Butte Creek • Little Dry Creek • Rock Creek • Mud Creek
CM10: Remove Impediments to Upstream and Downstream Fish Passage	This CM would require the assessment of specified stream channels to identify locations where passage of covered fish species is physically impeded. Impediments could include, but are not limited to, debris build-up, large boulders that have shifted, and existing non-functional fish ladders. BCAG would coordinate with NMFS, USFWS, and DFW to prioritize each of the identified locations for implementing actions to improve fish passage based on the likely magnitude of benefits for the covered fish species. Based on priority, BCAG would contact landowners where the impediments are located to enter into cooperative agreements to implement actions necessary to modify stream channels to improve conditions for fish passage.	<ul style="list-style-type: none"> • Unknown 	<ul style="list-style-type: none"> • Pine Creek • Rock Creek • Mud Creek • Big Chico Creek • Lindo Channel • Little Chico Creek • Butte Creek • Little Dry Creek
CM11: Remove, Modify, or Screen Unscreened Diversions	This CM would install fish screens or move, consolidate, or otherwise modify diversions that do not have fish screens to reduce entrainment loss of juvenile salmonids along Big Chico Creek and Butte Creek.	<ul style="list-style-type: none"> • Up to 42 known diversions 	<ul style="list-style-type: none"> • Cascade Foothills CAZ • Northern Orchards CAZ • Basin CAZ

CM Number: Title	Description	Extent	General Location
CM12: Conserve Butte County Meadowfoam	<p>This CM would protect in perpetuity self-sustaining populations of Butte County meadowfoam throughout its full ecological, geographical, and genetic range and ameliorate or eliminate the threats that caused it to be listed. It would establish the Chico Butte County Meadowfoam Preserve (Chico BCMP), with specifically identified boundaries, to protect Butte County meadowfoam known occurrences, primary habitat, and secondary habitat. In addition, all known currently unprotected occurrences of Butte County meadowfoam in the Rock Creek, Chico D, Gold Run Creek, and Table Mountain population groupings would be protected. CM10 would require that all previously unknown and new occurrences of Butte County meadowfoam in Rock Creek, Chico A–D, Gold Run Creek, and Table Mountain be detected and protected. CM10 would require the preparation of management plans, which would be periodically updated to incorporate changes in maintenance, management, and monitoring requirements as they may occur over the term of the BRCP. The content of the management plans could include the following.</p> <ul style="list-style-type: none"> • The biological goals and objectives to be achieved with the management of the parcels. • The baseline ecological conditions. • Existing land uses and management practices and their relationship to Butte County meadowfoam habitat functions. • Management actions (e.g., vegetation management) and schedules, including appropriate grazing regime. • Monitoring requirements and schedules. • The adaptive management approach. • Any other information relevant to management of the protected parcels. 	<ul style="list-style-type: none"> • 6,002 acres of primary habitat • 1,202 acres of secondary habitat 	<ul style="list-style-type: none"> • Entire Plan Area
CM13: Conduct Surveys to Locate and Protect New Occurrences of Butte County Checkerbloom	<p>This CM would require conducting surveys to locate new occurrences of Butte County checkerbloom during the appropriate time of year in suitable habitat in the Plan Area north of upper Bidwell Park. Surveys would be conducted on public lands and on private lands with permission of land owner. BCAG would also seek out occurrences that have been previously identified but not reported. Based on the results of the surveys, BCAG would distribute the acquisition of natural communities in the Cascade Foothills CAZ to protect up to 20 newly discovered occurrences.</p>	<ul style="list-style-type: none"> • Unknown • Protect up to 20 newly discovered occurrences 	<ul style="list-style-type: none"> • Cascade Foothill CAZ north of Bidwell Park

CM Number: Title	Description	Extent	General Location
CM14: Translocate Conservancy Fairy Shrimp, Hoover’s Spurge, Ahart’s Dwarf Rush, Hairy Orcutt Grass, Slender Orcutt Grass, and Greene’s Tuctoria	<p>This CM would require implementation actions to establish or reestablish occurrences of Conservancy fairy shrimp, Ahart’s dwarf rush, Hoover’s spurge, hairy Orcutt grass, slender Orcutt grass, and Greene’s tuctoria in at least two BRCP protected vernal pools for each species. One or more species may be established in the same vernal pool. The CM would require the following.</p> <ul style="list-style-type: none"> • Evaluate protected vernal pools to determine their suitability (e.g., hydrology and soil conditions) for establishing Conservancy fairy shrimp, Ahart’s dwarf rush, Hoover’s spurge, hairy Orcutt grass, slender Orcutt grass, and Greene’s tuctoria. • Adopt techniques for establishing Conservancy fairy shrimp, Ahart’s dwarf rush, Hoover’s spurge, hairy Orcutt grass, slender Orcutt grass, and Greene’s tuctoria. • Harvest seed of Ahart’s dwarf rush, Hoover’s spurge, hairy Orcutt grass, slender Orcutt grass, and Greene’s tuctoria and cysts of Conservancy fairy shrimp from extant occurrences within or adjacent to the Plan Area. Propagule sources will be from the closest populations of each species without adversely affecting the source populations. • Manage established occurrences to ensure their persistence over time. • Monitor the effectiveness of Ahart’s dwarf rush, Hoover’s spurge, hairy Orcutt grass, slender Orcutt grass, and Greene’s tuctoria establishment and management techniques to gather information necessary to improve establishment of new occurrences over time. • Monitor propagule sources to ensure that occurrences from which fairy shrimp or plant material is harvested to ensure that the occurrences remain viable. 	<ul style="list-style-type: none"> • Unknown 	<ul style="list-style-type: none"> • All CAZs

Source: Butte County Association of Governments 2015: Chapter 5.

^a No extant occurrences are known in the Plan Area, but new or unknown occurrences provide for a variety of actions that improve habitat and survival of covered fish species occurrences could be discovered on PEHL over the permit term of the BRCP.

Table 2-4. Physical Actions Needed to Implement BRCP Conservation Measures

Conservation Measure	Physical Actions Required to Implement Measure
CM1: Acquire Lands	<ul style="list-style-type: none"> • Land acquisition.
CM2: Develop an Invasive Species Control Program	<ul style="list-style-type: none"> • Monitoring. • Surveying.
CM3: Identify High Priority Locations for Wildlife Passage Structures and Secure Funding	<ul style="list-style-type: none"> • None.
CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans	<p>Activities necessary to restore riparian habitats depend on site-specific conditions, but could include the following.</p> <ul style="list-style-type: none"> • Site clearing of debris and existing vegetation. • Site grading to improve microhabitat conditions, hydrology, and planting/seeding conditions. • Planting and seeding of native plants. • Irrigation of sufficient duration to establish riparian vegetation. • Control of weeds and herbivory for sufficient duration to establish riparian vegetation. <p>Actions necessary to restore vernal pool complex depend on site-specific conditions, but could include the following.</p> <ul style="list-style-type: none"> • Site clearing of debris and existing vegetation. • Site grading to improve microhabitat conditions, hydrology, and planting/seeding conditions. • Collection of native vernal pool plant species seeds and soil containing seeds and vernal pool shrimp cysts for inoculating restored vernal pools. • Planting and seeding of native plants in restored vernal pool complex uplands. • Control of weeds and herbivory for sufficient duration to establish native vernal pool plant species. • Restoration of vernal pools may be conducted at sites that currently support grasslands or at sites that have been cleared for agriculture. <p>Activities necessary to restore emergent wetland depend on site-specific conditions, but could include the following.</p> <ul style="list-style-type: none"> • Site clearing of debris and existing vegetation. • Site grading to improve microhabitat conditions, hydrology, and planting/seeding conditions. • Erosion control measures. • Collection of native emergent plant species rhizomes and other propagules for establishment in

Conservation Measure	Physical Actions Required to Implement Measure
CM5: Enhance Protected Natural Communities for Covered Species	<p data-bbox="747 245 947 272">restoration sites.</p> <ul data-bbox="726 282 1875 418" style="list-style-type: none"> <li data-bbox="726 282 1524 310">• Planting and seeding of native emergent wetland and aquatic plants. <li data-bbox="726 319 1304 347">• Plant protection and ground cover manipulation. <li data-bbox="726 357 1875 418">• Installation or modification of water irrigation and drainage infrastructure, including wells, pumps, water control structures and irrigation ditches. <p data-bbox="726 440 1619 467">Management actions for oak woodland and savanna may include the following.</p> <ul data-bbox="726 477 1776 732" style="list-style-type: none"> <li data-bbox="726 477 1591 505">• Grading, Planting and other ground disturbing restoration-related actions. <li data-bbox="726 514 1709 542">• Operation of habitat enhancement, restoration, and management-related equipment. <li data-bbox="726 552 1184 579">• Retention of snags and downed wood. <li data-bbox="726 589 1776 651">• Prohibiting tree harvest for firewood and other uses unless tree harvest is identified in the management plan as a method for achieving habitat enhancement objectives. <li data-bbox="726 660 1430 688">• Managing grazing to enhance tree survival and recruitment. <li data-bbox="726 698 1167 725">• Protecting seedlings from herbivory. <p data-bbox="726 742 1686 769">Management actions for the grassland natural community may include the following.</p> <ul data-bbox="726 779 1913 1360" style="list-style-type: none"> <li data-bbox="726 779 1598 807">• Grading, planting, and other ground disturbing restoration-related actions. <li data-bbox="726 816 1709 844">• Operation of habitat enhancement, restoration, and management-related equipment. <li data-bbox="726 854 1318 881">• Prohibiting rodent control activities on preserves. <li data-bbox="726 891 1518 919">• Creating debris piles to create habitat for small mammals and birds. <li data-bbox="726 928 1509 956">• Managing grazing to improve the abundance of fossorial mammals. <li data-bbox="726 966 1860 1027">• Installation of artificial nesting burrows for western burrowing owl to facilitate use of unoccupied areas. <li data-bbox="726 1037 1875 1099">• Installation of perching structures to facilitate use of protected habitats by western burrowing owl, Swainson’s hawk, and white-tailed kite. <li data-bbox="726 1109 1850 1203">• Use of fire, managed grazing, or other vegetation management techniques to influence vegetation structure or composition, increase the absolute cover and diversity of native plant species, and control undesirable nonnative plant species. <li data-bbox="726 1213 1598 1240">• Application of herbicides to remove heavy infestations of nonnative plants. <li data-bbox="726 1250 1136 1278">• Reseeding of native plant species. <li data-bbox="726 1287 1875 1349">• Managing livestock grazing to improve the function of vernal pools and grassland swale complex as habitat for covered vernal pool shrimp and plant species

Conservation Measure	Physical Actions Required to Implement Measure
	<p>Management actions for the riparian natural community may include the following.</p> <ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Managing livestock grazing to maintain favorable habitat conditions for covered species. • Controlling nonnative predators and invasive plant species. • Planting native species to improve habitat structure and species composition. • Installing or maintaining woody debris in stream channels to create pools to increase the diversity of microhabitats. <p>Management actions for protected emergent wetlands in the wetland natural community may include the following.</p> <ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Controlling nonnative species. • Managing livestock grazing to maintain favorable habitat conditions for covered species. • Increasing extent of native vegetation. • Controlling human access and activities. • Managing water sources supporting wetlands. • Increasing or decreasing ponding capacity. • Erosion control. • Maintaining or enhancing adjacent upland habitats to support habitat transitions and ecotones and to protect watersheds. • Maintaining appropriate water depth. • Establishing emergent vegetation. • Installing fencing to manage access by livestock. • Controlling nonnative predators. <p>Management actions for restored and natural emergent wetlands in the wetland natural community may include the following.</p> <ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Maintaining sufficient water levels and water quality throughout the year to support emergent vegetation, aquatic food webs, and diverse aquatic habitat structure.

Conservation Measure	Physical Actions Required to Implement Measure
CM6: Maintain and Enhance Public and Easement Habitat Lands for Covered Species	<ul style="list-style-type: none"> • Protecting upland basking and overwinter/hibernation sites, including rodent burrows. • Managing exotic species that may compete with or prey on covered species (e.g., bullfrogs, predatory fish). • Regulating human recreational activities (e.g., fishing) to prevent disturbance. • Enhancing the habitat structure within the water column to provide underwater refugia for prey species for giant garter snakes and for juvenile western pond turtles. <p>Management actions for the aquatic natural community may include the following.</p> <ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Planting emergent vegetation along pond margins to increase habitat functions for western pond turtle and western spadefoot. • Maintaining and improving pond water control structures and water supplies. • Controlling nonnative predators in ponds (e.g., bullfrogs). • Removing riprap along stream channels to improve habitat functions for covered fish, reptile, and amphibian species and to rehabilitate aquatic ecosystem processes. • Installing large woody debris along stream channels and channel banks to improve instream cover conditions for covered fish species. • Coordinating with flood control entities to modify channel maintenance practices to maintain woody debris in channels supporting anadromous fisheries. <p>Management actions for agricultural habitats may include the following.</p> <ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Reducing the use of herbicides and pesticides. • Altering cultivation and harvest practices to increase forage and prey availability for covered and other native wildlife species. • Planting of hedgerows to provide rodent habitat to increase prey abundance for covered and other raptors. • Maintaining water in canals and ditches during the activity period (early spring through mid-fall) for giant garter snake, western pond turtle, and other native wildlife species.
	<ul style="list-style-type: none"> • None

Conservation Measure	Physical Actions Required to Implement Measure
CM7: Create and Maintain Greater Sandhill Crane Winter Roosting Habitat	<ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Irrigation management to maintain the required wetted surface and water depths to support crane roosting (i.e., wetted pool area of at least 20 acres with water depths averaging 4 inches). • Construction of berms or other infrastructure as needed to maintain suitable roost site conditions. • Farming and vegetation management practices that maintain upland vegetation adjacent to the wetted roosting area in an open condition that is suitable for supporting crane use of roost sites. • Roosting habitat would be annually flooded from October 1 through March 15 or before March 15 if cranes have abandoned use of a site
CM8: Restore Giant Garter Snake Habitat	<p>Activities necessary to restore emergent wetland depend on site-specific conditions, but could include the following.</p> <ul style="list-style-type: none"> • Site clearing of debris and existing vegetation. • Site grading to improve microhabitat conditions, hydrology, and planting/seeding conditions. • Erosion control measures. • Collection of native emergent plant species rhizomes and other propagules for establishment in restoration sites. • Planting and seeding of native emergent wetland and aquatic plants. • Plant protection and ground cover manipulation. • Installation or modification of water irrigation and drainage infrastructure, including wells, pumps, water control structures and irrigation ditches.
CM9: Replenish Spawning Gravels for Salmonids	<ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Placement of spawning gravel in the highest priority channel locations.
CM10: Remove Impediments to Upstream and Downstream Fish Passage	<ul style="list-style-type: none"> • Remove barriers to fish passage, depending on the type of impediment to fish passage, through use of hand tools and machinery (e.g., backhoes) in stream channels to dislodge and remove debris.
CM11: Remove, Modify, or Screen Unscreened Diversions	<ul style="list-style-type: none"> • Install fish screens; move, consolidate, or otherwise modify up to up to 25 diversions that do not have fish screens to reduce entrainment loss of juvenile salmonids along Big Chico Creek and Butte Creek.
CM12: Conserve Butte County Meadowfoam	<ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment.

Conservation Measure	Physical Actions Required to Implement Measure
CM13: Conduct Surveys to Locate and Protect New Occurrences of Butte County Checkerbloom	<ul style="list-style-type: none"> • Surveys.
CM14: Translocate Conservancy Fairy Shrimp, Hoover’s Spurge, Ahart’s Dwarf Rush, Hairy Orcutt Grass, Slender Orcutt Grass, and Greene’s Tuctoria	<ul style="list-style-type: none"> • Grading, planting, and other ground disturbing restoration-related actions. • Operation of habitat enhancement, restoration, and management-related equipment. • Surveys to determine suitable site conditions. • Limited ground disturbance to establish species in at least two protected vernal pools that support site conditions. • Limited ground disturbance to harvest species from other areas.
Sources: Butte County Association of Governments 2015: Chapter 5, and Table 4-1.	

Table 2-5. Natural Community Protection Targets (acres unless otherwise noted)^a

Natural Community and Land Cover Type	Total Existing in Plan Area	Conservation Acquisition Zone (CAZ) Habitat Protection Targets ^a						Total Protection Target
		Sierra Foothills	Cascade Foothills	Northern Orchards	Southern Orchards	Basin	Sacramento River	
Oak Woodland and Savanna								
Blue oak savanna	10,581	2,009	853	0	0	0	0	2,862
Blue oak woodland	34,735	2,177	3,696	0	0	0	0	5,873
Live oak woodland and mixed oak woodland	47,274	9,868	1,888	0	0	0	0	11,756
<i>Subtotal</i>	92,590	14,054	6,437	0	0	0	0	20,491
Grassland								
Grassland	68,124	7,041	4,105	1,565	430	300	0	13,441
Grassland with vernal swale complex	34,110	4,820	14,960	990	0	630	0	21,400
<i>Subtotal</i>	102,234	11,861	19,065	2,555	430	930	0	34,841
Riparian								
Cottonwood-willow and valley oak riparian forest ^b	11,840	1,035	1,560	1,410	635	335	675	5,650
Willow scrub ^b	2,995	165	170	85	0	300	0	720
<i>Subtotal</i>	14,835	1,200	1,730	1,495	635	635	675	6,370
Wetland								
Emergent wetland	4,440	495	0	100	0	100	0	695
Managed wetland	25,486	0	0	0	0	0	0	0
<i>Subtotal</i>	29,927	495	0	100	0	100	0	695

Natural Community and Land Cover Type	Total Existing in Plan Area	Conservation Acquisition Zone (CAZ) Habitat Protection Targets ^a						Total Protection Target
		Sierra Foothills	Cascade Foothills	Northern Orchards	Southern Orchards	Basin	Sacramento River	
Aquatic								
Open water–perennial stream channel (linear miles)	457	Not applicable ^c	Not applicable ^c	Not applicable ^c	0	Not applicable ^c	Not applicable ^c	45
Open water–intermittent stream channel (linear miles)	979	Not applicable ^d	Not applicable ^d	0	0	0	0	12
<i>Subtotal (linear miles)</i>	1,436	0	0	0	0	0	0	57
Pond (number)	465	Not applicable ^e	Not applicable ^e	Not applicable ^e	Not applicable ^e	Not applicable ^e	Not applicable ^e	80
Agricultural Lands								
Rice ^f	120,316	0	0	1,317	0	21,660	205	23,182
Irrigated pasture and irrigated cropland ^g	21,572	1,240	0	796	2,534	250	200	3,780
<i>Subtotal (acreage)</i>	141,889	1,240	0	2,113	2,534	21,910	405	26,962
Total Acres ^h	381,474	27,610	27,232	6,263	3,599	23,575	1,080	89,601

Source: Butte County Association of Governments 2015:Table 5-5.

- ^a Targets include land cover types to be protected both for conservation of natural communities and as mitigation for covered activities that remove natural communities. Consequently, the amount of each natural community that is protected may be less than shown if all the permanent development covered activities and the habitat protection that is required to mitigate impacts are not implemented. Segregated natural community protection conservation and mitigation targets are presented in Table 5-9 of the BRCP.
- ^b These land cover types may be protected as mitigation for impacts on non–stream-associated dredger tailings with riparian forest/scrub-stream.
- ^c Targets are not established by CAZ. Perennial stream channel may be protected in any of the five CAZs indicated that are consistent with achieving stream channel habitat biological objectives for the covered fish species and foothill yellow-legged frog.
- ^d Intermittent stream channel may be protected in either of the two CAZs indicated that are consistent with achieving intermittent stream channel habitat biological objectives for foothill yellow-legged frog.
- ^e Targets are not established by CAZ. Ponds may be protected in any CAZ that are consistent with achieving pond habitat protection biological objectives for western pond turtle and/or western spadefoot.
- ^f The acreage targets in these CAZs are for planning purposes only. The combined target acreage of rice can be achieved through any combination of acreage between these three CAZs that are consistent with achieving the applicable biological goals and objective.
- ^g The acreage targets in these CAZs are for planning purposes only. The combined target acreage of irrigated pasture and irrigated cropland can be achieved through any combination of acreage between these four CAZs that are consistent with achieving the applicable biological goals and objectives.
- ^h Does not include stream channel and pond protection targets because these targets are not expressed in acres.

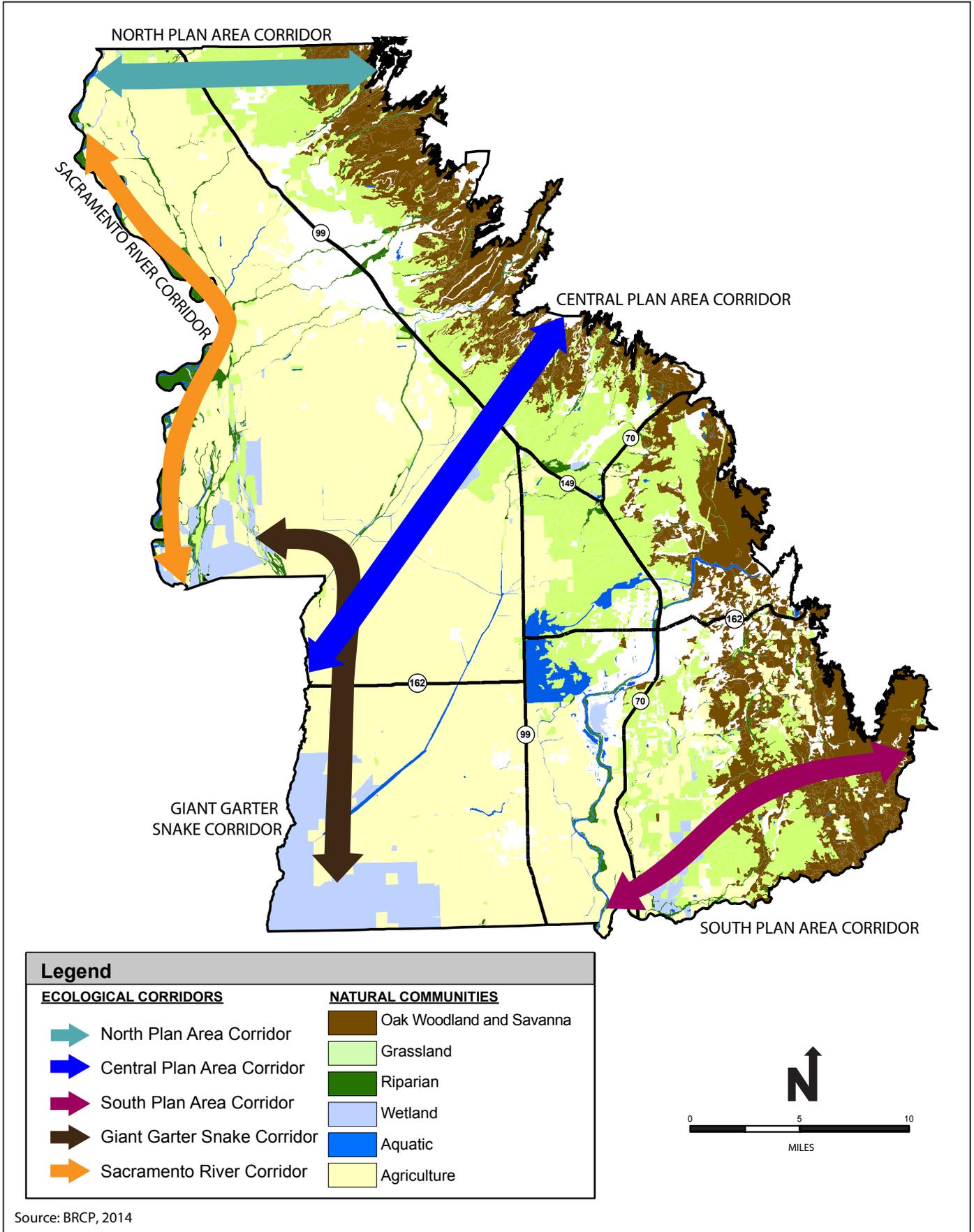
Other Conservation Actions

In addition to the Conservation Measures described above, BCAG will implement activities to improve urban stormwater quality in support of those conservation measures identified for covered aquatic species (BRCP Section 5.4.4). These actions will support the cities of Chico, Oroville, Gridley, and Biggs in obtaining funding through federal and state grants and other sources to implement programs to support compliance with National Pollutant Discharge Elimination System (NPDES) stormwater permits for municipal separate storm sewer systems (MS4s). Funding different types of water quality control actions under this measure aims to reduce the load or concentrations of contaminants that are toxic to covered fish species and other native fish and amphibians in urban runoff entering Big Chico Creek, Lindo Channel, Little Chico Creek, Sycamore/Mud Creek, Butte Creek, and the Feather River. Actions could be physical changes to the stormwater system or planning and documentation, and can include:

- Construction of stormwater retention ponds for the capture of stormwater.
- Construction of stormwater retention irrigation holding ponds for the capture and irrigation use of stormwater.
- Design and establishment of vegetated buffer strips to slow runoff velocities and capture sediments and other pollutants.
- Design and construction of bioretention systems (grass buffer strips, sand bed, ponding area, mulch layer, planting soil, and plants) to slow runoff velocities and for removal of pollutants from stormwater.
- Construction of stormwater curb extensions adjacent to existing commercial businesses that are likely to contribute oil and grease runoff.
- Establishment of stormwater media filters to remove particulates and pollutants.
- Providing support for establishment of onsite infiltration systems in lieu of new storm drain connections for new construction, such as pervious pavement in place of asphalt and concrete in parking lots and along roadways, and downspout disconnections to redirect roof water to cisterns on existing developed properties, including residential properties.

Ecological Corridors

Because urban and agricultural development can disrupt the continuity and permeability of habitat for wildlife, the BRCP includes established ecological corridors between the CAZs (Figure 2-4). The permeability for safe movement of small mammals, amphibians, and reptiles across linear anthropogenic structures (i.e., roads, railroads, and utilities) is an important component of the conservation strategy. Especially for giant garter snake and other snakes, roads pose a threat because snakes are attracted to roads for thermoregulation (i.e., basking). Given the large size of the planned ecological corridors under the BRCP, it is likely that some lands that do not meet conservation land criteria but are suitable as movement habitat would need to be acquired. On such lands, the BRCP Implementing Entity would undertake enhancements to minimize effects of barriers and habitat gaps that adversely affect the movement of covered and other native wildlife species (see CM4, Improve the Permeability of Linear Structures for Native Wildlife). The four ecological corridors are described below.



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Figure 2-4
Ecological Corridor Locations BRCP

- **Ecological Corridor 1, North Plan Area Corridor.** Maintain an ecological corridor at least 1.2 miles wide comprising contiguous patches of oak woodland and savanna, grassland, riparian, wetland, and aquatic natural communities and agricultural lands north of the city of Chico that protect the elevation gradient extending from the foothills at the eastern Plan Area boundary in the Cascade Foothills CAZ across the valley floor in the Northern Orchards CAZ and connecting to the Sacramento River.
- **Ecological Corridor 2, Central Plan Area Corridor.** Maintain an ecological corridor at least 1.2 miles wide comprising of contiguous patches of oak woodland and savanna, grassland, riparian, wetland, and aquatic natural communities between the cities of Chico and Oroville that protect the elevation gradient extending from the foothills at the eastern Plan Area boundary in the Cascade Foothills CAZ across the valley floor in the Basin CAZ and connecting to Butte Creek along the western boundary of the Plan Area.
- **Ecological Corridor 3, South Plan Area Corridor.** Maintain an ecological corridor at least 1.2 miles wide comprising contiguous patches of oak woodland and savanna, grassland, riparian, wetland, and aquatic natural communities and agricultural lands south of the city of Oroville that protect the elevation gradient extending from the foothills at the eastern Plan Area boundary in the Sierra Foothills CAZ across the valley floor and connecting to the Feather River in the Southern Orchards CAZ.
- **Ecological Corridor 4, Giant Garter Snake Corridor.** Maintain a corridor at least 0.6 mile wide comprising contiguous patches of riparian, wetland, and aquatic natural communities and agricultural lands that support giant garter snake movement habitat and connect the Llano Seco Unit of the Upper Butte Basin Wildlife Area in the Sacramento River CAZ to the Little Dry Creek Unit of the Upper Butte Basin Wildlife Area and to Gray Lodge Wildlife Area in the Basin CAZ. The corridor will be configured such that there is contiguous giant garter snake movement habitat connecting the three Wildlife Areas.
- **Ecological Corridor 5, Sacramento River Corridor.** Maintain a corridor comprised of existing remaining patches of riparian, wetland, and aquatic natural communities along the Sacramento River in the Sacramento River and Northern Orchards CAZs. The corridor is meant to protect the connectivity of riparian and wetland wildlife habitats that border the Sacramento River to provide for the movement and migration of covered and other native wildlife species (e.g., deer, skunk, raccoon, and neotropical migrant birds). No specific width is identified for this corridor because of the active nature of portions of the river in this reach and because the width of natural communities adjacent to the Sacramento River is highly variable, being constrained by agricultural lands, mainly orchards.

Jurisdictional Waters of the United States

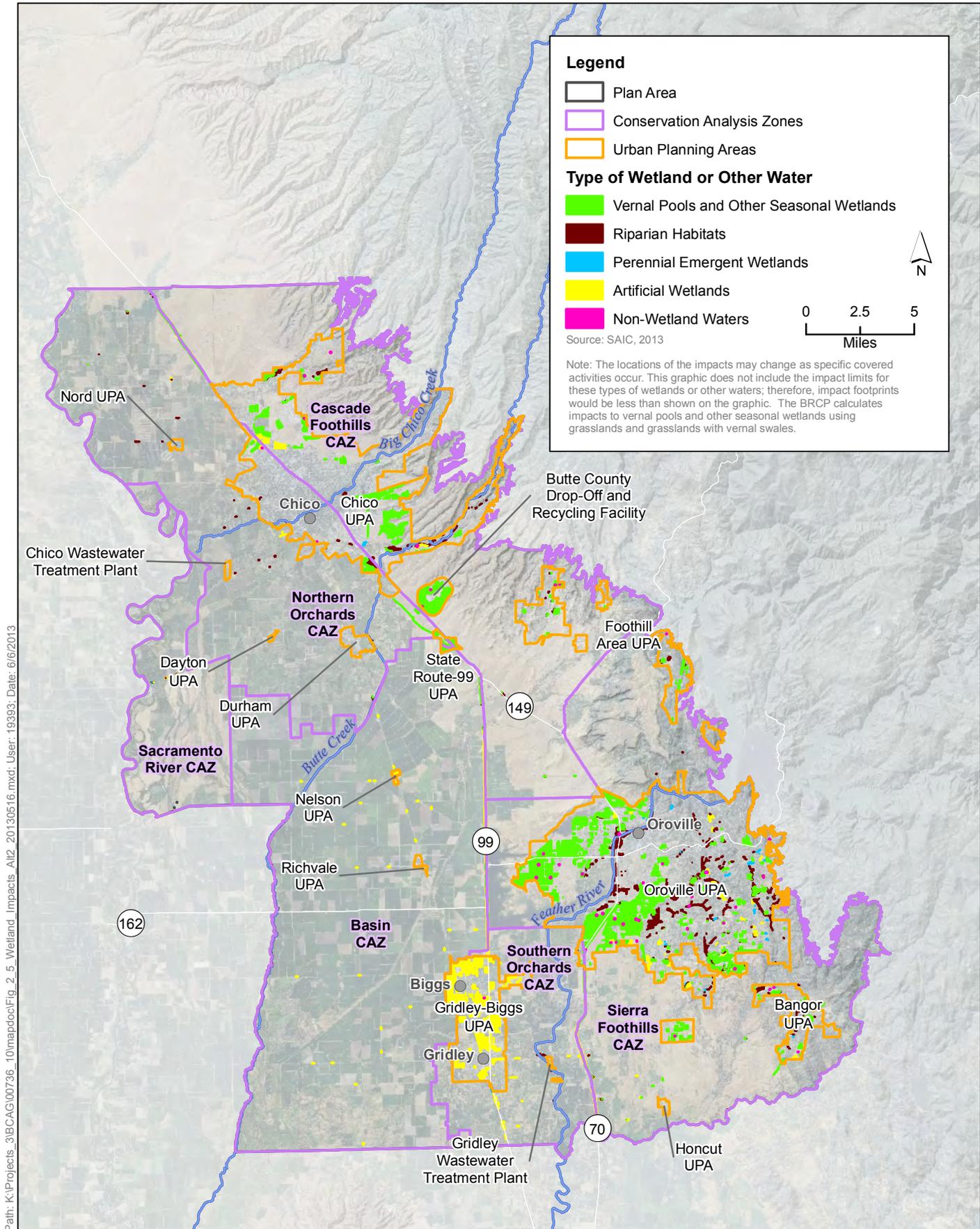
The BRCP evaluates the effects of implementing the combined buildout of the preferred alternatives of the Local Agencies' general plan EIRs as part of the BRCP covered activities. The extent of riparian and wetland land cover types that could be removed by the covered activities is reduced in the BRCP to avoid impacts in specified UPAs. In addition, the conservation strategy includes AMMs (BRCP Section 6.2) that are required to be implemented at the time each of the covered activities is implemented. These measures are designed to avoid or further minimize direct and indirect impacts on wetlands, streams, and other waters that would otherwise be incurred under the covered activities. The BRCP provides additional limits on impacts and specific impact AMMs that further reduce impacts on aquatic resources that would result from activities identified in the various

general plans' preferred alternatives. Approximately 797 acres of waters of the United States (including potential vernal pools, seasonal wetlands, riparian habitat, and perennial emergent) are anticipated to be affected by the BRCP. Table 2-6 summarizes the existing and potentially affected acres of wetlands by CAZ and Table 2-7 identifies the types of wetlands or other waters expected to be impacted by the BRCP. Figure 2-5 identifies the general locations of these types of wetlands or other waters. It is anticipated no acres or linear miles of other waters of the United States (e.g., open waters, major canals) would be affected by the BRCP because of the location of activities and because the BRCP does not allow for impacts to these types of habitats.

Table 2-6. Existing and Affected Wetlands by CAZ (acres)

	Existing	Potentially Affected
Cascades		
Outside UPAs	4,67	13
Inside UPAs	2,155	129
<i>Subtotal</i>	6,772	142
Sierras		
Outside UPAs	6,512	21
Inside UPAs	3,900	373
<i>Subtotal</i>	10,412	394
Northern Orchards		
Outside UPAs	3,442	25
Inside UPAs	456	112
<i>Subtotal</i>	3,898	137
Southern Orchards		
Outside UPAs	2,670	20
Inside UPAs	122	67
<i>Subtotal</i>	2,792	87
Basin		
Outside UPAs	27,078	29
Inside UPAs	5	3
<i>Subtotal</i>	27,084	32
Sacramento River		
Outside UPAs	13,445	4
Total	64,403	796

Source: Butte County Association of Governments 2015:Table 4-12.



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Figure 2-5
Waters of the U.S. Potentially Impacted by Alternative 2

Table 2-7. Existing and Affected Waters of the United States under the Proposed Action in the Plan Area

Type of Wetland or Other Water	Total in the Plan Area	Total Impact Allowable under the Proposed Action ^a	Estimated Development Impact ^b
Potential Wetlands – Vernal Pools and Other Seasonal Wetlands (acres) ^c	3,999	303	327
Potential Wetlands – Riparian Habitats (acres) ^d	22,149	345	1,413
Potential Wetlands – Perennial Emergent (acres) ^e	4,440	35	81
Potential Wetlands – Artificial Types (acres) ^f	33,815	113	113
Non-Wetland Waters (number of ponds) ^g	465	25	25
Total Waters of U.S. (acres)	64,868	796	3,813

^a The BRCP established these limits in Table 4-11 of the BRCP based on the estimated development impact. These limits are a result of review and adjustment to provide for additional avoidance.

^b This is the estimated impact using the development footprints from general plans and other regional plans.

^c Acreages are based on BRCP's density assumptions detailed in Chapter 6 of the BRCP and include the following habitat types: Vernal Pools and Other Seasonal Wetlands in Grasslands with Swale Complexes, Vernal Pools and Other Seasonal Wetlands in Grasslands, Vernal Pools and Other Seasonal Wetlands associated with Streams.

^d Only portions of riparian habitats meet jurisdictional criteria under CWA Section 404, but all areas meet jurisdictional criteria under Section 1602 and include the following habitat types: Cottonwood-Willow Riparian Forest, Valley Oak Riparian Forest, Willow Scrub, Herbaceous Riparian and River Bar, Dredger Tailings with Riparian Forest and Scrub-Stream, Dredger Tailings with Riparian Forest and Scrub-Non-Stream.

^e Includes the habitat type: Emergent Wetland.

^f Based on BRCP assumptions detailed in Chapter 6 and includes the habitat types: Managed Wetland, Managed Seasonal Wetland, Rice-jurisdictional portion, and Irrigated pasture, cropland-jurisdictional portion.

^g Includes the habitat types: stock ponds. Open Waters, Major Canals and Rivers, Streams and Agricultural Channels have zero acres and linear miles impacted.

Avoidance of direct and indirect impacts on jurisdictional wetlands, where practicable, is the preferred conservation action under the BRCP. If avoidance of direct and indirect impacts cannot be achieved, impacts would be compensated through protection and restoration of like or similar wetland types of equal or higher function at the ratios described in BRCP (Table 5-11 of the BRCP). Where nonnatural wetlands are filled, compensatory mitigation is provided through protection and restoration of natural wetlands types. The impact acreages presented in the BRCP and in the resource chapters of this EIS/EIR are for the purpose of assessing the regional impacts and conservation of wetlands and other waters under full implementation of the BRCP over its 50-year permit term. The BRCP requires jurisdictional delineation of all proposed projects to assess actual impacts, and actual impacts would be calculated during BRCP implementation when specific projects are proposed. The BRCP includes measures that go beyond the mitigation of impacts on wetlands and riparian habitats and contribute to the conservation of these natural communities. These conservation measures include the protection of existing wetland and riparian habitats in excess of compensatory protection mitigation ratios and, for riparian forest, additional restoration

acreage in excess of the restoration mitigation ratio. These measures that contribute to the conservation of wetlands and riparian habitats are required elements of the BRCP.

Avoidance and Minimization Measures

AMMs are designed to avoid or minimize the take of covered species and to reduce impacts on natural communities and covered species and their habitats (including designated critical habitat). These measures include such actions as avoidance of species occurrences and habitat through project design, timing of construction activities in the vicinity of occupied habitat to avoid times when a covered species is present, and avoiding habitat removal during breeding periods. These measures may also avoid or minimize the potential for take by reducing effects on covered and other native species by altering construction plans or activities (e.g., modifying construction footprints, covering open trenches, using materials to reduce runoff from construction sites) or by modifying design elements of projects to reduce operational effects (e.g., noise, lighting, urban runoff).

Table 2-8 and Table 2-9 summarize the BRCP AMMs.

Table 2-8. BRCP Avoidance and Minimization Measures for Permanent Development Projects inside and outside the UPAs

Biological Surveys and Evaluations	
AMM1:	Conduct Planning Surveys
AMM2:	Conduct Preconstruction Surveys
<hr/>	
Project Design	
AMM3:	Avoid and Minimize Impacts on Covered Species
AMM4:	Avoid and Minimize Impacts on Sensitive Wetland and Riparian Habitats
AMM5:	Avoid Siting of Construction Staging Areas and Temporary Work Areas in Occupied Covered Species Habitat
AMM6:	Establish Permanent Habitat Buffers along Stream and Riparian Corridors
AMM7:	Design Developments to Minimize Indirect Impacts at Urban-Habitat Interfaces
AMM8:	Implement Standard Urban Stormwater Management Plans
<hr/>	
Construction	
AMM9:	Establish Activity Exclusion Zones for Nesting/Breeding Birds
AMM10:	Establish Activity Exclusion Zones for Covered Plant Species
AMM11:	Minimize Impacts on Covered Fish Species
AMM12:	Confine and Delineate Work Area
AMM13:	Cover Trenches and Holes during Construction
AMM14:	Control Fugitive Dust
AMM15:	Conduct Worker Training
AMM16:	Install Erosion Control Barriers
AMM17:	Night-Time Lighting of Project Construction Sites
AMM18:	Implement Spill Prevention, Control, and Counter Measure Plan to Eliminate or Minimize Sources of Contaminants
AMM19:	Implement Wet Weather Erosion Control Plan
AMM20:	Implement Stormwater Pollution Prevention Plan
AMM21:	Implement Additional Avoidance and Minimization Measures and Best Management Practices

Table 2-9. BRCP Avoidance and Minimization Measures for Species-Specific Effects, Transportation Facility Permanent Development Projects, and Recurring Maintenance Activities

Species-Specific
AMM22: Exclusion of Wintering Western Burrowing Owls
AMM23: Install Wire Markers on New or Modified Power Transmission Lines within Greater Sandhill Crane Habitat
AMM24: Prevent Raptor Electrocutions
AMM25: Minimize Take and Impacts on Habitat of Giant Garter Snake
Transportation Facility Permanent Development Projects
AMM26: Implement Caltrans Construction Site Best Management Practices to Maintain Water Quality
AMM27: Avoid and Minimize Noise and Other Disturbances from Bridge Construction Activities
AMM28: Avoid and Minimize Impacts on Bat Roosting on Bridges
Recurring Maintenance Activities
AMM29: Cover Trenches and Holes Excavated for Maintenance
AMM30: Conduct Swainson's Hawk and White-Tailed Kite Nest Surveys
AMM31: Minimize Impacts of Water Conveyance Channel Maintenance on Giant Garter Snake

Monitoring Program and Adaptive Management

The BRCP monitoring program is designed to guide the collection and compilation of relevant data and information necessary to (1) demonstrate compliance with permit terms and conditions, (2) assess the effectiveness of BRCP implementation over time, and (3) ensure that the adaptive management decision-making process is informed by the best available science. The purpose of the monitoring program is to periodically assess the status of species and natural communities on BRCP conservation lands as the basis for their ongoing conservation and recovery (BRCP, Section 7.2). The monitoring process and adaptive management process are described below. For more information, see Section 7.2.2 and Section 7.3 of the BRCP, respectively.

Monitoring Requirements

Monitoring and survey information is required to demonstrate compliance with BRCP permits and to assess the effectiveness of BRCP implementation in achieving the BRCP's biological goals and objectives. The two primary types of monitoring expected are compliance monitoring and effectiveness monitoring.

Compliance monitoring ensures compliance with the terms and conditions of the BRCP and its associated permits during implementation of the covered activities. Table 5-30 of the BRCP summarizes 13 compliance monitoring actions, the responsible entity for each of these actions, the purpose of the monitoring action, and the methods and procedures for monitoring. Results of compliance monitoring may also serve toward monitoring for effectiveness. Results of compliance monitoring would be used by the BRCP Implementing Entity to determine if BRCP implementation should be adjusted under BRCP adaptive management.

Effectiveness monitoring would be conducted to assess the effectiveness of habitat restoration, enhancement, and management techniques in achieving the desired habitat conditions; to assess covered species responses; and to document progress made toward achieving the BRCP biological goals and objectives. These monitoring actions would provide the data necessary to assess the status

and trend of covered species populations at Plan Area-wide and BRCP conservation land unit-wide scales and would provide the basis for tracking progress toward achieving the biological goals and objectives. In addition, initial baseline ecological surveys would be conducted on all BRCP conservation lands; these surveys would form the basis against which the effectiveness of BRCP habitat enhancement and management actions would be measured.

Adaptive Management Purpose and Framework

The adaptive management process incorporated by the BRCP, and detailed in Section 7.3 of the BRCP, is consistent with the guidance for adaptive management provided in USFWS's and NMFS's Five-Point Policy for HCPs,⁵ the NCCPA,⁶ and DOI's Applications Guide for Adaptive Management. The USFWS and NMFS Five-Point Policy broadly defines adaptive management "...as a method for examining alternative strategies for meeting measurable biological goals and objectives, and then if necessary, adjusting future conservation management actions according to what is learned." The NCCPA defines adaptive management as "...to use the results of new information gathered through the monitoring program of the plan and from other sources to adjust management strategies and practices to assist in providing for the conservation of covered species." NCCPs must include both a monitoring program and an adaptive management program⁷ and must also provide for periodically reviewed adaptive management strategies subject to the results of monitoring efforts and other sources of new information.⁸

The BRCP adaptive management framework provides a learning-based decision-making process to ensure that progress is made toward achieving BRCP biological goals and objectives. It is anticipated that ongoing modifications to implementation of the conservation strategy will be needed as new information is developed that addresses the uncertainties regarding the nature and magnitude of the response of covered species to habitat enhancement, restoration, and management techniques. Additionally, substantially altered future conditions that may result from climate change (e.g., change in the hydrology of Plan Area watersheds, temporal shifts in the wet season, change in wildfire risk) may modify implementation needs. Therefore, adaptive management provides the BRCP Implementing Entity with the flexibility necessary to modify implementation to address uncertainties as the knowledge base regarding ecological processes, natural communities, and covered species is expanded. Consequently, the adaptive management process provides the BRCP Implementing Entity with the ability to modify conservation measures, implementation techniques, and monitoring elements (e.g., monitoring protocols, attributes and attribute criteria, metrics) of the conservation strategy as indicated by new information that will be gathered over the term of the BRCP to improve their effectiveness.

Plan Implementation

The BRCP conservation strategy would be implemented over a period of 50 years. Implementation of the BRCP would begin after the Implementing Agreement is executed and the Section 10(a)(1)(B) ITPs and NCCPA Section 2835 permit are issued. BRCP conservation measures that are independent of mitigation would be implemented throughout the 50 years. The implementation schedule, described in detail in Chapter 6, *Plan Implementation*, of the BRCP, describes a reasonable estimate

⁵ 65 FR 106, June 1, 2000.

⁶ California Fish and Game Code Sections 2800–2835.

⁷ California Fish and Game Code Section 2820[7] and [8].

⁸ California Fish and Game Code Section 2820[a][2].

of the timing and sequence for implementation of the conservation actions over the term of the BRCP.

It is expected that ecological conditions in the Plan Area may change as a result of future events and circumstances, since the implementation timeframe for the BRCP conservation strategy would be over 50 years. Chapter 6 of the BRCP details changes in circumstances that are reasonably foreseeable, outlines a process for identifying changed circumstances, and provides planned responses intended to address these events. Changed circumstances addressed by the BRCP include: floods, drought, water availability, fire, invasive species and disease, long-term changes in precipitation and temperature, toxic or hazardous substance spills, new species listing, and new designation of critical habitat. The planned responses to these events, if needed, would be covered actions by the BRCP. Examples of planned responses include: inspections of affected conservation lands within a specific time from the end of the event (e.g., 30 days); evaluation of the extent of the damage; purchasing of additional water supplies, if necessary, to maintain crops supporting habitat functions; and habitat restoration and enhanced recovery of affected habitat area.

Responsibility for implementing the BRCP would rest with the Permit Applicants. BRCP implementation would be directed by the BRCP JPA, a BRCP Implementing Entity that would be created as a new JPA among the Local Agencies specifically for BRCP implementation. The BRCP JPA would be led by a Board of Directors derived from elected officials of the member Local Agencies and would oversee implementation of the BRCP through the Executive Director of BCAG, who will serve as the Executive Director of the BRCP JPA (see BRCP Chapter 7, *Implementation Structure*, for additional detail on the organizational structure that will be established to implement the BRCP).

Costs and Funding

The cost for implementing the BRCP has been estimated for both the mitigation and conservation components of the plan (BRCP Chapter 10, *Implementation Costs and Funding Sources*). The mitigation cost component includes the costs to implement mitigation measures that address the impacts of BRCP covered activities. These costs include administration, land maintenance and management, monitoring, and adaptive management necessary to implement the mitigation measures. Total mitigation costs under the BRCP are estimated to be \$138.9 million. The conservation cost component includes the costs of all actions under the conservation strategy that are implemented to conserve natural communities and contribute to the recovery of covered species above and beyond the mitigation measures. Total conservation component costs for BRCP implementation over the 50-year BRCP term are estimated to be \$238.1 million.

Funding for BRCP implementation would come from both “local share” and “public share” sources.

- **Local Share of Funding.** The local share of implementation funding sources comprises the mitigation component of the BRCP, a portion of the land acquisition and plan administration under the conservation component of the BRCP, and part of the post-permit administration and management. The local share funding would be derived from impact fees assessed as individual projects are implemented in the Plan Area and additional monies sought from various sources to fund a portion of the conservation component.
- **Public Share of Funding.** The public share of implementation funding sources comprises all remaining actions to implement the conservation component of the BRCP not addressed by the local share. Public share funding will be derived from various federal, state, and private sources.

Aquatic Resources Permitting Strategy

BCAG is seeking a Regional General Permit (RGP), programmatic water quality certification, master lake and streambed alteration agreement, and a BRCP specific in-lieu fee (ILF) Program to satisfy federal and state regulations and conserve and preserve aquatic resources in the Plan Area. This permitting, mitigation and conservation strategy is a component of the BRCP and will address impacts to waters of the U.S. and state, including all wetlands, riparian habitat, and other waters regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB), California Department of Fish and Wildlife (CDFW), the U.S. Army Corps of Engineers (USACE) for compliance with the Clean Water Act, Porter-Cologne Water Quality Act, and state Fish and Game Code.

2.3.3 Alternative 3—Reduced Development/Reduced Fill

As with Alternative 2, this alternative consists of issuance of ITPs by USFWS, NMFS, and CDFW; approval and execution of the Implementing Agreement (IA) for the BRCP; and implementation of the BRCP by the Permit Applicants, although the BRCP would differ as described below. The Reduced Development/Reduced Fill Alternative combines the reduced development alternatives described in the Local Agencies' general plan EIRs to create a single reduced development/reduced fill footprint. Under the Local Agencies' general plan alternatives, there would be either a reduction in the development footprint for the respective jurisdiction such that the development would be concentrated closer to urban centers or a reduction in the total dwelling units and commercial/industrial square footage such that less development would occur. Summaries of each of these general plan alternatives are provided below.

- **Butte County: Concentrated Growth Alternative.** The Concentrated Growth Alternative would provide for approximately 500 more new residential units than the Butte County General Plan 2030 preferred alternative for a total of 14,200 dwelling units. This alternative includes the same amount of new industrial space and 200,000 more square feet of new commercial space. However, development would be directed toward the existing urban areas. Outlying areas are instead designated for very low-density residential, agriculture, and resource conservation. Higher density development would occur in and around the existing urban areas. Following is the approximate projected 2030 buildout of the Concentrated Growth Alternative.
 - 14,200 dwelling units.
 - 2 million square feet commercial.
 - 1.1 million square feet industrial space.
- **City of Chico: Increased Density Alternative.** The Increased Density Alternative has less development than General Plan 2030 and would not include the Bell Muir and Doe Mill/Honey Run developments (referred to as “Special Planning Area 3” in General Plan 2030). Higher density development would occur through infill and redevelopment of the 17 Opportunity Sites, and limited expansion would occur north and south in three special planning areas, with no expansion to the east or west. The Increased Density Alternative would provide for fewer new residential units (approximately 4,000) than General Plan 2030. This alternative also includes 1.0 million fewer square feet of industrial uses and a similar number of square feet of commercial uses as General Plan 2030. This alternative focuses development in targeted locations within the city. Following is the approximate projected 2030 buildout of the Increased Density Alternative.

- 59,344 dwelling units.
- 20.1 million square feet of industrial space.
- 17.8 million square feet of commercial space.
- **City of Oroville: Neighborhood Focused Growth Alternative.** The Neighborhood Focused Growth Alternative would provide for approximately 3,300 fewer new residential units than General Plan 2030. This alternative also includes 200,000 fewer square feet of industrial uses and 4.6 million fewer square feet of commercial uses. This alternative focuses development in targeted locations within the city. Land use designations in most of these areas would be modified to better improve the viability of the commercial centers by placing more people within shorter distances of retail establishments or office uses. Following is the approximate projected 2030 buildout of the Neighborhood Focused Growth Alternative.
 - 24,300 dwelling units.
 - 8.4 million square feet of industrial space.
 - 17.6 million square feet of commercial space.
- **City of Gridley: Centralized Development Alternative.** The Centralized Development Alternative assumes a reduced footprint of only 563 acres as compared to the 2030 General Plan (i.e., approximately half the acreage) and would provide for fewer new residential units (between approximately 2,600 and 3,200) than General Plan 2030. This alternative would provide for similar amounts of land available for future commercial development and industrial development as compared to the 2030 General Plan. This alternative focuses development in targeted locations within the city. Following is the approximate projected 2030 buildout of the Centralized Development Alternative.
 - 2,600–3,200 dwelling units.
 - 427 acres of industrial space.
 - 240 acres of commercial space.
- **City of Biggs: Alternative 3 – Reduced Western Expansion Alternative.** Under this alternative, the city would modify the proposed General Plan Land Use Map to preclude the inclusion of any additional lands west of the Union Pacific railroad tracks that traverse through Biggs between Seventh and Eighth Streets. This alternative would have the effect of omitting approximately 933 acres of land from the Planning Area proposed for Heavy Industrial, Light Industrial, Low Density Residential, and Agricultural Industrial land use designations.

Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint and to a permit term of 30 years. The conservation strategy would be similar to that of the BRCP because it would apply similar natural community acreage limitations. Alternative 3 would also reduce impacts on waters of the United States. It would aim to reduce the potential impacts on jurisdictional waters, including wetlands, by reducing the amount of overall development anticipated to occur within the Plan Area and by applying the acreage limitations to jurisdictional waters as described in the BRCP. This also includes reduced dredge or fill of jurisdictional waters of the United States, including wetlands, by reducing or eliminating the types of covered activities identified in the BRCP associated with bridges and transportation projects. However, though the conservation measures (and any activities undertaken by the water districts or irrigation districts) would be the same as under the proposed action, there

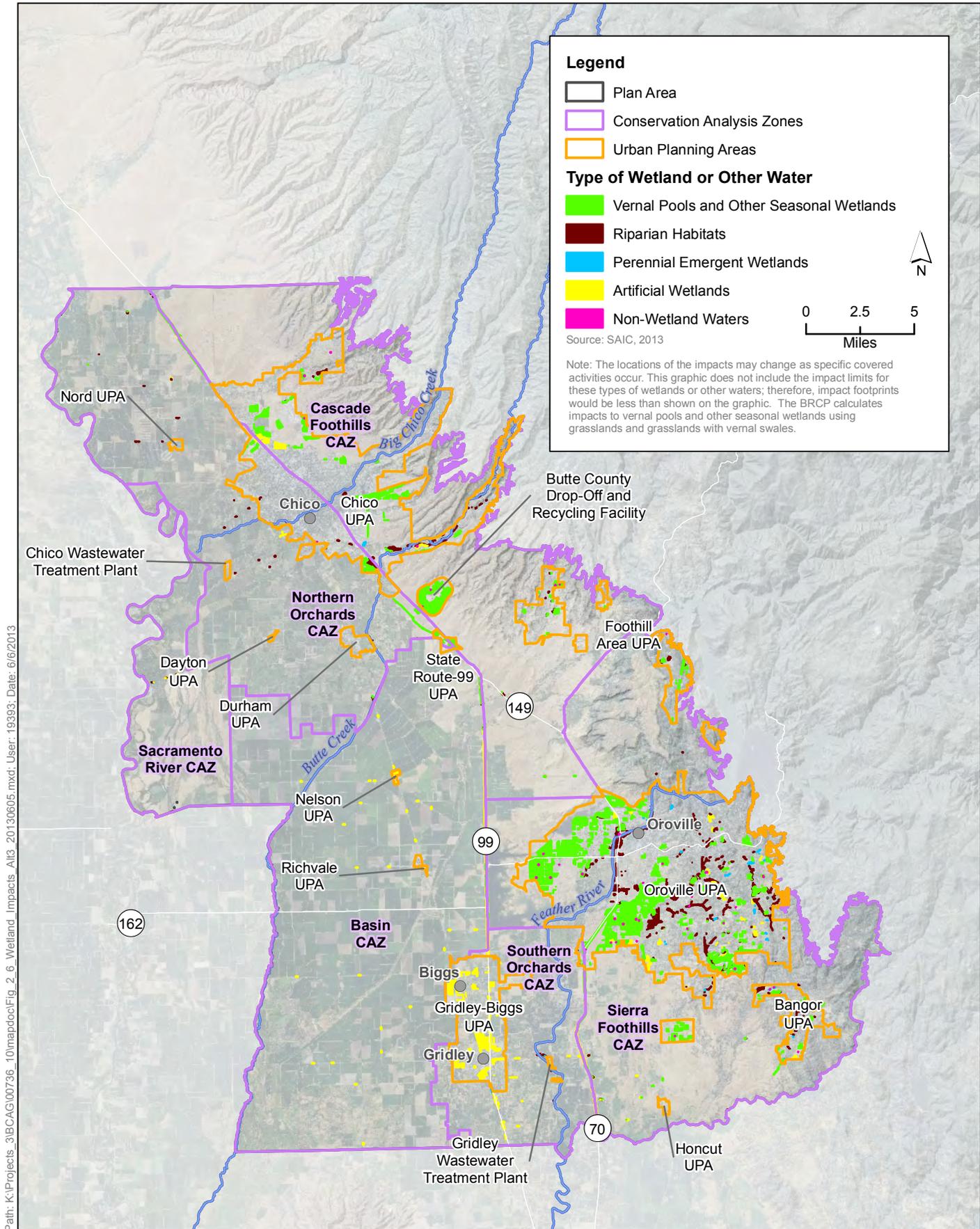
would be an overall reduced amount and extent of conserved lands under this alternative because less development would occur over a shorter time period. Table 2-10 quantifies the natural communities affected by Alternative 3 and Table 2-11 quantifies the waters of the United States affected by the alternative. Figure 2-6 identifies the general locations of these types of wetlands or other waters.

Table 2-10. Potential Natural Communities Affected by the Reduced Development/Reduced Fill Alternative (acres)

Natural Community/ Land Cover Type	Land Use Categories						Total
	Commercial	Industrial	Residential	Resource Management	Other	Public	
Oak Woodland and Savanna ^a	158	343	3,830	2	87	165	4,585
Grassland ^b	653	1,259	4,072	11	232	202	6,429
Riparian ^c	28	157	353	1	39	175	754
Wetland ^d	2	4	38	0	5	0	49
Aquatic ^e	2	0	8	0	4	55	69
Agricultural Lands ^f	24	166	643	46	293	28	1,201
Total	867	1,929	8,944	60	660	625	13,087

Assumptions:

1. If county and city land use areas overlapped, city information was selected.
 2. The Other land use category includes all land uses that did not fit within the description of the six general land use categories (i.e., agriculture, commercial, industrial, public, residential, and resource management) or were described in Table 2-1 of the BRCP.
 3. Areas from the City of Chico that were attributed as outside the sphere of influence, but within the planning area of Chico, were removed.
 4. There are a total of approximately 629 acres designated as “blank” for Butte County and the City of Chico, and this means that these acres do not have general plan land uses included in the datasets. Therefore, they are left out of the analysis. Butte County and the City of Chico are the only two general plans that have land uses that fit within the general land use category of resource management.
 5. The City of Gridley was not included in the footprint of the reduced development because GIS information was unavailable for this city. Therefore, it is incorporated qualitatively into the analysis of Alternative 3 in this EIS/EIR.
 6. In general, the Local Agencies’ general plans and Table 2-1 in the BRCP were used to match GIS data with the six general categories of land uses (i.e., agriculture, commercial, industrial, public, residential, and resource management). However, there were individual circumstances where the general plans or Table 2-1 did not describe a land use identified in the GIS data; therefore, assumptions were made on a case-by-case basis as to what one of the six general land use categories to assign the GIS data.
- ^a Includes: Blue oak savanna, Blue oak woodland, Live oak woodland, and mixed oak woodland.
- ^b Includes: Grassland and Grassland with vernal swale complex.
- ^c Includes: Cottonwood-willow and valley oak riparian forest, Willow scrub, Herbaceous riparian river bar, Dredger tailings with riparian.
- ^d Includes: Emergent wetland, Managed seasonal wetland, and Managed wetland.
- ^e Includes: Open water—all, Open water—stream channel (linear miles), Major canal, Ponds.
- ^f Includes: Rice and Irrigated pasture and irrigated cropland.



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Figure 2-6
Waters of the U.S. Potentially Impacted by Alternative 3

Table 2-11. Existing and Affected Waters of the United States under the Reduced Development/Reduced Fill Alternative in the Plan Area

Type of Wetland or Other Water	Total in the Plan Area	Alternative 3
Potential Wetlands – Vernal Pools and Other Seasonal Wetlands (acres) ^a	3,999	298
Potential Wetlands – Riparian Habitats (acres) ^b	22,149	345
Potential Wetlands – Perennial Emergent ^c	4,440	35
Potential Wetlands – Artificial Types ^d	33,815	57
Non-Wetland Waters (number of ponds) ^e	465	45
Total Waters of the United States (acres)	64,868	735

^a Acreages are based on BRCP's density assumptions detailed in Chapter 6 of the BRCP and include the following habitat types: Vernal Pools and Other Seasonal Wetlands in Grasslands with Swale Complexes, Vernal Pools and Other Seasonal Wetlands in Grasslands, Vernal Pools and Other Seasonal Wetlands associated with Streams.

^b Only portions of riparian habitats meet jurisdictional criteria under CWA Section 404, but all areas meet jurisdictional criteria under Section 1602 and include the following habitat types: Cottonwood-Willow Riparian Forest, Valley Oak Riparian Forest, Willow Scrub, Herbaceous Riparian and River Bar, Dredger Tailings with Riparian Forest and Scrub-Stream, Dredger Tailings with Riparian Forest and Scrub-Non-Stream.

^c Includes the habitat type: Emergent Wetland.

^d Based on BRCP assumptions detailed in Chapter 6 of the BRCP and includes the habitat types: Managed Wetland, Managed Seasonal Wetland, Rice –jurisdictional portion, and Irrigated pasture, cropland–jurisdictional portion.

^e Includes the habitat types: stock ponds. Open Waters, Major Canals and Rivers, Streams and Agricultural Channels have zero acres and linear miles impacted.

Alternative 3 is expected to result in a reduction of approximately 11,000 acres (50%) of potential natural communities affected as compared to the proposed action. It is expected to result in a reduction of approximately 61 acres (approximately 8%) of waters of the United States as compared to the proposed action. Table 2-12a compares the differences between the two alternatives by natural community, and Table 2-12b compares the differences between the two alternatives by waters of the United States.

Table 2-12a. Differences between the Reduced Development/Reduced Fill Alternative and the Proposed Action (acres)

	Proposed Action ^a	Alternative 3	Difference ^b
Oak Woodland and Savanna ^c	11,324	4,585	6,739
Grassland ^d	9,084	6,429	2,655
Riparian ^e	346	754	-408
Wetland ^f	48	49	-1
Aquatic ^g	0	69	-69
Agriculture ^h	3,822	1,201	2,621
Total	24,624	13,087	11,537

^a Information was taken from Table 4-5 in the BRCP.

^b Note that a negative number means an increase in acreage of impacted habitat under Alternative 3–Reduced Development/Reduced Fill.

^c Includes: Blue oak savanna, Blue oak woodland, Live oak woodland, and mixed oak woodland.

^d Includes: Grassland and Grassland with vernal swale complex.

^e Includes: Cottonwood-willow and valley oak riparian forest, Willow scrub, Herbaceous riparian river bar, Dredger tailings with riparian habitat (e.g., Forest/Scrub, Forest Scrub NSA, Sparse Herbaceous Vegetation).

^f Includes: Emergent wetland, Managed seasonal wetland, and Managed wetland.

^g Includes: Open water – all, Open water – stream channel (linear miles), Major canal, Ponds.

^h Includes: Rice and Irrigated pasture and irrigated cropland.

Table 2-12b. Differences between the Reduced Development/Reduced Fill Alternative and the Proposed Action for Waters of the United States (acres)

Type of Wetland or Other Water	Proposed Action	Alternative 3	Difference
Potential Wetlands – Vernal Pools and Other Seasonal Wetlands (acres) ^a	303	298	5
Potential Wetlands – Riparian Habitats (acres) ^b	345	345	0
Potential Wetlands – Perennial Emergent (acres) ^c	35	35	0
Potential Wetlands – Artificial Types (acres) ^d	113	57	56
Non-Wetland Waters (number of ponds) ^e	25	45	-20
Total Waters of the United States (acres)^f	796	735	61

^a Acreages are based on BRCP's density assumptions detailed in Chapter 6 of the BRCP and include the following habitat types: Vernal Pools and Other Seasonal Wetlands in Grasslands with Swale Complexes, Vernal Pools and Other Seasonal Wetlands in Grasslands, Vernal Pools and Other Seasonal Wetlands associated with Streams.

^b Only portions of riparian habitats meet jurisdictional criteria under CWA Section 404, but all areas meet jurisdictional criteria under Section 1602 and include the following habitat types: Cottonwood-Willow Riparian Forest, Valley Oak Riparian Forest, Willow Scrub, Herbaceous Riparian and River Bar, Dredger Tailings with Riparian Forest and Scrub–Stream, Dredger Tailings with Riparian Forest and Scrub–Non-Stream.

^c Includes the habitat type: Emergent Wetland.

^d Based on BRCP assumptions detailed in Chapter 6 of the BRCP and includes the habitat types: Managed Wetland, Managed Seasonal Wetland, Rice –jurisdictional portion, and Irrigated pasture, cropland–jurisdictional portion.

^e Includes the habitat types: stock ponds. Open Waters, Major Canals and Rivers, Streams and Agricultural Channels have zero acres and linear miles impacted.

^f Note that the Total Waters of the United States are presented in acres and, therefore, the Non-Wetland Waters (number of ponds) are not included in this total.

2.3.4 Alternative 4—Greater Conservation

As with Alternative 2, this alternative consists of issuance of ITPs by USFWS, NMFS, and CDFW; approval and execution of the Implementing Agreement (IA) for the BRCP; and implementation of the BRCP by the Permit Applicants, although the BRCP would differ as described below. The Greater Conservation Alternative would increase the target amount of certain natural community types to be conserved under the conservation strategy. This alternative would maintain the same Plan Area, covered species, covered activities, and conservation measures as the BRCP, but would modify the proposed conservation strategy to increase conservation of two land cover types: grasslands and rice. The increase in these land cover types, as compared to the BRCP, is expected to provide additional habitat and protection expected to exceed the needs of certain covered species (e.g., Swainson’s hawk, white-tailed kite, and giant garter snake). This alternative would increase grasslands conserved by 9,850 acres (an approximately 20% increase) and increase rice conservation by 35,310 acres (an approximately 90% increase) as compared to the proposed action. The Greater Conservation Alternative would result in approximately 51,955 and up to 78,140 total acres of grasslands and rice conservation, respectively. Table 2-13 below identifies the projected acreages for natural community acquisition targets for this alternative and the proposed action.

Table 2-13. Natural Community Acquisition Targets (Greater Conservation Alternative acres/Proposed Action acres)

Natural Community and Land Cover Type	Total Existing in Plan Area	Conservation Acquisition Zone (CAZ) Protection Targets						Total Protection Target
		Sierra Foothills	Cascade Foothills	Northern Orchards	Southern Orchards	Basin	Sacramento River	
Grassland								
Grassland	68,124	15,745/ 10,260	12,515/ 8,150	1,565	430	300	0	30,555/ 20,705
Grassland with vernal swale complex	34,110	4,820	14,960	990	0	630	0	21,400/ 21,400
<i>Subtotal</i>	102,234	20,565/ 15,080	27,475/ 23,110	2,555	430	930	0	51,955/ 42,105
Agricultural Lands								
Rice	120,316	0	0	0–2,050/ 1,865	0–1,230/ 0	0–74,655/ 35,920	0–205/ 205	0–78,140/ 37,990
Irrigated pasture and irrigated cropland	21,572	2,370/ 1,240	0	2,120/ 1,160	4,270/ 2,440	0/0	0	8,760/ 4,840
<i>Subtotal (acreage)</i>	141,889	2,370/ 1,240	0	2,120–4,170/ 3,025	4,270–5,500/ 2,440	0–74,655/ 35,920	0–205/ 205	8,760–86,900/ 42,830

Note: Only one number is shown when it is the same for both alternatives.

2.4 References

Butte County Association of Governments. 2015. *Butte Regional Conservation Plan: Balancing Growth and Conservation*. February. Chico, CA. Prepared by Science Applications International Corporation (SAIC), Sacramento, CA.

This chapter discusses common terminology used in this EIS/EIR, its organization, the approach taken to define existing conditions and analyze the effects of the permits and action alternatives. Resource discussions in Chapters 4 through 15 focus on those topical areas that have the potential to be significantly affected by the proposed action or action alternatives.

3.1 Application of NEPA and CEQA Principles and Terminology

As described in Chapters 1 and 2, NEPA and CEQA require preparation of an environmental analysis to evaluate the potential environmental effects of proposed actions (and alternatives to those actions) that are subject to governmental approval. While many concepts are common to NEPA and CEQA, there are several differences between the two in terminology, procedures, environmental document content, and substantive mandates to protect the environment. For this EIS/EIR, the more rigorous of the two laws was applied in cases in which NEPA and CEQA differ. Table 3-1 compares NEPA and CEQA terminology.

Table 3-1. Correlated NEPA and CEQA Terminology

NEPA Term	CEQA Term
Environmental Impact Statement	Environmental Impact Report
Notice of Intent	Notice of Preparation
EPA Filing/Federal Register Notice and Agency/ Public Review (also known as a Notice of Availability)	Notice of Completion/Notice of Availability
Record of Decision	Notice of Determination/Findings/Statement of Overriding Considerations
Cooperating Agency	Responsible Agency
Purpose and Need; Objectives and Constraints	Project Objectives
Proposed Action and Alternatives	Proposed Project and Alternatives
No Action Alternative	No Project Alternative
Environmental Consequences	Environmental Impacts
Affected Environment	Environmental Setting
Although none are specified in NEPA, CEQ regulations require an EIS to identify the direct and indirect effects “and their significance” (40 CFR 1502.16)	Threshold of Significance/Significant Impacts

3.2 Resource Topics Considered

Resource considerations in this EIS/EIR were derived from the CEQ regulations for implementing NEPA, Appendix G of the State CEQA Guidelines, and input received from the public during the scoping period. Based on this information, BCAG and USFWS have determined that the proposed action or action alternatives could affect the following resources.

- Chapter 4—Agricultural and Forestry Resources
- Chapter 5—Air Quality and Climate Change
- Chapter 6—Biological Resources
- Chapter 7—Cultural Resources
- Chapter 8—Geology, Soils, and Mineral Resources, and Paleontological Resources
- Chapter 9—Hydrology, Water Resources, and Water Quality
- Chapter 10—Land Use Planning and Consistency
- Chapter 11—Noise
- Chapter 12—Public Services and Public Utilities
- Chapter 13—Recreation, Open Space, and Visual Resources
- Chapter 14—Population and Housing, Socioeconomics, and Environmental Justice
- Chapter 15—Transportation

3.3 Resource Chapter Organization and NEPA/CEQA Requirements

Each resource chapter of this EIS/EIR describes the affected environment (existing conditions), explains the methodology and significance criteria considered, and discusses the environmental impacts and mitigation measures. Specifically, Chapters 4 through 15 are organized into three primary sections: Affected Environment, Environmental Consequences, and Cumulative Impacts, as shown below.

- Affected Environment
 - Regulatory Setting
 - Environmental Setting
- Environmental Consequences
 - Methods for Impact Analysis
 - Significance Criteria
 - Impacts and Mitigation
 - Cumulative Impacts

CEQA and NEPA allow incorporation by reference of existing documents used to prepare each resource chapter. This EIS/EIR incorporates by reference information or analysis from several existing plans and supporting environmental documents that were developed concurrently with the BRCP planning process. As stipulated in the State CEQA Guidelines 15150(c), where an EIR uses incorporation by reference, the incorporated part of the referenced document shall be briefly summarized or described. Similar requirements are provided by NEPA (40 CFR 1502.21). The existing plans and supporting environmental documents that are incorporated by reference are listed below. In addition, the impacts and mitigation measures identified in the Local Agencies' general plan EIRs are compiled in Appendix C.

- The *Butte County General Plan 2030* (County General Plan 2030) was adopted in 2010 by the Butte County Board of Supervisors. The County GP 2030 was developed in a manner that anticipates the approval and implementation of the BRCP and its incorporation into the general plan's Conservation and Open Space Element. The County GP 2030 is a comprehensive update of the Butte County General Plan. This includes the Land Use Element, Housing Element, Economic Development Element, Agricultural Element, Water Resources Element, Circulation Element, Conservation and Open Space Element, Health and Safety Element, Public Facilities and Services Element, and the Area and Neighborhood Plans Element (Butte County 2012a).
- The *Butte County General Plan 2030 Final EIR* (County General Plan EIR) was certified in October, 2010, by the Butte County Board of Supervisors (SCH No. 2008092062) (Butte County 2010).
- The *Final Supplemental EIR* (SEIR) for a proposed general plan amendment (GPA) to the County GP 2030 and a zoning ordinance update was released in September 2012 (Butte County 2012b).
- The *City of Oroville's 2030 General Plan* was adopted in June 2009 by the Oroville City Council (City of Oroville 2009a). The plan provides the fundamental basis for the City's land use, development, and conservation policy, and represents the basic community values, ideals, and aspirations that will govern the city's growth through 2030 (CEQANet 2013a). This general plan addresses all aspects of development, including: land use, community character, circulation and transportation, open space, natural resources and conservation, public facilities and services, safety, and noise (CEQANet 2013a).
- The *City of Oroville's 2030 Final EIR* was adopted in June 2009 by the Oroville City Council (SCH No. 2008022024) (City of Oroville 2009b).
- The *City of Chico 2030 General Plan* was adopted in April 2011 by the Chico City Council (City of Chico 2011a). The plan is a comprehensive update of the existing 1994 General Plan (CEQANet 2013b). The 2030 General Plan includes the seven state-required elements of a general plan (Land Use, Transportation, Housing, Open Space, Noise, Safety, and Conservation), as well as the following additional elements: Sustainability, Downtown, Community Design, Parks, Public Facilities and Services, Cultural Resources/Historic Preservation, and Economic Development (CEQANet 2013b).
- The *City of Chico 2030 General Plan Final EIR* was adopted in April 2011 by the Chico City Council (SCH No. 2008122038) (City of Chico 2011b).
- The *City of Gridley 2030 General Plan* was adopted in January 2010 by the Gridley City Council (City of Gridley 2010). Full implementation of the general plan could result in: the construction of up to 3,850 to 4,700 housing units; additional population growth of up to 9,000 to 12,000 people; addition of up to 1 to 1.3 million square feet of commercial building space; addition of up to 3.2 to 4 million square feet of building space for industrial, light industrial, and agricultural processing

uses; parks; schools; open space for conservation, buffering and drainage, and recreation; and other land uses (CEQANet 2013c).

- The *City of Gridley 2030 General Plan Final EIR* was adopted in January 2010 by the Gridley City Council (SCH No. 2008072007) (City of Gridley 2009).
- The *City of Biggs 2030 General Plan* was finalized in March 2014. Each general plan element contains a brief discussion of the legal requirements; goals, policies, and actions to address required topics; and narrative text, as necessary, to provide understanding of the issues addressed. Goals state an ideal resolution of the issue under consideration. The plan has four main purposes: (1) to enable the Biggs Planning Commission and City Council to reach agreement on long-range development policies, (2) to provide a basis for judging whether specific private development proposals and public projects are in harmony with City policies, (3) to allow other public agencies and private developers to design projects that are consistent with City policies or to seek changes in those policies through the process of amending the General Plan, and (4) to provide an agreement between the City and outside agencies for development in unincorporated portions of the planning area (City of Biggs 2014a; CEQANet 2013d).
- The *City of Biggs General Plan Draft EIR* was released in October 2013 (SHC No. 2012072025) (CEQANet 2013d). The final EIR was published in March 2014 (City of Biggs 2014b).

A BRCP biological constraints map was used to inform the general plan updates and to develop alternatives that avoided and minimized impacts of general plan actions on sensitive habitats supporting covered species. These preferred alternatives were incorporated into the BRCP covered activities.

3.3.1 Affected Environment

The affected environment section in Chapters 4 through 15 establishes the baseline for that resource. Under CEQA, the baseline for assessing significance of impacts of the proposed or alternative actions is normally the environmental setting, or existing conditions, at the time an NOP is issued (State CEQA Guidelines Section 15125[a]). The word *normally* in this context indicates that CEQA lead agencies have the discretion, where appropriate, to fully or partially update baseline conditions beyond the time of issuance of the NOP up until the time of project approval. The baseline is developed to assess the significance of impacts of the proposed or alternative actions in relation to the existing conditions at the time of the NOP. Neither NEPA nor the CEQ Regulations for implementing NEPA contain a specific directive for using a baseline for determining an action's significant effects on the quality of the human environment. However, the alternatives should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options for the decision maker and the public (40 CFR 1502.14). Therefore, the point of measurement for determining impacts under NEPA for the proposed action and action alternatives is the same as the CEQA baseline.

For the purposes of this EIS/EIR, one baseline is used, and the assumptions include facilities and ongoing programs that existed as of January 9, 2013 (publication date of the most recent NOP and NOI to prepare this EIS/EIR) that could affect or could be affected by implementation of the proposed action or alternatives.

The No Action Alternative differs from the baseline in that, as described in Chapter 2, *Proposed Action and Alternatives*, the No Action Alternative assumes continuation of existing plans, policies, and

operations, meaning, for instance, that all general plans would be fully implemented as described in the EIRs for those plans incorporated by reference in this EIS/EIR. The No Action Alternative incorporates programs adopted during the early stages of development of this EIS/EIR, facilities that are permitted or under construction during the early stages of development of this EIS/EIR, and projects that are permitted or are assumed to be constructed by 2035, which encompasses the planning horizon for many of the general plans and the RTP in the Plan Area.

Regulatory Setting

The regulatory setting section in Chapters 4 through 15 describes the laws, regulations, and policies that affect the resource or the assessment of impacts on the specific resource. The section establishes the regulatory framework for the analysis of each resource. Regulations that apply to all resource topics, including the ESA, NCCPA, NEPA, and CEQA, are described in Chapters 1 and 2.

Environmental Setting

The environmental setting section in Chapters 4 through 15 characterizes the existing physical environment for the specific resource and describes historic changes and trends affecting it. Existing information is used, when available, to describe baseline for each resource. Where possible, this information is supplemented through site-specific assessment(s). In addition, this section may define resource-specific study areas that are within the overall Plan Area.

3.3.2 Environmental Consequences

Methods for Impact Analysis

Chapters 4 through 15 each include a description of the resource-specific methodology used to identify and assess the potential environmental impacts that would result from implementation of the proposed action or alternative actions.

Significance Criteria

The significance criteria section in Chapters 4 through 15 describes thresholds of significance and other criteria to determine the significance of impacts. The thresholds and criteria for determining the significance of impacts for this analysis are based on the Environmental Checklist in Appendix G of the State CEQA Guidelines and other resource-specific sources as described in each chapter. The thresholds and criteria derived from the checklist have been modified as appropriate to meet the circumstances of the alternatives (Cal. Code Regs., tit. 23, Section 3777, subd. [a][2]).

Impacts and Mitigation

Impact Analysis and Determination

Chapters 4 through 15 each include an evaluation of the direct and reasonably foreseeable indirect impacts associated with implementation of the proposed action or action alternatives. Under NEPA, the purpose of an EIS is to describe and disclose the impacts of the alternatives. Under CEQA, however, the significance of the impact needs to be described. A significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in the environment (PRC Section 21068). Therefore, to facilitate both CEQA and NEPA reviews, the

Environmental Consequences sections in Chapters 4 through 15 document and describe potential resource-specific impacts, including a threshold of significance (to satisfy CEQA), mitigation that would reduce significant impacts, and a statement of each impact's significance before and after mitigation. The potential impact findings used in this document are defined below.

- **No Impact.** This impact would cause no discernible change in the environment as measured by the applicable significance criteria; therefore, no mitigation would be required.
- **Less than Significant.** This impact would cause no substantial adverse change in the environment as measured by the applicable significance criteria; therefore, no mitigation would be required.
- **Significant.** This impact would cause a substantial adverse change in the physical conditions of the environment. Impacts determined to be significant based on the applicable significance criteria fall into two categories: (1) those impacts for which there is feasible mitigation available that would avoid or reduce the environmental impacts to less-than-significant levels, and (2) those impacts for which there is either no feasible mitigation available or for which, even with implementation of feasible mitigation measures, there would remain a significant impact on the environment. Those impacts that cannot be reduced to a less-than-significant level by mitigation are identified as significant and unavoidable.
- **Significant and Unavoidable.** This impact would cause a substantial adverse change in the environment and cannot be avoided or mitigated to a less-than-significant level if the proposed action is implemented. Even if the impact finding is still considered significant with the application of mitigation, the applicant is obligated to incorporate all feasible measures to reduce the severity of the impact.

Throughout this EIS/EIR, impacts are identified as *temporary* or *permanent* direct effects. These terms apply differently to different resources and are defined, where relevant, in each individual resource chapter. In some cases, impacts are treated as direct and permanent even though the impact mechanism would end following construction. For example, impacts on terrestrial biological resources that would end following construction activities are nonetheless treated as direct and permanent impacts for the purposes of impact analysis. Such a definition represents a conservative characterization of the impact. For other resources, however, such as noise, when construction ceases, so do related impacts associated with construction. In these cases, impacts are characterized as direct and temporary.

Impacts are also characterized as *indirect*. Indirect impacts are a secondary consequence of activities that may occur later in time or are farther removed in distance from the direct effects of the activities.

Chapter 16, *Other NEPA and CEQA Required Analyses*, addresses significant irreversible and irretrievable changes, short-term uses versus long-term productivity, selection of the environmentally superior/preferable alternatives, and a summary of significant and unavoidable impacts under CEQA.

Mitigation Measures

Specific measures are proposed in this EIS/EIR, when necessary, to avoid, reduce, minimize, or compensate for adverse environmental effects of the proposed action or action alternatives. The term *mitigation* is described for each resource and designates measures required to reduce residual environmental impacts after considering the application of all conservation measures and avoidance

and minimization measures included in the BRCP. Because future development under the Local Agencies' general plans is a component of the covered activities, the indirect effects of each covered activity are assessed using the EIRs for those general plans. As described above, the Local Agencies' general plan EIRs are incorporated by reference in this document, including mitigation measures identified in the general plan EIRs to reduce impacts identified in those EIRs. These mitigation measures are expected to apply to all covered activities unless otherwise noted. Activities performed by Caltrans or the water and irrigation districts would not be subject to the general plan EIR mitigation measures.

Mitigation is also presented to meet CEQA's specific requirement that, whenever possible, agency decision makers adopt feasible mitigation to reduce a project's significant impacts to a less-than-significant level. Although NEPA does not impose a similar procedural obligation on federal agencies as CEQA requires, the practice to adopt feasible mitigation whenever possible to reduce a project's significant impact, is consistent with NEPA's intent that mitigation be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated.

Mitigation measures included in this EIS/EIR are considered to be potentially feasible by the authors of the document; however, the ultimate determination of feasibility can be made only by agency decision makers. This EIS/EIR addresses whether mitigation presented would reduce an impact to a less-than-significant level, based on the thresholds of significance presented in each resource chapter.

Cumulative Impacts

Under CEQA, cumulative impacts are "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines Section 15355; Public Res. Code Section 21083[b]). CEQ's regulations for implementing NEPA define a cumulative effect as

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR Section 1508.7.)

The focus of the cumulative impacts section for each resource in this EIS/EIR is whether the proposed action's incremental contribution to any significant cumulative impact is cumulatively considerable and, thus, significant in and of itself (State CEQA Guidelines Section 15065[a][3]).

For this EIS/EIR, cumulative impacts were identified based on: (1) information extracted from existing environmental documents or studies for the resource categories potentially affected by each project, (2) investigation of future project plans by other state and federal agencies and private entities, and (3) knowledge of expected effects of similar projects (State CEQA Guidelines Section 15130, subd. [a][1]).

Past and Present Actions in the Plan Area

The description of the affected environment in Chapters 4 through 15 is a product of past and ongoing actions that have shaped environmental conditions in the region. This section provides a brief summary of these past and ongoing actions that have contributed to (and continue to contribute to) cumulative impacts. Because some ongoing actions are covered activities under the proposed

action, only reasonably foreseeable future actions not included as part of the proposed action are described below.

Agriculture and Urban Development

Land conversion in the Plan Area includes the conversion of natural lands to farmland, the subsequent conversion of farmland to urban and rural residential uses, and the direct conversion of natural lands to urban and rural residential uses. Land conversion can also include conversion of farmland back into natural lands, although this is less common. Rice production dominates the southwestern section of the Plan Area. To the north, rice production ceases, and orchards become the dominant land cover type.

Agricultural lands in the Central Valley represent an altered landscape that retains little resemblance to the historical (pre-European settlement) condition. Formerly consisting of extensive wetlands, open grasslands, broad riparian systems, and oak woodlands, the conversion to agriculture has removed most of these native habitats. However, while generally supporting a less diverse community of wildlife compared with most native habitats, some agricultural systems, if managed properly, can continue to support abundant wildlife and provide essential breeding, foraging, and roosting habitat for many resident and migrant wildlife species. The development of orchards and row crops has reduced or eliminated habitat for many species (especially plant species) whose habitat requirements are not compatible with these agricultural landscapes. In addition, the land disturbances associated with farming have contributed to sedimentation of waterways, and use of fertilizers and pesticides (including rodenticides) also have contributed to water pollution and may have contributed (directly and indirectly) to species mortality.

Although farming has resulted in adverse effects on natural conditions in the Central Valley, farmland and cropland is used as habitat for various species. These species include giant garter snake (rice and agricultural ditches), western pond turtle (agricultural ditches and canals), Swainson's hawk (foraging in hay, grain, and row crops), burrowing owl (various agricultural types with ground squirrel burrows), white-tailed kite (foraging in hay and grain), and tricolored black-bird (foraging in hay and grain). Similarly, grazing has altered habitat conditions for many species and has contributed to water pollution, but appropriately managed grazing and rangeland can be compatible with the habitat needs of these species and several vernal pool species. Farming and grazing are expected to continue in and around portions of the Plan Area currently used for agriculture. Farmlands are subject to continuing shifts in crop types depending on various factors, including local, national, and global economic conditions. Shifts in farmland uses are not proposed as covered activities but are reasonably expected to occur in the future. It is not possible, however, to predict how crops may change over the 50-year permit term.

A substantial amount of farmland and grazing land in the Plan Area has been converted to urban development and rural residential development over the past several decades. This has resulted in a further decrease in habitat because the habitat conditions provided by farmlands and grazing lands have been lost. Urbanization affected plants and wildlife through nitrogen deposition, erosion and sedimentation, pollution of waterways, and disruption of movement habitat linkages.

Infrastructure Development and Operation

Agricultural and urban development in the Plan Area has been accompanied by the development of infrastructure to support these land uses. Some of the major infrastructure development activities and general effects on species and their habitats are described below.

- **Water Supply Development.** There are numerous surface water diversions in the Plan Area from the major rivers and creeks, such as the Sacramento and Feather Rivers. The majority of the surface water supply used by Butte County residents and businesses originates in the Feather River watershed and is stored in Lake Oroville as part of the State Water Project (SWP). Surface water diversions serve approximately 69% of the county's water needs; the remainder is supplemented by groundwater. Approximately 75% of the county's residential water supply is extracted from groundwater (Butte County 2010). Past and present projects have also transferred water out of the county. For example, both the Butte County-Westside Districts Multi-Year State Water Project Table A Water Transfer (NorthStar Environmental 2012) and the Butte Water District 2012 Water Transfer Program (Butte Water District 2012) committed to transfer a certain amount of either surface water or groundwater out of Butte County to other counties and water purveyors in California. It is anticipated these types of water transfers would continue in the future.

There are several major dams within and upstream of the Plan Area that allow for storage of upstream runoff for release during the summer season in and downstream of the Plan Area. These include Paradise Dam and Oroville Dam on the Feather River, both outside of the Plan Area to the east, and Thermalito Diversion Dam, also on the Feather River, within the Plan Area. The offstream reservoirs, Thermalito Forebay, and Thermalito Afterbay serve hydroelectric power needs and agricultural irrigation and recreation purposes, respectively. Operations of Lake Oroville and Oroville Dam dictate flows on the Lower Feather River. Prior to the development of the Oroville Dam, the County negotiated with the State of California to receive an allocation of water for growth and future needs within the county as a SWP contractor. These types of water supply projects completely blocked upstream passage of anadromous Central Valley spring-run Chinook salmon, Central Valley fall-run Chinook salmon, and California Central Valley steelhead, causing these runs to be completely altered. These hydropower projects also substantially changed flows and temperatures in waterways, such as the Feather River, downstream of the dams. The hydrologic changes altered the geomorphology of the river such that natural recruitment of wood and gravels was severely altered, creating poor quality riparian habitat conditions downstream of the dams. Over the past 15 years, concerted efforts to restore Butte Creek for listed salmonids have included the removal of many dams and water diversions along the length of Butte Creek in an effort to restore fish passage for CV spring-run Chinook salmon and CCV steelhead. These improvements have reduced juvenile entrainment and restored flows to areas where fish passage was an issue.

- **Restoration Projects.** Several restoration programs, such as the CalFed Ecosystem Restoration Program, have worked to restore habitat along Central Valley rivers. The multiple goals and actions of this program support the recovery of at-risk native species and other species. These types of restoration projects involve the rehabilitation of natural processes related to hydrology, stream channels, sediment, floodplains, and ecosystem water quality and develop habitat management and restoration actions, including restoration of river corridors, reconstruction of channel floodplain interaction, and restoration of aquatic habitat.
- **Flood Control Projects.** The levee system and most of the larger dams provide flood protection for farmlands in Sacramento Valley communities. Extensive work has been undertaken to bolster flood protection for urban areas, which require a higher level of protection than agricultural areas. Past and present flood control projects within the Plan Area include the following.
 - **Central Valley Flood Protection Act (2009).** DWR prepared the Central Valley Flood Protection Plan (CVFPP), which was adopted in June 2012. The CVFPP provides a

comprehensive framework for system-wide flood management and flood-risk reduction in the Central Valley. The CVFPA also establishes a new standard of 200-year flood protection for urban areas in the Central Valley and requires this standard to be achieved by 2025.

- **Sacramento River Flood Control System Evaluation.** USACE and the State of California, along with local partners, completed a comprehensive evaluation of the Sacramento River Flood Control Program and initiated a flood-risk management program aimed at repairing, raising, and strengthening urban levees, among other activities. This effort, known as the Sacramento River Flood Control System Evaluation (commonly referred to as System Evaluation) resulted in the repair of more than 70 miles of deficient levees by USACE. To date, not all the authorized repairs have been completed, but efforts are continuing.
- **Sacramento–San Joaquin Rivers Comprehensive Study.** The State of California and USACE formulated comprehensive plans for flood-risk reduction and environmental restoration following the 1997 flood. The study did result in a new set of engineering criteria for the design and evaluation of urban levees and a greatly expanded scope and cost for the ongoing urban levee improvement efforts on the Sacramento and American Rivers. The Central Valley Integrated Flood Management Study (CVIFMS) is a continuation of the Sacramento–San Joaquin Rivers Comprehensive Study in which USACE and the State are defining a long-range program for the Sacramento and San Joaquin River Basins and the corresponding level of federal participation. This program will identify opportunities to reduce flood risk by improving the flood capacity of the system while restoring and protecting floodplain and environmental features, including wetlands and other fish and wildlife habitat.
- **Sacramento River Bank Protection Project.** USACE is responsible for implementation of the Sacramento River Bank Protection Project (SRBPP) in conjunction with its nonfederal partner, Central Valley Flood Protection Bureau (CVFPB). The SRBPP is a continuing construction project to provide existing levee and flood control facilities with protection from erosion. To date, work has been carried out in two phases to protect over 800,000 feet of levees.
- **Sutter Basin Project.** The Sutter Basin Project, part of which is included in the Plan Area, is undergoing a feasibility study by USACE (U.S. Army Corps of Engineers 2011), Sacramento District, to determine federal interest in implementing a flood-risk management (FRM) project. The feasibility study will evaluate structural and nonstructural FRM measures, including improvements to existing levees; construction of new levees; and other storage, conveyance, and nonstructural options.

These projects generally have degraded instream and nearby wetland and riparian communities in the Plan Area but may also have provided additional water in reservoirs to maintain instream flows in the summer. Efforts have been underway to upgrade flood control systems while restoring natural stream channels to the extent possible along the Sacramento and Feather Rivers.

Park Acquisition and Management

A substantial amount of land preservation has occurred along with the urbanization of the Plan Area. In addition to urban parks within the planning limits of urban growth, notable regional park areas and other protected lands are as follows.

- John Bechtel Trust

- Bidwell Park
- Sacramento River National Wildlife Refuge
- Vina Plains Preserve
- Sacramento River Wildlife Area
- Rancho Llano Seco
- Rancho Esquon
- Dove Ridge
- Table Mountain
- Highway 149 Mitigation Lands
- Oroville Wildlife Area
- Gray Lodge Waterfowl Management Area
- Upper Butte Wildlife Area

These parks and wildlife refuges preserve habitat in the Plan Area and benefit many covered species.

Reasonably Foreseeable Projects in the Plan Area

Reasonably foreseeable projects in the Plan Area that could affect covered species would be new projects not considered part of the proposed action or action alternatives. Existing ongoing operations or maintenance of facilities in the Plan Area by agencies not participating in BRCP would continue as is and would be considered part of the baseline. The following general categories of projects are considered new and, therefore, are considered reasonably foreseeable projects to be addressed in the analysis of cumulative projects for each relevant resource topic.

- Construction and operation of new flood control facilities on the Sacramento River under the control of USACE that may be developed as a result of the flood programs discussed above (e.g., Sacramento River Bank Protection Project [U.S. Army Corps of Engineers 2009], Sacramento River Flood Control System Evaluation (U.S. Army Corps of Engineers 2012), Sutter Basin Project [U.S. Army Corps of Engineers 2011]) or new programs, such as the Feather River West Levee Project (Sutter Butte Flood Control Agency 2013), which would install flood-risk reduction measures along the west levee of the Feather River (e.g., building berms and putting in slurry walls to reduce and minimize under and through seepage).
- Construction and operation of new flood control facilities on the Feather River under control of DWR (e.g., activities under the Central Valley Flood Protection Act, including the specific conservation strategies and actions [California Department of Water Resources 2012]).
- Operations of new water control facilities for water conveyance or flood management under the control or responsibility of USACE, including in-channel construction and operation of new water diversion facilities.
- Operations of new water control facilities for water conveyance or flood management under the control or responsibility of DWR, including in-channel construction and operation of new water diversion facilities.

- Emergency activities not defined as “changed circumstances” by the BRCP (Butte County Association of Governments 2015).
- Ongoing agricultural land conversions (e.g., conversion of cropland to orchard).
- Water transfers by various water districts within the county to water purveyors in other California counties.

The following specific projects are considered new and therefore are considered reasonably foreseeable projects to be addressed in the resource-specific cumulative project analysis.

- **FERC relicense to reoperate Oroville hydroelectric facilities.** The ongoing effort of DWR to relicense the Oroville Dam operations includes a BO from USFWS and NMFS issued in 2013 (California Department of Water Resources 2008).
- **Yuba Sutter HCP/NCCP.** This HCP/NCCP provides for the conservation and management of covered state and federal species within approximately 470,000 acres in Yuba and Sutter Counties. The parties involved include the County of Yuba, County of Sutter, Yuba City, City of Live Oak, City of Wheatland, CDFW, and USFWS. Although a draft document is not currently available, a Planning Agreement was drafted and signed by the parties in November 2011 (California Department of Fish and Game 2011).

Methods for Determining Cumulative Effects

Each resource chapter contains an analysis of the cumulative effects specific to that resource that would potentially result due to implementation of the proposed action or action alternatives. Potential cumulative effects associated with implementation of the proposed action or action alternatives are analyzed both quantitatively and qualitatively in this EIS/EIR. In many cases, the resource-specific cumulative analysis is primarily qualitative and considers the contribution of the proposed action or action alternatives to other programs, projects, and policies. As provided for under CEQA (14 CCR 15130[b]) and consistent with NEPA (40 CFR 1508.7), the analysis of cumulative impacts is evaluated at a level of detail sufficient for the Lead Agencies to use as a reasonable basis for decision making in selecting between the alternatives.

3.4 Approach to Analyzing Alternatives Considered

As required by CEQA and NEPA, a no action alternative must be described and evaluated in an EIS/EIR. Additionally, the proposed action alternative must be described and evaluated. The general approach to analyzing each of these alternatives in Chapters 4 through 15 of this EIS/EIR is discussed below.

3.4.1 Alternative 1—No Action (No Plan Implementation)

The No Action Alternative (Alternative 1) analysis in each resource chapter evaluates the expected changes to the resource in the absence of the proposed action. This analysis generally follows a 50-year study period to correspond with the permit term under the proposed action. As described in Chapter 2, *Proposed Action and Alternatives*, Alternative 1 encompasses most of the same activities that would be covered activities under the proposed action. However, Alternative 1 analysis would consider biological resources differently, as outlined below.

- Biological resource impacts would be considered only for projects with discretionary action by one of the Local Agencies or with a potential to adversely affect listed species (i.e., would require consultation with USFWS, NMFS, and/or CDFW).
- Biological resource impacts would be considered on a project-by-project basis, with no regional framework for impact avoidance and minimization.
- Biological resource mitigation would be considered on a project-by-project basis, with various types of mitigation measures, developed independently for each project, including compensatory mitigation in offsite areas. There would be no regional framework for conservation of covered species or natural communities or preservation of habitat linkages.

Alternative 1 includes reasonably foreseeable activities in the Plan Area associated with urbanization and associated infrastructure development, operation, and maintenance included in the various planning documents of the Local Agencies. The general plan EIRs analyzed these activities, and Alternative 1 includes these analyses by incorporating by reference and carries these conclusions forward. Any mitigation included in these EIRs is incorporated by reference into the Alternative 1 analysis. In addition, typical best management practices (BMPs) used during construction by Caltrans are also incorporated in Alternative 1, as these would occur whether or not the BRCP were to be approved. The BMPs are summarized in Appendix D. The land use changes associated with these activities would have various effects on each of the resources considered in this EIS/EIR, including direct and indirect effects, temporary effects associated with construction, and long-term effects of operation and maintenance. Conclusions about the significance of these impacts are based on the extent of the expected land use changes and the adequacy of the regulatory framework (e.g., local regulations and requirements) to provide effective mitigation.

3.4.2 Alternative 2—Proposed Action Alternative

The proposed action (Alternative 2) adds a regional framework for biological resource impact avoidance, minimization, and mitigation, and natural community conservation. This is provided by the BRCP and implemented as a result of wildlife agencies issuing permit(s). The impact analysis of Alternative 2 focuses on how permit issuance could affect a resource differently than Alternative 1. The analysis was based on the following.

- The BRCP conservation strategy would apply to all covered activities.
- All covered activities would be implemented using the avoidance and minimization measures summarized in Chapter 2, Section 2.3.2, *Alternative 2—Proposed Action*, of this EIS/EIR.
- Alternative 2 would include the acquisition and enhancement of a large, connected conservation lands system, with coordinated management for the benefit of the covered species. This system would have a substantially larger footprint (126,345 acres of land targeted for protection) compared to the (unquantified) system of independent mitigation sites under Alternative 1.
- Acquisition and enhancement of the conservation lands system would be dispersed throughout the Plan Area but would be directed toward the CAZs shown in Figure 2-1.
- Activities on the conservation lands system would be consistent with the conservation measures described in the conservation strategy.

Unless affected by implementation of the proposed BRCP, impacts of Alternative 1 would also occur under Alternative 2. This is because Alternative 1 encompasses the same urbanization and

infrastructure development activities that are identified as covered activities under Alternative 2. Therefore, the analysis in the BRCP addresses most of the reasonably foreseeable activities in the Plan Area associated with urbanization and associated infrastructure development, operation, and maintenance as performed by the designated Permit Applicants and uses the analysis in the general plan EIRs accordingly. The analysis of Alternative 2 also describes how the general concepts identified in the conservation strategy for biological resource mitigation could affect each of the individual resources considered since the conservation strategy is part of Alternative 2. Thus, the analysis of the BRCP focuses on the consequences of issuing the ITPs. The BRCP is based on extensive consultation with the Permit Applicants and wildlife agencies resulting in a detailed database of activities that allows for a quantitative analysis of anticipated changes in land uses as a result of activities under Alternative 1 (i.e., covered activities under the BRCP) and the conservation strategy of the BRCP. The land use changes associated with these activities would have various effects on each of the resources considered in the BRCP and this EIS/EIR, including direct and indirect effects, temporary effects associated with construction, and long-term effects of operation and maintenance. Conclusions about the significance of these impacts are based on the extent of the expected land use changes and the adequacy of the regulatory framework (e.g., local regulations and requirements) to provide effective mitigation.

3.4.3 Alternatives 3 and 4—Other Action Alternatives

The other action alternatives (Alternatives 3 and 4) would consist of modifications to the regional framework for biological resource impact avoidance, minimization, and mitigation and for natural community conservation through various measures, as described in Chapter 2, *Proposed Action and Alternatives*. Alternatives 3 and 4 would likely result in wildlife agencies issuing permit(s), similar to the proposed action. Therefore, the impact analysis of Alternatives 3 and 4 focuses on how permit issuance could affect a resource. The land use changes associated with activities described in Chapter 2 for these alternatives would have various effects on each of the resources considered in the BRCP and this EIS/EIR, including direct and indirect effects, temporary effects associated with construction, and long-term effects of operation and maintenance. Conclusions about the significance of these impacts are based on the extent of the expected land use changes and the adequacy of the existing regulatory framework to provide effective mitigation.

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4.1 Affected Environment

This section describes the regulatory and physical environmental setting for agricultural resources in the Plan Area. Because the Plan Area does not extend above the elevation marking the boundary of oak woodland savannah, the Plan is not expected to result in impacts on timber-producing forests; consequently, forestry resources are not discussed further in this chapter.

4.1.1 Regulatory Setting

Federal

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) of 1984 requires federal agencies to consider how their activities or responsibilities that involve financing or assisting construction of improvement projects, or acquiring, managing, or disposing of federal land and facilities may affect farmland. This act does not apply to projects related to federal permits or licensing; therefore, it is not applicable to the BRCP.

State

Farmland Mapping and Monitoring Program

The Department of Conservation (DOC) has the primary responsibility for reporting statewide farmland data and trends. Under its Farmland Mapping and Monitoring Program (FMMP), DOC classifies farmlands using a system that combines technical soil ratings and current land use. Descriptions of the FMMP categories are presented in Table 4-1. The minimum mapping unit for all agricultural land categories except Grazing Land is 10 acres. The minimum mapping unit for Grazing Land is 40 acres. The FMMP categorizes and maps Important Farmlands every 2 years on the basis of information from local agencies. Counties may, at their discretion, establish criteria for the designation of Farmland of Local Importance. Note that Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are considered especially important agricultural resources. They are often referred to collectively as *important farmland*.

Table 4-1. Important Farmland Category Definitions

Farmland Category	Definition
Agricultural Lands	
Prime Farmland	Prime Farmland is land that has the best combination of physical and chemical characteristics able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
Farmland of Statewide Importance	This land is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture. Farmland of Statewide Importance must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
Unique Farmland	This is land of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
Farmland of Local Importance	This is land of importance to the local agricultural economy and is determined by each county's board of supervisors and local advisory committee.
Farmland of Local Potential	In a few counties the, local advisory committee has elected to additionally define areas of Local Potential (LP) farmland. This land includes soils that qualify for Prime Farmland or Farmland of Statewide Importance, but are presently not cultivated or irrigated.
Grazing Land	Grazing land is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.
Nonagricultural Lands	
Urban and Built-up Land	This is used for residential, industrial, commercial, construction, institutional, and public administrative purposes; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures; and other development purposes.
Other Land	Other land is that which is not included in any of the other mapping categories. The following types of land are generally included: low-density rural development; brush, timber, and other lands not suitable for livestock grazing; government lands not available for agricultural use; roads systems for freeway interchanges; vacant and nonagricultural areas larger than 40 acres and surrounded on all sides by urban development; confined livestock facilities of 10 or more acres; strip mines and borrow and gravel pits; and a variety of other rural land uses.
Water	Perennial water bodies with an extent of at least 40 acres.
Source: California Department of Conservation 2007.	

California Land Conservation Act of 1965

The California Land Conservation Act of 1965, or Williamson Act, established the state's primary program for the retention of private land in agriculture and open space use. The act creates an arrangement whereby private landowners enter into a 10-year contract with counties and cities to maintain their land in agricultural and compatible open-space uses in exchange for a reduction in property taxes. The contract is automatically renewed for an additional year unless it is cancelled. The contract may be cancelled if the land is being converted to an incompatible use. Local

governments receive an annual subvention of forgone property tax revenues from the state through the Open Space Subvention Act of 1971.

Local

Butte County

General Plan

The Agriculture Element of the County's General Plan 2030 (Butte County 2010a) provides information about agricultural resources and uses in the County. It contains goals, policies, and actions designed to protect, maintain, promote, and enhance agriculture in the county. The following are relevant goals and policies related to agriculture.

Goal AG-1: Maintain, promote, and enhance Butte County's agriculture uses and resources, a major source of food, employment, and income in Butte County.

AG-P1.1: The county supports state and Federal legislation designed to conserve soil and protect agricultural land.

AG-P1.2: The county supports agricultural education and research at Butte County educational institutions.

AG-P1.3: Continue to work with landowners in establishing new and maintaining existing Williamson Act contracts.

Goal AG-2: Protect Butte County's agricultural lands from conversion to non-agricultural uses.

AG-P2.1: The county shall work with the Local Agency Formation Commission to create and maintain a consistent approach to the conservation of agricultural land through the designation of reasonable and logical sphere of influence boundaries.

AG-P2.3: Redesignation and rezoning of land designated as Agriculture to an urban designation shall be allowed only when the applicant can demonstrate that the following criteria are met and mitigated:

- The lot(s) for which conversion is requested is adjacent to uses other than agriculture or agricultural support uses (e.g., receiving plants, hulling plants),
- The conversion will not be detrimental to existing agricultural operations,
- The conversion land is adjacent to existing urban infrastructure and conversion will constitute a logical contiguous extension of a designated urban area,
- No feasible alternative exists that is less detrimental to agriculture, and
- Full mitigation of impacts to the extent allowed under the law is provided, including, but not limited to, roads, drainage, schools, fire protection, law enforcement, recreation, sewage, and lighting.

AG-P2.6: The county shall retain and protect agricultural lands through the use of proactive land use techniques, including, but not limited to, the following:

- Clustered development projects, allowing a "clustering" of permitted densities in a compact configuration in order to protect agricultural land; and
- Density bonuses, permitting increased density on developable land in exchange for protection of agricultural land.

AG-P5.3: The zoning ordinance shall require that a buffer be established on property proposed for residential development in order to protect existing agricultural uses from incompatible use

conflicts. The desired standard shall be 300 feet but may be adjusted to address unusual circumstances.

AG-P5.5: To protect agricultural areas from flooding, all urban/residential development projects shall provide a drainage plan prepared by a registered civil engineer that, at a minimum, addresses

- pre-development drainage conditions for the development site, including peak runoff rates and runoff volumes;
- post-development drainage conditions, including changes in peak runoff rates and runoff volumes;
- off-site drainage or flooding impacts and proposed or recommended mitigation measures; and
- mechanisms for maintenance of drainage facilities.

Goal AG-5: Reduced conflicts between urban and agricultural uses and between habitat mitigation banking and agricultural uses.

Butte County Municipal Code Section 24-12 to 24-14

The purpose of the Agricultural Zone (AG) is to support, protect, and maintain a viable, long-term agricultural sector in the County. Standards for the AG zone maintain the vitality of the agricultural sector by retaining parcel sizes necessary to sustain viable agricultural operations, protecting agricultural practices and activities by minimizing land use conflicts, and protecting agricultural resources by regulating land uses and development intensities in agricultural areas.

Butte County Right-to Farm Ordinance

Chapter 35 of the Butte County Municipal Code, also referred to as the Butte County Right-to-Farm Ordinance (Ord. No. 3965, § 1, 6-12-07), serves as a notification to owners, purchasers, residents, and users of property adjacent to agricultural operations of potential issues at the agriculture-urban interface. The Right-to-Farm Ordinance declares that properly conducted agricultural operations on agricultural land are not subject to nuisance claims, assuming the operation was not already on record as a nuisance when the operation began. Information about the Right-to-Farm Ordinance is provided by the County to residents with an annual tax bill and when an application is submitted for development on or adjacent to agricultural land.

City of Biggs

General Plan

The Conservation and Recreation Element of the City of Biggs General Plan identifies the context and sets goals and policies for the protection of agricultural resources. The relevant goals and policies excerpted below are outlined in this element.

Goal CR-2: Promote and protect the continued viability of agriculture surrounding Biggs.

Policy CR-2.2 (Agricultural Buffers): Protect agricultural resources by maintaining a clear boundary between urban, rural and agricultural uses.

Policy CR-2.5 (Use of Land): Plan for and allow for the developed use of designated agricultural buffer areas as the City expands and new buffer areas are established.

Policy CR-2.6 (Right-to-Farm Ordinance): Preserve and support agricultural enterprises by supporting right-to-farm policies.

Biggs Municipal Code

Chapter 14.160 of the municipal code, which identifies the zoning of OS-Open Space District, is intended to preserve land, either temporarily or permanently, for a variety of purposes, including agriculture. Permitted uses include agricultural crop production, including but not limited to orchards, row crops, rice, and pastures.

City of Chico

General Plan

The Open Space and Environment Element of the City of Chico General Plan identifies the context and sets goals and policies for the protection of agricultural resources. It focuses on the preservation and enhancement of resources such as agriculture and limits the adverse effects on these resources from implementation of the general plan. The relevant goals and policies excerpted below are outlined in this element.

Goal OS-5: Preserve agricultural resources for the production of local food and the maintenance of Chico's rural character.

Policy OS-5.1: Minimize conflicts between urban and agricultural uses by requiring buffers or use restrictions.

Policy OS-5.3: Support local and regional agriculture.

Chico Municipal Code

Section 19.64 of the municipal code identifies Agriculture Preservation Standards for the City. This section contains provisions that require subdivisions to disclose a property's proximity to farmland to prospective buyers and that limit the definition of a "nuisance" to exclude established farms operated according to commonly accepted farming practices.

City of Gridley

General Plan

The General Plan Conservation Element addresses goals, policies, and actions related to agricultural resources in the city of Gridley. It addresses the management, development, and use of natural resources, including agricultural resources. It is primarily oriented toward natural resource management and conservation. Relevant goals and policies related to agriculture are excerpted below.

Conservation Goal 1: Minimize the impacts of growth on agriculture in the Gridley area.

Conservation Policy 1.1: The City will encourage ongoing agricultural uses on properties within the Sphere of Influence until such properties are annexed to the City.

Conservation Policy 1.2: The City will discourage detachment from irrigation and agricultural drainage districts until such time as nonagricultural use is imminent.

Conservation Policy 1.3: New development will mitigate for the conversion of agricultural land to urban use and will include in-lieu fees to acquire agricultural conversion easements or direct placement of agricultural conservation easements on a similar quality and amount of land.

Gridley Municipal Code

Chapter 17.08 of the municipal code defines the purpose and intent of AR-5 Agricultural Residential Districts to establish and preserve agricultural-residential districts at a population density appropriate for rural residential uses, to control urban encroachment onto prime agricultural areas, and to maintain the public health and safety.

Chapter 17.31.040 of the municipal ordinance identifies agricultural overlay zones for commercial production of agriculture. In a rural area characterized by intensive commercial agricultural production, some agricultural production can be conducted within an urbanizing farm community with minimal adverse impacts. The AO district is intended to be applied to a secondary zoning designation, for purposes of allowing commercial agricultural uses to be conducted on properties that are designated on the general plan and zoning diagrams for urban uses, until those uses are actually developed.

City of Oroville

General Plan

The Open Space, Natural Resources, and Conservation Element of the City of Oroville General Plan identifies goals and policies to preserve and improve the quantity, quality, and character of open space, including agriculture, in Oroville. This element provides direction regarding the conservation, development, and use of natural resources in and around Oroville, including agriculture. The relevant goal and policy excerpted below are outlined in this element.

Goal OPS-6: Preserve the maximum feasible amount of agriculturally productive land, in order to maintain agriculture's contributions to the local economy, life style, air quality, habitat value, and sense of Oroville's heritage.

P6.2: Cooperate with Butte County to retain agricultural uses on lands within the Oroville Sphere of Influence prior to their annexation to the City.

4.1.2 Environmental Setting

The environmental setting for agriculture provides an overview of the location of agricultural in the Plan Area, describes the type of crops found in the Plan Area, their biological and economic characteristics, the DOC farmland classifications, and lands designated under the Williamson Act.

Overview

The majority of Butte County's land is in agriculture (approximately 640,000 acres, or 60%).¹ Agriculture dominates the western half of the Plan Area in the north Central Valley and encompasses approximately 423,000 acres (or 75%) of the Plan Area. Many of the incorporated cities in the county also have substantial portions of their land in agricultural production. Table 4-2 presents a summary of agricultural acreage found in each incorporated city's general plan planning area and the percent of agricultural lands.

¹ Agriculture includes the following categories defined by the FMMP: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Grazing Land.

Table 4-2. Summary of Agricultural Lands by City (acres)

City	Acres of Agricultural lands within GP Planning Area	Total Acres within GP Planning Area	Percent of GP Planning Area
Biggs	3,870	4,628	84
Chico	74,500	96,000	78
Gridley	2,654	4,589	58
Oroville	1,521	94,000	2

Sources: City of Oroville 2009a; City of Chico 2011a; City of Gridley 2010; City of Biggs 2013 and 2014.

Agriculture in the Plan Area is undertaken where the soils and topography are most suitable. The western part of the Plan Area is flat and generally well drained, and therefore well-suited for many crops; however, soil function changes from north to south. Figure 4-1 identifies the primary locations of rice, irrigated cropland and pasture, and orchards and vineyards in the Plan Area. Rice production dominates the southwestern section of the Plan Area, where the existing hydric soils formed in association with an internally draining flood basin. To the north, rice production is replaced primarily by orchards as the dominant cover type (primarily west of SR 99) (Butte County Association of Governments 2015).

Crops

Types

In the county, high-quality soils and a temperate Mediterranean climate support a wide variety of crops including fruits and nuts, field crops, and seed and vegetable crops. Other agricultural goods, including livestock, apiary (pollination) services, and nursery plants and timber, are also produced in the county. Rice, almonds, and English walnuts account for more than one-third of the county's total agricultural acreage (Butte County 2010a). Table 4-3 presents the extent of agricultural crops reported for the county in 2005. Most of these crops and acreage is located within the Plan Area. Figure 4-1 shows the general agricultural classifications for the primary agricultural communities within the Plan Area: rice, orchards/vineyards, irrigated cropland and irrigated pasture land. Approximately 48 percent of agricultural lands within the Plan Area is in rice production, 43 percent is in orchards/vineyards and 8 percent is in irrigated pasture (Butte County Association of Governments 2015).

Table 4-3. Extent of Agricultural Lands by Major Crop Type in the County

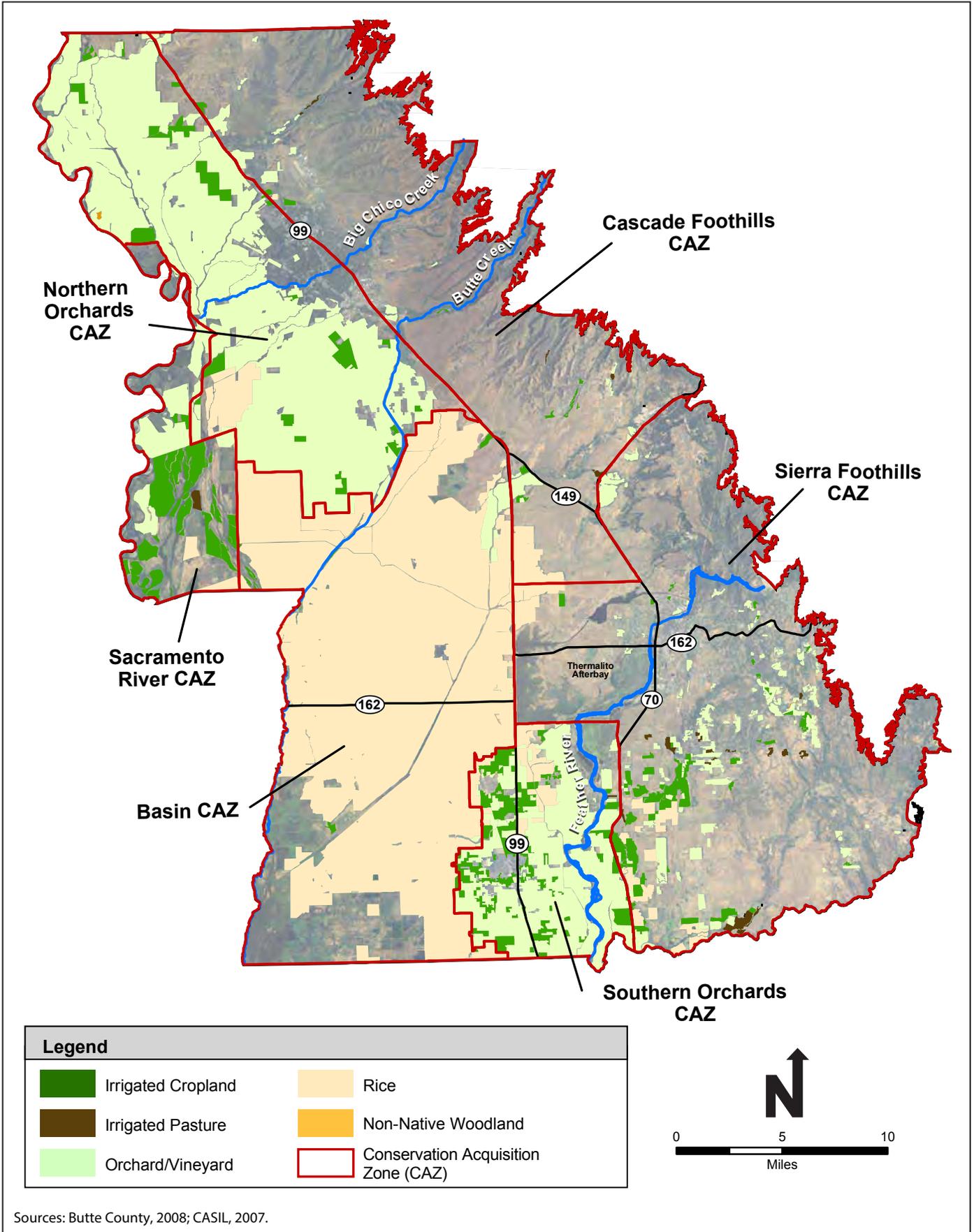
Crop Type	Acreage
Rice	96,400
Irrigated pasture	15,500
Alfalfa	1,885
Wheat	1,600
Other field crops	5,697
<i>Subtotal Field Crops</i>	121,082
Almonds	41,478
Olives	2,424
Peaches (all types)	2,987
Dried plums	12,297
Walnuts (English)	32,080
Other orchard/vineyard crops	3,258
<i>Subtotal Orchards and Vineyards</i>	94,524
Total	215,606

Source: Butte County Association of Governments 2015:Table 3-14.

Note: Values derived from the 2006 Agricultural Crop Report. The numbers in this table cannot be directly compared to the agricultural acreages from the land cover mapping in the BRCP, because the numbers in this table are based on reported production and the numbers from the land cover mapping include both producing and nonproducing agricultural land. For example, fallow rice fields and abandoned orchards are included in the agricultural land cover mapping

Economic Value

In 2010, the estimated gross value of agricultural production in all of the county was approximately \$622 million (Butte County 2010b). Specialty crops and industries, including organic farming and agricultural tourism, also contribute to the agricultural economy in the county. As of 2010, registered organic producers and certified organic producers generated more than \$8 million dollars of revenue (Butte County 2010b). Table 4-4 identifies the value of the county's top ten crops in 2010 dollars.



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Figure 4-1
Distribution of Agricultural Lands in the Plan Area

Table 4-4. Butte County's Top Ten Crops (2010)

Commodity	Value (dollars)
Rice	182,248,000
Walnuts	173,392,000
Almonds	113,781,000
Dried Plums	42,566,000
Nursery stock	23,837,000
Cattle and calves	11,714,000
Rice seed	10,494,000
Fruit and nut (misc.)	10,494,000
Peaches—clingstone	9,690,000
Kiwis	8,177,000
Olives (all)	7,270,000
Apiary pollination	7,078,000

Source: Butte County 2010b.

State Farmland Classifications

DOC important farmland types and acreages Countywide are shown in Table 4-5. Approximately 24% of the county's farmland is Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

Table 4-5. Important Farmland Acreages in Butte County

Farmland Type	Acres	Percent of Total County Lands
Prime Farmland	193,166	20%
Farmland of Statewide Importance	21,849	2%
Unique Farmland	22,177	2%
Total	237,192	24%

DOC farmland types and acreages in the Plan Area are shown in Figure 4-2; acreages are presented in Table 4-6. Nearly all of the County's Prime Farmland, Farmland of Statewide Importance, and Unique Farmland lie within the Plan Area.

Table 4-6. Important Farmland Acreages in the Plan Area

Important Farmland Type	Acres
Prime Farmland	193,158
Farmland of Statewide Importance	21,846
Unique Farmland	21,894
Total	236,899

Rice, irrigated cropland, and irrigated pasture within the Plan Area are land cover types that covered and non-covered species use as habitat for foraging, nesting, roosting, and other activities.

Acres for the DOC farmland types for these three types of land cover are presented in Table 4-7. The total acreage of these land cover types (129,849 acres) is a little more than half of all the designated important farmland acreage within the Plan Area (236,899 acres).

Table 4-7. Important Farmland Acreages in the Plan Area for Rice, Irrigated Cropland, and Irrigated Pasture

Land Cover Type	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Total
Rice	96,881	8,950	11,312	117,142
Irrigated Cropland	7,661	3,935	824	12,420
Irrigated Pasture	203	83	1	287
Total	104,744	12,968	12,137	129,849

Williamson Act Lands

Approximately 217,151 acres of County farmland were enrolled in Williamson Act contracts in 2009 (California Department of Conservation 2010). Approximately 200,730 acres (92%) of Williamson Act contracts lie within the Plan Area (Figure 4-3).

4.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for agricultural and forestry resources in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).² The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

4.2.1 Methods for Impact Analysis

This section describes the methods for analyzing the environmental consequences of implementing the alternatives.

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure project. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on agricultural and forestry resources are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact

² These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

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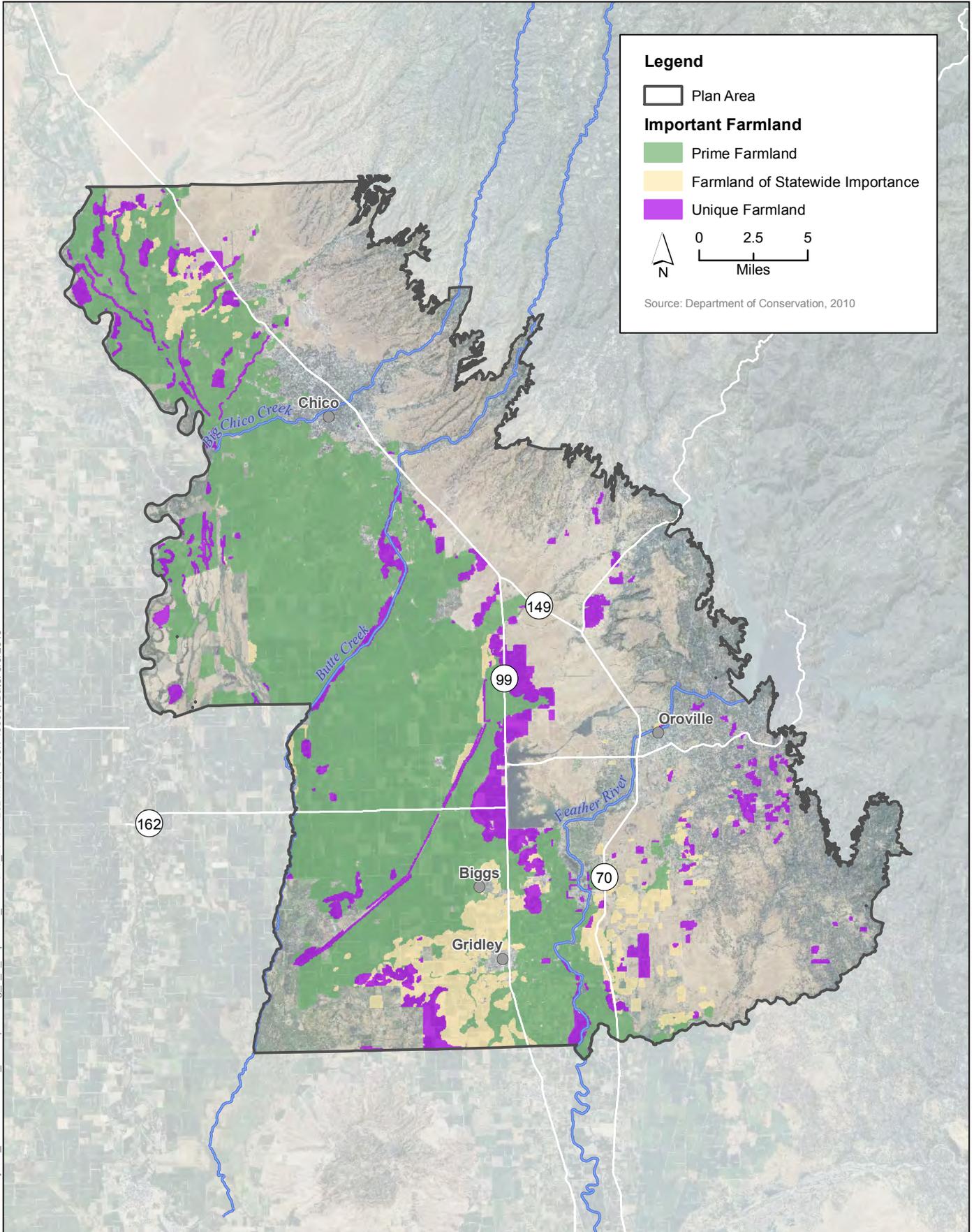


Figure 4-2
Important Farmland

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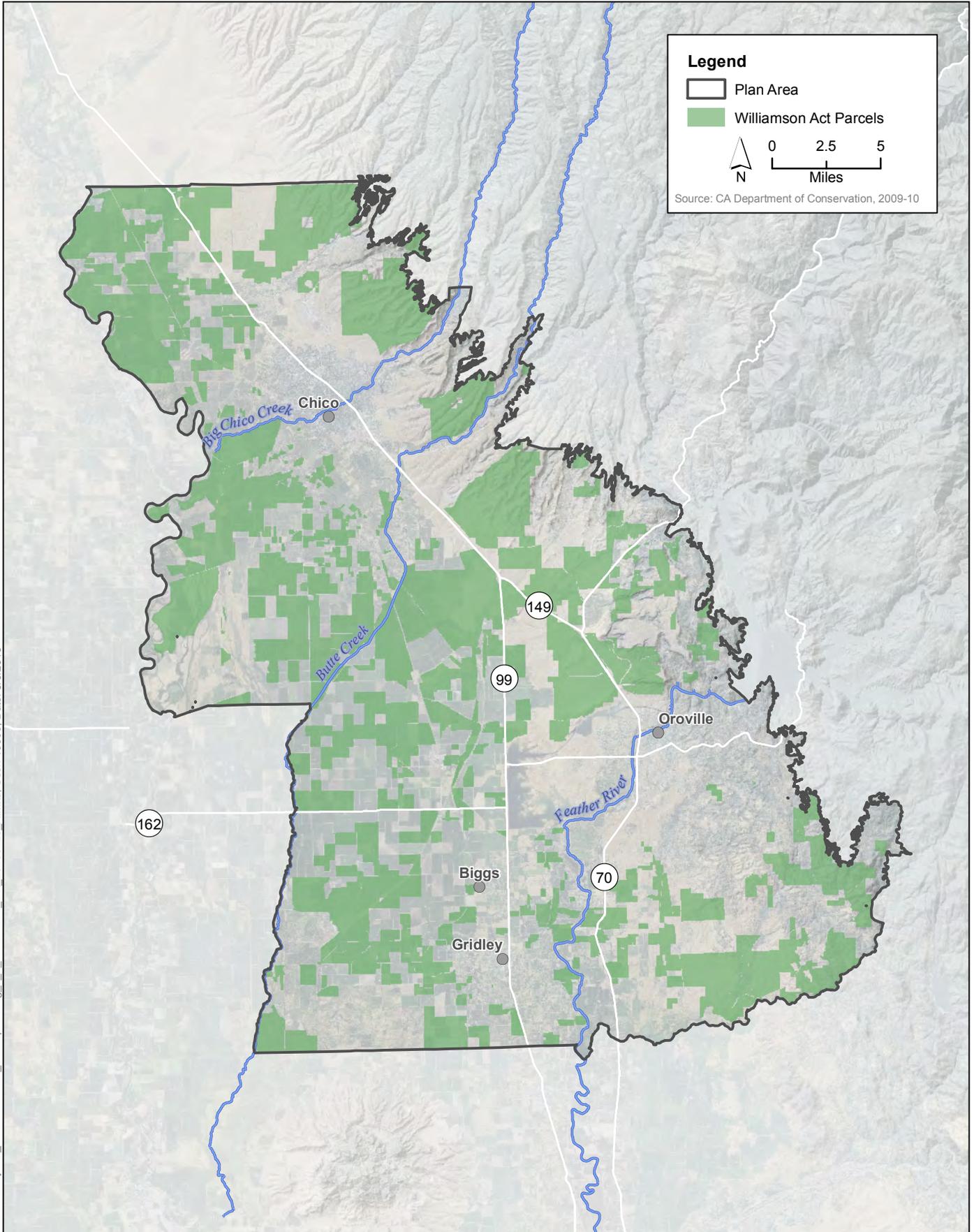


Figure 4-3
Williamson Act Lands

determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on agricultural and forestry resources.

The amounts of existing Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (i.e., important farmlands) within the Plan Area were quantitatively and qualitatively compared to the anticipated reduction or modification to important farmland under each alternative. A qualitative analysis was used depending on the level of detail of information available for important farmlands for a given alternative. Specifically, information from the general plan EIRs was reviewed for each local jurisdiction to define the No Action Alternative (Alternative 1). Using GIS layers, the impact footprints were overlaid on the three different types of important farmlands to determine the amount of acreage that would be affected by the BRCP covered activities and converted to nonagricultural uses. Orchards and vineyards are included in these calculations because they are agricultural lands that are designated as important farmland categories within the Plan Area. Furthermore, impacts are identified through this GIS analysis were determined to be permanent unless otherwise indicated. Tables 4-8 and 4-9 summarize this information.

Table 4-8. Summary of Alternative 1—No Action Alternative Important Farmland Impacts (acres)

Local Agency	Acres of Important Farmland Identified in General Plan EIRs ^a
Butte County ^a	4,770
City of Biggs ^b	685
City of Chico ^c	1,041
City of Gridley ^d	1,385
City of Oroville ^e	1,500
Total	9,381

Sources: Butte County 2010c; City of Biggs 2013; City of Chico 2011a; City of Gridley 2009; City of Oroville 2009a.

^a 2006 FMMP data.

^b 2010 FMMP data.

^c 2008 FMMP data.

^d 2006 FMMP data.

^e 2004 FMMP data.

Table 4-9. Summary of Alternatives' Important Farmland Impacts (acres)

Alternative	Prime Farmland	Unique Farmland	Farmland of Statewide Importance	Total
Alternative 1 – No Action (No Plan Implementation)	3,730	1,066	2,205	7,002
Alternative 2 – Proposed Action	3,730	1,070	2,210	7,010
Alternative 3 – Reduced Development/ Reduced Fill	2,555	1,049	870	4,474

Notes: Alternative 4 is anticipated to result in impacts of similar extent to those under Alternative 2. Impacts are expected to occur over the life of the permit.

The existing Williamson Act lands were qualitatively compared to the anticipated reduction or modification of those lands under each alternative. Finally, a qualitative analysis, based on the assessment of conversion of important farmland and effects on Williamson Act lands, was performed to determine if each alternative would result in other changes in the existing environment that could result in conversion of farmland to nonagricultural use.

As discussed in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*, covered activities within the Local Agencies' jurisdictions have been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on agriculture associated with the development of covered activities and the recommended mitigation measures are summarized in Appendix C. Agriculture impact analyses and mitigation measures contained in previous CEQA documents are incorporated by reference.

In adopting the EIRs for the local general plans, each participating jurisdiction determined that the programmatic impacts on Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (i.e., Important Farmland) of implementing general plan policies and implementation of the general plan would be significant and unavoidable. The County and the City of Gridley also determined that there would be significant and unavoidable impacts on Williamson Act lands and farmland that would be converted to non-farmland uses. The Cities of Biggs, Chico, and Oroville have determined that there would be a less-than-significant impact on Williamson Act lands and farmland that would be converted to non-farmland uses because their general plans would not involve land use changes for parcels currently enrolled in Williamson Act contracts or because the contracts for lands enrolled in the Williamson Act have been nonrenewed. It is assumed that all covered activities approved by the participating local jurisdictions would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified, such that impacts would be adequately mitigated.

4.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP, to nonagricultural use.
- Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract.
- Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use.

The loss of forest land or conversion of forest land to non-forest use is not discussed in the analysis because, as described above in Section 4.1, *Affected Environment*, forest land that is used for timber harvesting does not exist within the Plan Area.

4.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the

BRCP. Under Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plans. These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on agricultural resources associated with the conservation strategy and conservation measures would not occur. The primary mechanism for impacts on agricultural resources under Alternative 1 is direct conversion of agricultural land to nonagricultural uses (e.g., urban, suburban) through the implementation of the various general plans.

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and Cities of Biggs, Chico, Gridley, and Oroville determined that the implementation of their general plans—and thus, activities that would occur under the general plans—would result in significant impacts by converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses (City of Oroville 2009a; City of Gridley 2009; Butte County 2010c; City of Chico 2011a; City of Biggs 2013). General plan implementation in these jurisdictions would result in the conversion of thousands of acres of important farmland as summarized in Table 4-8 to nonagricultural uses (City of Gridley 2009; Butte County 2010c; City of Chico 2011a; City of Biggs 2013). The County and the City of Gridley concluded that implementation of the general plan goals, policies, and actions could reduce impacts on important farmland, but not to less-than-significant levels because conversion important farmland would still take place.

NEPA Determination: Alternative 1 would result in a conversion of important farmland to nonagricultural land uses as a result of implementation of all the Local Agency general plans. The County and the City of Gridley concluded that implementation of the general plan goals, policies, and actions could reduce impacts on important farmland, but not to less-than-significant levels because conversion important farmland would still take place. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1 would result in a conversion of important farmland to nonagricultural land uses as a result of implementation of all of the Local Agency general plans. The County and the City of Gridley concluded that implementation of the general plan goals, policies, and actions could reduce impacts on important farmland, but not to less-than-significant levels because conversion important farmland would still take place. Consequently, the impact would be significant and unavoidable.

Impact AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the City of Gridley determined that the implementation the general plans and, thus, activities that would occur under the general plan—would result in significant impacts by conflicting with Williamson Act contracts (City of Gridley 2009; Butte County 2010c). General plan implementation in these jurisdictions would result in the conversion of lands in Williamson Act

contracts to nonagricultural uses. Implementation of the County's General Plan 2030 would result in the conversion of 90 acres of land under Williamson Act contracts; implementation of the Gridley General Plan would result in the conversion of 117 acres of land under Williamson Act contracts.

Implementation of the general plans of the Cities of Biggs, Chico, and Oroville would not conflict with Williamson Act lands (City of Oroville 2009a; City of Chico 2011a; City of Biggs 2013) because the proposed urban uses under the general plans would not convert lands currently under Williamson Act contracts or within a preserve, or because contracts for Williamson Act Lands have been nonrenewed since before the current general plans were proposed.

NEPA Determination: Alternative 2 would result in the conversion of Williamson Act land to nonagricultural uses through the implementation of the County and City of Gridley general plans. Implementation of these two general plan goals, policies, and actions or mitigation measures would not reduce impacts to less-than-significant levels. Consequently, impacts would be significant and unavoidable.

CEQA Determination: Alternative 2 would result in the conversion of Williamson Act land to nonagricultural uses through the implementation of the County and City of Gridley general plans. Implementation of these two general plan goals, policies, and actions or mitigation measures would not reduce impacts to less-than-significant levels. Consequently, impacts would be significant and unavoidable.

Impact AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the City of Gridley determined that the implementation of their general plans—and thus, activities that would occur under the general plans—would result in the conversion of farmland to nonagricultural use (City of Gridley 2009; Butte County 2010c). As discussed in Impact AG-1, these jurisdictions expect conversion of significant amounts of farmland acreage to nonagricultural uses. The Cities of Biggs, Chico, and Oroville determined that although implementation of their general plans could result in changes in the existing environment that, due to their location or nature, could result in the conversion of farmland to nonagricultural uses, the policy provisions in the general plan and continued implementation of the agricultural preservation standards under the municipal codes would ensure that agricultural operations are not adversely affected (City of Oroville 2009b; City of Chico 2011b; City of Biggs 2013). Additionally, the City of Oroville is not proposing to place incompatible land uses immediately adjacent to any existing agricultural parcels; accordingly, the proposed action (Alternative 2) would not result in changes to the existing environment that would result in the conversion of farmland to nonagricultural uses within these jurisdictions (City of Oroville 2009a).

NEPA Determination: Alternative 1 would involve other changes in the existing environment that would result in the conversion of farmland to nonagricultural uses through the implementation of the County and City of Gridley general plans. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. Consequently, this impact would be significant and unavoidable.

CEQA Determination: Alternative 1 would involve other changes in the existing environment that would result in the conversion of farmland to nonagricultural uses through the implementation of

the County and City of Gridley general plans. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. Consequently, this impact would be significant and unavoidable.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Covered activities relevant to agricultural resources would be those removing existing important agricultural lands from production, such as permanently developing the land or restoring it to habitat. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations, or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operations-related impacts; although some covered activities, however, may be exempted from environmental review requirements due to project characteristics, including small projects or infill projects.

The primary impact mechanism under Alternative 2 is permanent conversion of existing important agricultural lands to nonagricultural uses. Covered activities that could result in the permanent conversion of existing agricultural lands include those within the Local Agencies' jurisdictions (i.e., implementation of the general plan), maintenance activities of the participating water agencies, road projects by Caltrans, and some activities on the BRCP conservation lands, such as natural community restoration, where such restoration occurs on existing agricultural land (as discussed in Chapter 5 of the BRCP).

The conservation strategy and conservation measures outside the Local Agencies' jurisdiction would result in potential effects on agricultural lands through converting existing agricultural lands to natural communities to provide habitat for covered species. In addition other covered activities (such as pipeline construction by irrigation and water districts or roadway construction by Caltrans) outside Local Agencies' jurisdiction would also result in potential effects on agricultural lands through modifying agricultural lands adjacent to or within specific areas or road alignments. Some of these activities—such as conservation of lands that can continue in agricultural production—would not result in conversion of farmland to nonagricultural uses. Other activities, such as restoration, are expected to convert a limited amount of important farmland, but only when the activity is incompatible with the existing farming practices, such as conversion of existing row crops to wetland habitat. However, restoration activities involving nonagricultural lands would not result in conversion of farmland to agricultural uses.

A maximum of 3,822 acres (2.7%) of the three agricultural communities evaluated in the BRCP (i.e., rice, irrigated cropland, and irrigated pasture) within the Plan Area would be permanently affected by Alternative 2 (Butte County Association of Governments 2015). Table 4-10 summarizes these permanent effects.

Table 4-10. Maximum Extent of Permanent Direct Impacts on Agricultural Communities (acres)

Agricultural Community ^a	Existing in Plan Area	Maximum Extent Permanently Removed by Covered Activities	Percent Remaining in Plan Area with Implementation of Covered Activities
Rice ^b	120,316	1,615	98.7
Irrigated Cropland ^c	20,413	2,102	89.7
Irrigated Pasture	1,160	105	90.9
Total	141,889	3,822	97.3

Source: Butte County Association of Governments 2015:Table 4-5.

^a Orchard/vineyard (5,216 acres) and nonnative woodland (7 acres) are omitted because they do not provide suitable habitat for non-covered species.

^b 40 acres of permanent direct effects due to rerouting existing canals in the Basin CAZ outside of UPAs is included.

^c 20 acres of permanent direct effects due to rerouting existing canals in the Basin CAZ outside of UPAs is included.

Table 4-11 summarizes the DOC designations of the three agricultural communities of rice, irrigated cropland, and irrigated pasture expected to be affected by Alternative 2. Approximately 2,283 acres (or 60%) of the three agricultural communities that would be affected are DOC-designated farmland. Almost all of the ricelands affected are DOC designated (1,460 total designated acres out of 1,615 total acres); approximately one-third of the irrigated cropland affected are DOC designated (766 total designated acres out of 2,102 acres), and approximately half of the irrigated pasture land affected are DOC designated (56 designated acres out of 105 acres).

Table 4-11. DOC Farmland Designations of Three Agricultural Communities (acres)

Agricultural Community ^a	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Total
Rice	1,125	189	145	1,460
Irrigated Cropland	373	367	26	766
Irrigated Pasture	20	36	0	56
Total	1,518	592	172	2,283

The conservation strategy and conservation measures of Alternative 2 include a total protection target of 26,962 acres for agricultural lands, since agricultural lands are considered a natural community and changes in agricultural lands can affect the distribution and abundance of wildlife species. Table 4-12 summarizes the protection targets for agricultural communities established by the BRCP. These targets focus on protecting and maintaining sufficient agricultural croplands, in combination with native habitats, to provide conservation of covered species that use agricultural habitats. These protection targets would meet the BRCP biological objectives for ecological corridors and covered species habitat contributing to the support of covered species populations and habitat and other native species. For example, the protection targets for riceland focus on sustaining sufficient rice and associated water conveyance infrastructure that includes, and is connected to, occupied giant garter snake (*Thamnophis gigas*) habitat; this target would concurrently protect sufficient foraging habitat to maintain the wintering population of greater sandhill cranes (*Grus*

canadensis tabida) and ensure continued agricultural production on these lands (Butte County Association of Governments 2015).

Table 4-12. Agricultural Community Protection Targets (acres)

	Total Existing in Plan Area	CAZ Habitat Protection Targets						Total Protection Target	Percent Protected by Target
		Sierra Foothills	Cascade Foothills	Northern Orchards	Southern Orchards	Basin	Sac. River		
Rice	120,316	0	0	1,317	0	21,660	205	23,182	19.3%
Irrigated pasture and irrigated cropland	21,572	0	0	796	2,534	250	200	3,780	17.5%
Total (acreage)	141,889	1,240	0	2,113	2,534	21,910	405	26,962	19%

Source: Butte County Association of Governments 2015:Table 5-5.

Note: Targets include land cover types to be protected for both conservation of natural communities and mitigation for covered activities that remove natural communities. Consequently, the amount of each natural community that is protected may be less than shown if all the permanent development covered activities and the habitat protection that is required to mitigate impacts are not implemented.

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The covered activities under Alternative 2 are estimated to result in impacts on important farmland as summarized in Table 4-9. A total of 3% of important farmlands in the plan area—comprising approximately 2% of the existing Prime Farmland, 5% of Unique Farmland, and 10% of Farmland of Statewide Importance— would be affected under Alternative 2. These impacts include both those related to covered activities within the jurisdictions of the Local Agencies as a result of implementation of the general plans (as described in Impact AG-1 under Alternative 1) and covered activities outside the jurisdiction of the Local Agencies (e.g., implementation of conservation measures). As shown in Table 4-10, up to 1,615 acres of rice, 2,102 acres of irrigated cropland, and 105 acres of irrigated pasture land would be permanently removed by the BRCP covered activities. As shown in Table 4-11, 60% of these lands are important farmland (Butte County Association of Governments 2015). Much of the agricultural land that would be converted is considered important farmland.

Although Alternative 2 could result in the conversion of approximately 7,000 acres of important farmland to nonagricultural uses, it would also result in a protection target of 26,962 acres (or 19%) of agricultural land in the Plan Area. A total of 6,962 acres of agriculture will be protected as mitigation for the direct effects of the covered activities on agricultural habitat for covered species, and an additional 20,000 acres of agriculture will be protected to contribute to conservation of covered species. The protection target is meant to protect and maintain the working landscape of rice primarily through voluntary permanent agricultural conservation easements (Butte County Association of Governments 2015). This protected acreage would be connected with large areas of protected grasslands that are themselves connected to existing protected areas of grasslands and other natural communities (Butte County Association of Governments 2015). The protection target

would result in protecting more than 38% of agricultural types that are valuable for wildlife in the Plan Area, including 25,380 acres of rice and 9,461 acres of irrigated pasture and cropland. Although the locations of the agricultural easements and protection targets are unknown and may not be acquired because almost all the important farmland in the Plan Area consists of existing rice, irrigated cropland, irrigated pasture, and orchard/vineyards (Figures 4-1 and 4-2), it is likely that most of the 26,962 acres protected would be important farmland. The protection of this land would prohibit the conversion of this important farmland in perpetuity.

NEPA Determination: Although the agricultural protection target of Alternative 2 would preserve more than 30% of agricultural communities—most of which would likely be important farmland—the covered activities identified in the BRCP, primarily the implementation of the County and city general plans, would convert important farmland to nonagricultural uses. The general purpose of Alternative 2 is to comprehensively protect and conserve covered species and to conserve, enhance, and restore the habitat and ecosystems upon which these species depend to ensure their long-term survival in the Plan Area; Alternative 2 also aims to provide for long-term conservation and management of covered species within the Plan Area at a regional scale while allowing for compatible future land uses and development under the general plans of the Local Agencies and the Regional Transportation Plan. Nevertheless, this impact would be significant and unavoidable.

CEQA Determination: Although the agricultural protection target of Alternative 2 would preserve more than 30% of agricultural communities—most of which would likely be important farmland—covered activities would convert important farmland to nonagricultural uses. Overall, this impact would be significant. The general purpose of Alternative 2 is to comprehensively protect and conserve covered species and to conserve, enhance, and restore the habitat and ecosystems upon which these species depend to ensure their long-term survival in the Plan Area; Alternative 2 also aims to provide for long-term conservation and management of covered species within the Plan Area at a regional scale while allowing for compatible future land uses and development under the general plans of the Local Agencies and the Regional Transportation Plan. Nevertheless, this impact would be significant and unavoidable.

Impact AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The covered activities under Alternative 2 would affect Williamson Act lands. Impacts associated with implementation of the general plans are the same as those identified in the discussion of Impact AG-2 under Alternative 1.

Alternative 2 would also entail a protection target of 26,962 acres of agricultural lands. As discussed above under Impact AG-1, the precise location of protected lands is unknown; however, given the extent of Williamson Act lands in the Plan Area it is likely that many existing and future Williamson Act lands would be preserved by this protection target. Furthermore, the protection target would not conflict with the Williamson Act because agricultural production and activity would continue to occur on these lands, thereby upholding conditions of the Williamson Act.

NEPA Determination: Although the agricultural protection target would not conflict with Williamson Act lands and implementation of the general plans of Biggs, Chico, and Oroville would not remove or conflict with Williamson Act lands, implementation of the County and the City of Gridley general plans would conflict with the Williamson Act. Implementation of the general plan goals, policies, and actions would not reduce impacts to a less-than-significant level. Consequently, impacts would be significant and unavoidable.

CEQA Determination: Although the agricultural protection target would not conflict with Williamson Act lands and implementation of the general plans of Biggs, Chico, and Oroville would not remove or conflict with Williamson Act lands, implementation of the County and the City of Gridley general plans would conflict with the Williamson Act. Implementation of the general plan goals, policies, and actions would not reduce impacts to a less-than-significant level. Consequently, impacts would be significant and unavoidable.

Impact AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to nonagricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with implementation of the general plans are the same as those disclosed in the discussion of Impact AG-3 under Alternative 1.

Alternative 2 would also entail a protection target of more than 26,000 acres of agricultural communities (approximately 38% agriculture types that are valuable for wildlife in the Plan Area), thus protecting this agricultural land from conversion to nonagricultural uses. These activities would not place incompatible land uses immediately adjacent to any existing agricultural parcels. Moreover, the conservation strategy and conservation measures protecting, preserving, or enhancing natural communities would be compatible with existing farmland, and would not result in indirect conversion of agricultural lands.

NEPA Determination: The agricultural protection target in Alternative 2 would protect important farmlands from conversion to nonagricultural uses, and the BRCP conservation strategy would not result in incompatible land uses with existing farmland. However, implementation of the County and the City of Gridley general plans would result in other changes in the environment that would convert farmland to nonagricultural uses. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. These impacts would be significant and unavoidable.

CEQA Determination: The agricultural protection target in Alternative 2 would protect important farmlands from conversion to nonagricultural uses, and the BRCP conservation strategy would not result in incompatible land uses with existing farmland. However, implementation of the County and the City of Gridley general plans would result in other changes in the environment that would convert farmland to nonagricultural uses. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. These impacts would be significant and unavoidable.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. Consequently, the protection target for agricultural habitat would be less than the 26,962 acres

identified under Alternative 2. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Alternative 3 is estimated to result in impacts on important farmland as summarized in Table 4-9. A total of 2% of important farmland—comprising approximately 1% of the existing Prime Farmland, 5% of Unique Farmland, and 4% of Farmland of Statewide Importance— would be affected under this alternative. These impacts include both those related to covered activities within the jurisdictions of the Local Agencies as a result of implementation of the general plan (as described in the discussion of Impact AG-1 under Alternative 1), as well as those associated with covered activities outside the jurisdiction of the Local Agencies (e.g., implementation of conservation measures, water district and irrigation district activities, etc.). Although there would be less development converting agricultural lands and it would be more highly concentrated and centralized around existing urban uses, Alternative 3 is nevertheless anticipated to result in a conversion of substantial amounts of important farmland to nonagricultural uses.

As a result of reduced development within the Plan Area, it is anticipated that fewer acres of rice would be protected through voluntary easements under this alternative. Although the locations of the agricultural easements and protection targets are unknown, because almost all the important farmland in the Plan Area consists of existing rice, irrigated cropland, irrigated pasture, and orchard/vineyards (Figures 4-1 and 4-2), it is likely that most of the acres protected would be important farmland. The protection of this land would prohibit the conversion of this important farmland in perpetuity.

NEPA Determination: The agricultural protection target of Alternative 3 (expected to be less than 26,962 acres) would preserve important farmland. However, the covered activities within jurisdiction of the Local Agencies and covered activities associated with implementation of the BRCP conservation strategy and conservation measures would also convert important farmland to nonagricultural uses. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

CEQA Determination: The agricultural protection target of Alternative 3 (expected to be less than 26,962 acres) would preserve important farmland. However, the covered activities within jurisdiction of the Local Agencies and covered activities associated with implementation of the BRCP conservation strategy and conservation measures would also convert important farmland to nonagricultural uses. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

Impact AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The BRCP covered activities under this alternative would affect Williamson Act lands. Impacts associated with implementation of the general plans would be similar, but reduced, to those identified in the discussion of Impact AG-2 under Alternative 1. Although the urban development would be more localized and dense, some Williamson Act lands would still be removed from agricultural production, except in the Cities of Biggs, Chico, and Oroville. As disclosed in the discussion of Impact AG-2 under Alternative 2, these cities would not remove any lands from Williamson Act contracts, or such contracts are already in nonrenewal status (City of Oroville 2009a; City of Chico 2011a; City of Biggs 2013).

It is anticipated that Alternative 3 would result in the protection of fewer acres of Williamson Act lands than Alternative 2, because the reduction in development would necessitate lower protection targets. As discussed above under Impact AG-1 for this alternative, the precise location of protected lands is unknown; however, given the extent of Williamson Act lands in the Plan Area, it is likely that many existing and future Williamson Act lands would be preserved by this protection target. Furthermore, the protection target would not conflict with the Williamson Act because agricultural production and activity would continue to occur on these lands, thereby upholding conditions of the Williamson Act.

NEPA Determination: The agricultural protection target of Alternative 3 would not conflict with Williamson Act lands and the implementation of the general plans of the Cities of Biggs, Chico, and Oroville would not remove or conflict with Williamson Act lands. However, the County and City of Gridley determined a conflict would occur as it is expected less than 200 acres of Williamson Act contracts would be removed from production. While goals, policies, and actions of the general plans could reduce some of these impacts, they would not be reduced to a less-than-significant level. No feasible mitigation is available to prevent these lands from conversion to nonagricultural uses. Furthermore, the purpose of the general plan updates is to provide planning for the urban areas of the local jurisdictions. Consequently, this impact would be significant and unavoidable.

CEQA Determination: The agricultural protection target of Alternative 3 would not conflict with Williamson Act lands and the implementation of the general plans of the Cities of Biggs, Chico, and Oroville would not remove or conflict with Williamson Act lands. However, the County and City of Gridley determined a conflict would occur as it is expected less than 200 acres of Williamson Act contracts would be removed from production. While goals, policies, and actions of the general plans could reduce some of these impacts, they would not be reduced to a less-than-significant level. No feasible mitigation is available to prevent these lands from conversion to nonagricultural uses. Furthermore, the purpose of the general plan updates is to provide planning for the urban areas of the local jurisdictions. Consequently, this impact would be significant and unavoidable.

Impact AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with implementation of the general plans are the same as those disclosed in the discussion of Impact AG-3 under Alternative 1.

Alternative 3 would result in the protection of a lesser extent of agricultural lands than under Alternative 2 (less than 26,962 acres) through implementation of the conservation strategy. Even

though the acreage would be less, this acreage would be protected from conversion to nonagricultural uses. These activities would not place incompatible land uses immediately adjacent to any existing agricultural parcels. Moreover, the conservation strategy and conservation measures protecting, preserving, or enhancing natural communities under this alternative, would be compatible with existing farmland. This alternative would not result in indirect conversion of agricultural lands.

NEPA Determination: Although the agricultural protection target of Alternative 3 would protect important farmlands from conversion to nonagricultural uses and the conservation strategy would not result in incompatible land uses with existing farmland, implementation of the general plans for the County and the City of Gridley would result in other changes in the environment that would convert farmland to nonagricultural uses. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Although the agricultural protection target of Alternative 3 would protect important farmlands from conversion to nonagricultural uses and the conservation strategy would not result in incompatible land uses with existing farmland, implementation of the general plans for the County and the City of Gridley would result in other changes in the environment that would convert farmland to nonagricultural uses. While the goals, policies, and actions of the general plans could reduce impacts on some of the agricultural lands in these jurisdictions, it would not reduce them to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. Therefore, impact mechanisms for agricultural resources would be similar to those described for Alternative 2.

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with covered activities that do not include the preservation of grasslands or riceland would be the same as those disclosed in the discussion of Impact AG-1 under Alternative 2: the conversion of approximately 7,000 acres (or 3%) of important farmland in the Plan Area. Not all of the covered restoration activities are expected to convert important farmland because some of the activities would actually place conservation easements on the farmland and allow the land to continue to be in production (discussed further below).

This alternative would result in the preservation and conservation of more rielands than Alternative 2. While the rielands might not constitute an increase of agricultural land in the Plan Area—because the easements would likely be placed on lands already in rice cultivation—protection under the conservation strategy would ensure that the land would not be converted to nonagricultural uses. As such, Alternative 4 would protect a considerable amount of important farmland from the risk of future conversion to nonagricultural uses.

NEPA Determination: The agricultural protection target of Alternative 4 would preserve important farmland. However, the covered activities within jurisdiction of the Local Agencies would convert important farmland to nonagricultural uses. While the goals, policies, and actions of the general plans or mitigation measures could reduce impacts on some of the agricultural lands, it would not reduce them to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

CEQA Determination: The agricultural protection target of Alternative 4 would preserve important farmland. However, the covered activities within jurisdiction of the Local Agencies and covered activities associated with implementation of the conservation strategy and conservation measures would also convert important farmland to nonagricultural uses. While the goals, policies, and actions of the general plans or mitigation measures could reduce impacts on some of the agricultural lands, it would not reduce them to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

Impact AG-2: Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The covered activities under Alternative 4 would affect Williamson Act lands. Impacts associated with implementation of the general plans are the same as those identified in the discussion of Impact AG-2 under Alternative 1.

The location of additional ricelands to be preserved under Alternative 4 is unknown; whether they would be located on lands either currently under Williamson Act contract or might later be enrolled is also unknown. However, rice production is a compatible use with the Williamson Act because it is an agricultural use. Consequently, protection of additional ricelands would not result in a conflict with a Williamson Act contract.

NEPA Determination: The agricultural protection target of Alternative 4 would not conflict with Williamson Act lands and the implementation of the general plans of the Cities of Biggs, Chico, and Oroville would not remove or conflict with Williamson Act lands. However, the County and the City of Gridley determined that there would be a conflict with the Williamson Act within their jurisdictions. While goals, policies, and actions of the general plans could reduce some of these impacts, they would not be reduced to a less-than-significant level. No feasible mitigation is available to prevent these lands from conversion to nonagricultural uses. Consequently, this impact would be significant and unavoidable.

CEQA Determination: The agricultural protection target of Alternative 4 would not conflict with Williamson Act lands and the implementation of the general plans of the Cities of Biggs, Chico, and Oroville would not remove or conflict with Williamson Act lands. However, the County and the City of Gridley determined that there would be a conflict with the Williamson Act within their jurisdictions. While goals, policies, and actions of the general plans could reduce some of these impacts, they would not be reduced to a less-than-significant level. No feasible mitigation is available to prevent these lands from conversion to nonagricultural uses. Consequently, this impact would be significant and unavoidable.

Impact AG-3: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with implementation of the general plans are the same as those disclosed in the discussion of Impact AG-3 under Alternative 1.

Those impacts associated with implementation of the conservation strategy that do not involve grasslands or ricelands would be the same as those disclosed in the discussion of Impact AG-1 under Alternative 2. The location of additional ricelands to be preserved under Alternative 4 is unknown, but they would be located on existing agricultural lands. While the ricelands might not constitute an increase of agricultural land in the Plan Area—because the easements would likely be placed on lands already in rice cultivation—protection under the conservation strategy would ensure that the land would not be converted to nonagricultural uses. Thus, the Alternative 4 would protect a considerable amount of important farmland from the risk of future conversion to nonagricultural uses; moreover, such protection would not result in an incompatible land use such that indirect conversion of farmland might occur.

NEPA Determination: The agricultural protection target of Alternative 4 would protect important farmlands from conversion to nonagricultural uses and the conservation strategy would not result in incompatible land uses with existing farmland. However, the County and the City of Gridley determined that implementation of the general plans would result in other changes in the environment that would convert farmland to nonagricultural uses. Consequently, the effect would be significant and unavoidable.

CEQA Determination: The agricultural protection target of Alternative 4 would protect important farmlands from conversion to nonagricultural uses and the conservation strategy would not result in incompatible land uses with existing farmland. However, the County and the City of Gridley determined that implementation of the general plans would result in other changes in the environment that would convert farmland to nonagricultural uses. Consequently, the effect would be significant and unavoidable.

4.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for agricultural resources is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This analysis considered agricultural and urban development projects, including roadway projects, and water supply development projects; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

This analysis determines whether the covered activities not analyzed in previous environmental documents would result in cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. Such projects have resulted in an increase in agricultural uses in the Plan Area due to conversion of land to agricultural uses. However, in the last few decades, there has been a substantial conversion of agricultural lands to urban and suburban uses in the Plan Area, which has resulted in cumulatively significant effects on agricultural resources.

Alternative 1—No Project (No Plan Implementation)

The Local Agencies determined that cumulatively considerable and significant impacts on agricultural resources would result from the conversion of important farmland to nonagricultural uses. Accordingly, past, present, and reasonably foreseeable future projects—including implementation of the general plan—would result in cumulatively considerable and significant impacts. Therefore, Alternative 1 would result in an incremental contribution to cumulative impacts.

Alternative 2—Proposed Action

The Local Agencies determined that cumulatively considerable and significant impacts on agricultural resources would result from the conversion of important farmland to nonagricultural uses. Accordingly, past, present, and reasonably foreseeable future projects—including implementation of the general plan—would result in cumulatively considerable and significant impacts on agricultural resources. Although the covered activities associated with implementation of the conservation strategy and conservation measures would protect important farmland from conversion to nonagricultural uses, the extent of conversion of agricultural land to nonagricultural uses as a result of covered activities would be significant. Consequently, Alternative 2 would result in a cumulatively considerable contribution to cumulative impacts on agriculture.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

Although the extent of conversion of agricultural lands associated with implementation of the conservation strategy and conservation measures varies among these two alternatives, the mechanism and implications are the same as under Alternative 2. Each of these alternatives would result in a cumulatively considerable contribution to cumulative impacts on agriculture.

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5.1 Affected Environment

This section describes the regulatory and physical environmental setting for air quality and climate change in the Plan Area.

5.1.1 Regulatory Setting

At the federal level, air quality in the United States and California is governed by the Clean Air Act (CAA), which is administered by EPA. Air quality in California also is governed by more stringent regulations in the California Clean Air Act (CCAA), administered by the California Air Resources Board (ARB) and the local air quality management districts. ARB and the local air districts have primary implementation responsibility for both the federal and state air quality standards. Appendix E also summarizes additional regulations related to air quality.

Federal

The federal CAA, promulgated in 1963 and amended several times thereafter, including the 1990 Clean Air Act amendments (CAAA), establishes the framework for modern air pollution control. The act directs EPA to establish National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants. The NAAQS are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety, and the latter to protect environmental values, such as plant and animal life. Table 5-1 summarizes both the NAAQS and California Ambient Air Quality Standards (CAAQS).

The CAA requires states to submit a state implementation plan (SIP) for areas in nonattainment for federal standards. The SIP, which is reviewed and approved by EPA, must demonstrate how the federal standards would be achieved. Failing to submit a plan or secure approval can lead to denial of federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, EPA is directed to prepare a federal implementation plan.

Although there is currently no federal overarching law or policy related to climate change or the regulation of greenhouse gases (GHGs), recent developments suggests that regulation may be forthcoming. Foremost among recent developments has been the U.S. Supreme Court's decision in *Massachusetts v. EPA*, the Endangerment Finding, and Cause or Contribute Finding, which are described below. Despite these findings, the future of GHG regulations at the federal level is still uncertain. Recent legal cases, legislation, and policies related to climate change and GHG regulation at the federal level are summarized in this section.

Table 5-1. National and California Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards ^a	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None	None
	8-hour	0.070 ppm	0.075 ppm	0.075 ppm
Particulate Matter (PM10)	24-hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual mean	20 µg/m ³	None	None
Fine Particulate Matter (PM2.5)	24-hour	None	35 µg/m ³	35 µg/m ³
	Annual mean	12 µg/m ³	15 µg/m ³	15 µg/m ³
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day Average	1.5 µg/m ³	None	None
	Calendar quarter	None	1.5 µg/m ³	1.5 µg/m ³
	3-month average	None	0.15 µg/m ³	0.15 µg/m ³
Sulfates	24-hour	25 µg/m ³	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: California Air Resources Board 2012a.

Note: National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

µg/m³ = micrograms per cubic meter.

ppm = parts per million.

General Conformity

The CAAA requires that all federally funded projects conform to the appropriate SIP so that they do not interfere with strategies employed to attain the NAAQS. The rule applies to federal projects in areas designated as nonattainment areas for any of the six criteria pollutants and in some areas designated as maintenance areas. Project level conformance with the SIP is demonstrated through a general conformity analysis.

- A general conformity determination would be required if a proposed project's total direct and indirect emissions for which the region is classified as a maintenance or nonattainment area for the national standards are below the *de minimis* levels established by the conformity rule, indicated in Tables 5-2 and 5-3.

If the above condition is not met, a general conformity determination must be performed to demonstrate that total direct and indirect emissions for each affected pollutant for which the region

is classified as maintenance or nonattainment for the national standards would conform to the applicable SIP.

However, if the above condition is met, then the requirements for general conformity do not apply, as the proposed action is presumed to conform to the applicable SIP for each affected pollutant. As a result, no further analysis or determination would be required.

Table 5-2. Federal *de minimis* Threshold Levels for Criteria Pollutants in Nonattainment Areas

Pollutant	Emission Rate (tons per year)
Ozone (ROG/VOC or NO _x)	
Serious nonattainment areas	50
Severe nonattainment areas	25
Extreme nonattainment areas	10
Other ozone nonattainment areas outside an ozone transport region ^a	100
Other ozone nonattainment areas inside an ozone transport region ^a	
ROG/VOC	50
NO _x	100
CO: All nonattainment areas	100
SO ₂ or NO ₂ : All nonattainment areas	100
PM10	
Moderate nonattainment areas	100
Serious nonattainment areas	70
PM2.5	
Direct emissions	100
SO ₂	100
NO _x (unless determined not to be a significant precursor)	100
ROG/VOC or ammonia (if determined to be significant precursors)	100
Pb: All nonattainment areas	25

Source: 40 CFR 51.853.

Note: *de minimis* threshold levels for conformity applicability analysis.

CO = carbon monoxide.

NO₂ = nitrogen dioxide.

NO_x = oxides of nitrogen.

Pb = lead particles.

PM10 = particulate matter less than 10 microns in diameter.

PM2.5 = particulate matter less than 2.5 microns in diameter.

ROG = reactive organic gases.

SO₂ = sulfur dioxide.

VOC = volatile organic compounds.

^a Ozone Transport Region is comprised of the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, the Consolidated Metropolitan Statistical Area that includes the District of Columbia and northern Virginia (Section 184 of the Clean Air Act).

Table 5-3. Federal *de minimis* Threshold Levels for Criteria Pollutants in Maintenance Areas

Pollutant	Emission Rate (tons per year)
Ozone (NO _x , SO ₂ or NO ₂)	
All maintenance areas	100
Ozone (ROG/VOC)	
Maintenance areas inside an ozone transport region ^a	50
Maintenance areas outside an ozone transport region ^a	100
CO: All maintenance areas	100
PM10: All maintenance areas	100
PM2.5	
Direct emissions	100
SO ₂	100
NO _x (unless determined not to be a significant precursor)	100
ROG/VOC or ammonia (if determined to be significant precursors)	100
Pb: All maintenance areas	25

Source: 40 CFR 51.853.

Note: *de minimis* threshold levels for conformity applicability analysis.

CO = carbon monoxide.

NO₂ = nitrogen dioxide.

NO_x = oxides of nitrogen.

Pb = lead particles.

PM10 = particulate matter less than 10 microns in diameter.

PM2.5 = particulate matter less than 2.5 microns in diameter.

ROG = reactive organic gases.

SO₂ = sulfur dioxide.

VOC = volatile organic compounds.

^a Ozone Transport Region is comprised of the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, the Consolidated Metropolitan Statistical Area that includes the District of Columbia and northern Virginia (Section 184 of the Clean Air Act).

Massachusetts et al. v. U.S. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations, sued to force EPA to regulate GHGs as a pollutant pursuant to the CAA in *Massachusetts et al. v. Environmental Protection Agency* 549 US 497 (2007). The court ruled that the plaintiffs had standing to sue, GHGs fit within the CAA's definition of a pollutant, and EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA.

Update to Corporate Average Fuel Economy Standards (2009)

The new Corporate Average Fuel Economy (CAFE) standards incorporate stricter fuel economy standards promulgated by the State of California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25% by 2016. EPA, National Highway Traffic Safety Administration (NHTSA), and ARB are currently working together on a joint rulemaking to establish GHG emissions standards for 2017 to 2025 model year passenger

vehicles, which require an industry-wide average of 54.5 miles per gallon in 2025 (U.S. Environmental Protection Agency et al. 2011a). The official proposal was released by both EPA and NHTSA on December 1, 2011. The public comment period ended on February 13, 2012 (U.S. Environmental Protection Agency et al. 2011b).

EPA Rule: Mandatory Reporting of Greenhouse Gases (2009)

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year (FY) 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), which required EPA to develop “mandatory reporting of greenhouse gasses above appropriate thresholds in all sectors of the economy...” The Reporting Rule would apply to most entities that emit 25,000 metric tons of CO₂e or more per year. Starting in 2010, facility owners are required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also would mandate recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports.

EPA Endangerment Finding and Cause or Contribute Finding (2009)

On December 7, 2009, EPA signed the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the CAA. Under the Endangerment Finding, EPA finds that the current and projected concentrations of the six key well-mixed GHGs—CO₂, CH₄, N₂O, PFCs, SF₆, and HFCs—in the atmosphere threaten the public health and welfare of current and future generations. Under the Cause or Contribute Finding, EPA finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing EPA’s proposed new corporate average fuel economy standards for light-duty vehicles, which EPA proposed in a joint proposal including the Department of Transportation’s proposed corporate average fuel-economy standards. EPA is still currently in its rule development process for the updated light-duty standards, and the comment period for the updated light-duty standards was recently extended to February 13, 2012.

Council on Environmental Quality Draft NEPA Guidance (2010)

On February 19, 2010, the Council on Environmental Quality (CEQ) issued draft NEPA guidance on the consideration of the effects of climate change and GHG emissions. This guidance advises federal agencies that they should consider opportunities to reduce GHG emissions caused by federal actions, adapt their actions to climate change effects throughout the NEPA process, and address these issues in their agency NEPA procedures. Where applicable, the scope of the NEPA analysis should cover the GHG emissions effects of a proposed action and alternative actions, as well as the relationship of climate change effects on a proposed action or alternatives. The draft guidance suggests that the effects of projects directly emitting GHGs in excess of 25,000 tons annually be considered in a qualitative and quantitative manner. The CEQ does not propose this reference as a threshold for determining significance, but as “a minimum standard for reporting emissions under the CAA.” The draft guidance also recommends that the cumulative effects of climate change on the proposed project be evaluated. The CEQ guidance is still considered draft as of the writing of this document and is not an official CEQ policy document (Council on Environmental Quality 2010).

State

ARB is responsible for meeting the state requirements of the federal CAA, administering the CCAA, and establishing the CAAQS. The CCAA require all air districts in the state to endeavor to meet the CAAQS as expeditiously as practicable but, unlike the federal CAA, does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards. CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The CAAQS and NAAQS are listed together in Table 5-1.

ARB regulates mobile air pollution sources, such as motor vehicles, and is responsible for setting emission standards for vehicles sold in California and other sources, such as consumer products and certain off-road equipment. ARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county levels.

The CCAA of 1988 substantially added to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of “indirect and area-wide sources” of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures (TCMs).

The State of California has adopted legislation, and regulatory agencies have enacted policies, addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation and policy activity is not directed at citizens or jurisdictions but rather establishes a broad framework for the state’s long-term GHG mitigation and climate change adaptation program. The governor has issued several executive orders (EOs) related to the state’s evolving climate change policy.

State CEQA Guidelines (2010)

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of the project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds, but require the preparation of an EIR if “there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements” (§15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency’s decision; implementation of project features, project design, or other measures which are incorporated into the project to substantially reduce energy consumption or GHG emissions; offsite measures, including offsets that are not otherwise required, to mitigate a project’s emissions; and measures that sequester carbon or carbon-equivalent emissions.

Local

Butte County

The Butte County Air Quality Management District (BCAQMD), along with ARB, is responsible for implementing NAAQS and CAAQS and for ensuring that these standards are met. The Butte County Association of Governments is coordinating with BCAQMD to implement strategies for air quality improvement through implementation of the Metropolitan Transportation Plan. Because of the regional nature of the O₃ conditions in the Sacramento Valley, BCAQMD is also coordinating efforts with the Sacramento Valley Air Basin Control Council's Technical Advisory Committee, the Sacramento Area Council of Governments, and the Sacramento Metropolitan Air Quality Management District.

The BCAQMD has developed measures to control PM, consistent with SB 656¹ and is in the process of developing a PM_{2.5} air quality attainment plan. The air district assisted in development of the *2004 Revisions to the California State Implementation Plan for Carbon Monoxide*. This document was prepared by ARB and demonstrates that 10 nonattainment/maintenance areas, including the Chico urbanized area, attained the 8-hour CO standard between 1992 and 1995 and describes how these areas will continue to maintain compliance with the standard (California Air Resources Board 2004).

The BCAQMD has adopted local rules to reduce emissions throughout the district. Portions of the proposed action in the county may be subject to the following, as well as other, rules and regulations. (California Air Resources Board 2013a)

- **Rule 200 (Nuisance):** Prohibits the discharge of air containments that cause injury, detriment, nuisance, or annoyance.
- **Rule 201 (Visible Emissions):** Prohibits the discharge of air containments for a period or periods aggregating more than 3 minutes in any 1 hour.
- **Rule 202 (Particulate Matter Concentrations):** Prohibits the discharge of PM in excess of 0.3 grain per cubic foot of gas at standard conditions.
- **Rule 205 (Fugitive Dust Emissions):** Limits the quantity of PM through best management practices.
- **Rule 252 (Stationary Internal Combustion Engines):** Limits emissions of NO_x and CO from stationary internal combustion engines (if construction requires engines rated at more than 50 brake horsepower).
- **Rule 309 (Wildland Vegetation Management Burning):** Establishes standards for the use of wildland vegetation management burning, range improvement burning, and forest management burning.

The BCAQMD has specified significance thresholds in its *CEQA Air Quality Handbook* to determine air quality impacts for projects located within district boundaries. The BCAQMD has three levels of emission thresholds, and depending on the emissions produced from a proposed project, different mitigation measures would be required. The thresholds are intended for operational emissions, but

¹ Senate Bill 656 was approved on October 8, 2003 and requires ARB and local air districts to identify, develop, and adopt a list of the most readily available, feasible, and cost-effective control measures for PM₁₀ and PM_{2.5}.

can be used to evaluate construction emissions if construction will last longer than 12 months. (Butte County Air Quality Management District 2008:2-2, 2-4.)

The BCAQMD has neither adopted rules nor regulations establishing limits on GHG emissions from specific projects nor thresholds of significance for GHG emissions at the project level. While BCAQMD CEQA Handbook does include a brief discussion about consistency with AB 32, the general impacts of climate change, and the GHG policy guidance from the California Air Pollution Controls Officers Association, the district only recommends that a qualitative discussion of GHGs be included for air quality analyses of “sizable projects” (Butte County Air Quality Management District 2008).

The County addresses GHG emissions and climate change in a variety of policies and programs throughout its General Plan 2030 (Butte County 2012). The County has expressed a commitment toward reducing its impact on climate change. This commitment is extended to the cities under County jurisdiction, including the cities of Biggs, Gridley, Chico, and Oroville, which are located in the Plan Area.

City of Biggs

The BCAQMD has jurisdiction over air quality and GHG emissions in the county, which includes the city of Biggs. See Butte County regulations above for further details on BCAQMD’s treatment of GHG emissions.

The City of Biggs has identified several policies that target GHG emissions in the Conservation and Recreation Element of the City’s General Plan Update. These policies will help the City minimize criteria pollutant and GHG emissions (City of Biggs 2011).

City of Gridley

The BCAQMD has jurisdiction over air quality and GHG emissions in the county, which includes the city of Gridley. See Butte County regulations, above, for further details on BCAQMD’s treatment of GHG emissions.

The City’s Code of Ordinances does not contain ordinances directed specifically at GHG emissions; however, Gridley’s 2030 General Plan includes an appendix that outlines policies that can be implemented to mitigate GHG emissions or adapt to climate change (City of Gridley 2010). The general plan also considers agriculture and flooding safety concerns in regard to climate change adaptation.

City of Chico

The BCAQMD has jurisdiction over air quality and GHG emissions in the county, which includes the city of Chico. See Butte County regulations, above, for further details on BCAQMD’s treatment of GHG emissions.

The City of Chico’s 2030 General Plan includes policies that will help the City minimize criteria pollutant and GHG emissions. The Open Space and Environment Element includes a number of policies that seek to improve air quality reduce GHG emissions (City of Chico 2011a).

City of Oroville

The BCAQMD has jurisdiction over air quality and GHG emissions in the county, which includes the city of Oroville. See Butte County regulations, above, for further details on BCAQMD's treatment of GHG emissions.

The Open Space, Natural Resources and Conservation Element in the City's 2030 General Plan identifies a number of strategies aimed at improving air quality and reducing GHG emissions (City of Oroville 2009).

5.1.2 Environmental Setting

This section discusses the existing conditions as of May 2012 related to GHG emissions and, to a lesser extent, climate change in the Plan Area.

Climate and Meteorology

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources. Meteorological and topographical conditions are also important factors. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

Butte County is located in the Sacramento Valley Air Basin (SVAB). The SVAB includes Butte, Sacramento, Sutter, and Yolo Counties and parts of Solano, Placer, and El Dorado Counties. The SVAB is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and Sierra Nevada. The San Joaquin Valley Air Basin is located to the south. The county, although north of the Sacramento metropolitan area, often suffers from transport of pollutants from the Sacramento area.

The SVAB has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters. During summer, the wide, flat expanse of the Central Valley provides an ideal environment for the formation of photochemical smog. Hot, cloudless days of low-velocity winds allow sunlight to combine with photochemically reactive hydrocarbons, or ozone precursors (reactive organic gases [ROG]) and nitrogen oxides (NO_x), produced throughout the valley, resulting in an increase in ozone, particularly during late afternoons. Winds arising later may help dispel pollutants, but may also transfer it to other areas from Sacramento to Butte County.

During winter, the north Pacific storm track intermittently dominates valley weather, and fair weather alternates with periods of extensive clouds and precipitation. Also characteristic of winter weather in the valley are periods of dense and persistent low-level fog, which is most prevalent between storms. The frequency and persistence of heavy fog in the valley diminishes with the approach of spring. The average yearly temperature range for the Sacramento Valley is 20–115°F, with summer high temperatures often exceeding 90°F and winter low temperatures occasionally dropping below freezing.

In general, the prevailing wind in the Sacramento Valley is from the southwest because of marine breezes flowing through the Carquinez Strait. The Carquinez Strait is the major corridor for air moving into the Sacramento Valley from the west. Incoming airflow strength varies daily with a pronounced diurnal cycle. Influx strength is weakest in the morning and increases in the evening.

The Schultz Eddy, an eddy formed when incoming marine air is diverted by mountains on the valley's western side, is associated with the influx of air through the Carquinez Strait. The eddy contributes to the formation of a low-level southerly jet between 500 and 1,000 feet above the surface that is capable of speeds in excess of 35 mph. This jet is important for air quality in the Sacramento Valley because of its ability to transport air pollutants over large distances.

The SVAB's climate and topography contribute to the formation and transport of photochemical pollutants throughout the region. The region experiences temperature inversions that limit atmospheric mixing and trap pollutants, resulting in high pollutant concentrations near the ground surface. Generally, the lower the inversion base height from the ground and the greater the temperature increase from base to top, the more pronounced the inhibiting effect of the inversion will be on pollutant dispersion. Consequently, the highest concentrations of photochemical pollutants occur from late spring to early fall, when photochemical reactions are greatest because of more intense sunlight and the lower altitude of daytime inversion layers. Surface inversions (0–500 feet above sea level) are most frequent during winter, and subsidence inversions (1,000–2,000 feet above sea level) are most common in summer.

It is expected that the regional climate will change as a result of increasing GHG concentrations in the atmosphere. These changes are discussed in the following sections.

Criteria Pollutants

Carbon Monoxide

Carbon monoxide (CO), a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. Automobile exhaust and residential wood burning in fireplaces and woodstoves emit most of the CO in the county. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follows the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor-vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. Because motor vehicles are the dominant source of CO emissions, CO hotspots are normally located near roads and freeways with high traffic volume. The highest CO concentrations measured in the county are typically recorded during the winter.

Ozone

Ground-level ozone (O₃) is the principal component of smog. Ozone is not directly emitted into the atmosphere, but instead forms through a photochemical reaction of ROG and NO_x, which are known as O₃ precursors. Ozone levels are highest from late spring through autumn when precursor emissions are high and meteorological conditions are warm and stagnant.

Motor vehicles create the majority of ROG and NO_x emissions in the county. Exposure to levels of O₃ above current ambient air quality standards can lead to human health effects such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. Outdoor workers, athletes, children, and others who spend greater amounts of time outdoors during smoggy periods are at greatest risk for harmful health effects. Elevated O₃ levels

can reduce crop and timber yields, as well as damage native plants. Ozone can also damage materials such as rubber, fabrics, and plastics.

Nitrogen Dioxide

NO₂, a reddish-brown gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like O₃, NO₂ is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as nitrogen oxides (NO_x) and are major contributors to O₃ formation. NO₂ also contributes to the formation of PM₁₀ (see discussion of PM₁₀ below). Levels of NO₂ in the county are relatively low.

Sulfur Oxides

Sulfur oxides, primarily SO₂, are a product of high-sulfur fuel combustion. The main sources of SO₂ are coal and oil used in power stations, in industries, and for domestic heating, as well as motor vehicle exhaust and other combustion processes. Industrial chemical manufacturing is another source of SO₂. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children.

Suspended Particulate Matter

Particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter (PM₁₀) are considered respirable particulate matter. Fine particles are 2.5 microns or less in diameter (PM_{2.5}) and can contribute significantly to regional haze and reduction of visibility. Inhalable particulates come from smoke, dust, aerosols, and metallic oxides. Although particulates are found naturally in the air, most PM found in the area is emitted either directly or indirectly by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas. Most PM_{2.5} is comprised of combustion products such as smoke.

Extensive research reviewed by ARB indicates that exposure to outdoor PM₁₀ and PM_{2.5} levels exceeding current ambient air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses. Besides reducing visibility, the acidic portion of PM (nitrates, sulfates) can harm crops, forests, aquatic and other ecosystems.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel PM and benzene near freeways). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by ARB and are listed as carcinogens either under the state's Proposition 65 or under the federal Hazardous Air Pollutants program. California adopted a comprehensive diesel risk reduction program. EPA adopted low sulfur diesel fuel standards that went into effect in June 2006 and will reduce diesel PM substantially.

In cooler weather, smoke from residential wood combustion can be a source of TACs. Localized high TAC concentrations can result when cold, stagnant air traps smoke near the ground; with no wind, the pollution can persist for many hours. This occurs in sheltered valleys during the winter. Wood smoke also contains a significant amount of PM10 and PM2.5. Wood smoke is an irritant and can worsen asthma and other chronic lung problems.

Existing Air Quality Conditions

Existing air quality conditions in the Plan Area can be characterized in terms of the federal and state air quality standards and by monitoring data collected in the region. EPA and ARB maintain an extensive network of monitoring stations throughout California. Table 5-4 presents pollutant concentrations for western Butte County measured at the Chico, Manzanita Avenue Monitoring Station for the most recent 3-year period for which there is data (2009–2011). Because the Plan Area includes only western Butte County, monitoring data from the Paradise Fire Station and Paradise Airport monitoring stations were not included. As shown in Table 5-4, the county has experienced violations of the ozone, PM2.5, and PM10 standards.

Table 5-4. Monitored Pollutant Concentrations at the Chico Manzanita Avenue Monitoring Station, 2009–2011

Pollutant Standards	2009	2010	2011
1-Hour Ozone			
Maximum 1-hour concentration (ppm)	0.080	0.077	0.080
Second-highest 1-hour concentration (ppm)	0.080	0.074	0.078
1-hour California designation value	0.09	0.09	0.08
1-hour expected peak day concentration	0.088	0.085	0.073
Number of days standard exceeded ^a			
CAAQS 1-hour (>0.09 ppm)	0	0	0
8-Hour Ozone			
National maximum 8-hour concentration (ppm)	0.073	0.070	0.068
National second-highest 8-hour concentration (ppm)	0.070	0.069	0.068
State maximum 8-hour concentration (ppm)	0.073	0.071	0.068
State second-highest 8-hour concentration (ppm)	0.071	0.069	0.068
8-hour national designation value	0.071	0.069	0.068
8-hour California designation value	0.083	0.081	0.073
8-hour expected peak day concentration	0.083	0.081	0.074

Pollutant Standards	2009	2010	2011
Number of days standard exceeded^a			
NAAQS 8-hour (>0.075 ppm)	0	0	0
CAAQS 8-hour (>0.070 ppm)	2	1	0
Nitrogen Dioxide (NO₂)			
State maximum 1-hour concentration (ppm)	0.037	0.046	0.041
State second-highest 1-hour concentration (ppm)	0.037	0.040	0.040
Annual average concentration (ppm)	0.008	0.007	0.008
Number of days standard exceeded			
CAAQS 1-hour (0.18 ppm)	0	0	0
Carbon Monoxide (CO)			
National ^b maximum 8-hour concentration (ppm)	2.35	1.80	2.14
National ^b second-highest 8-hour concentration (ppm)	1.99	1.59	1.73
California ^c maximum 8-hour concentration (ppm)	2.35	1.80	2.14
California ^c second-highest 8-hour concentration (ppm)	1.99	1.59	1.73
Maximum 1-hour concentration (ppm)	2.8	2.5	2.6
Second-highest 1-hour concentration (ppm)	2.8	2.3	2.5
Number of days standard exceeded^a			
NAAQS 8-hour (>9 ppm)	0	0	0
CAAQS 8-hour (>9.0 ppm)	0	0	0
NAAQS 1-hour (>35 ppm)	0	0	0
Particulate Matter (PM10)^d			
National ^b maximum 24-hour concentration (µg/m ³)	48.2	38.3	58.4
National ^b second-highest 24-hour concentration (µg/m ³)	43.4	32.7	56.6
State ^c maximum 24-hour concentration (µg/m ³)	47.7	40.9	61.9
State ^c second-highest 24-hour concentration (µg/m ³)	45.9	33.8	60.2
State annual average concentration (µg/m ³) ^e	20.1	17.0	22.4
Number of days standard exceeded^a			
NAAQS 24-hour (>150 µg/m ³) ^f	0	0	0
CAAQS 24-hour (>50 µg/m ³) ^f	0	0	4
Particulate Matter (PM2.5)			
National ^b maximum 24-hour concentration (µg/m ³)	35.1	31.9	51.8
National ^b second-highest 24-hour concentration (µg/m ³)	30.0	29.0	46.2
State ^c maximum 24-hour concentration (µg/m ³)	59.2	39.8	66.0
State ^c second-highest 24-hour concentration (µg/m ³)	54.2	38.6	62.8
National annual designation value (µg/m ³)	12.4	11.5	10.1
National annual average concentration (µg/m ³)	10.0	8.0	12.0
State annual designation value (µg/m ³)	18	18	15
State annual average concentration (µg/m ³) ^e	13.0	10.9	14.6

Pollutant Standards	2009	2010	2011
Number of days standard exceeded ^a			
NAAQS 24-hour (>35 µg/m ³)	0	0	6

Sources: California Air Resources Board 2013b; U.S. Environmental Protection Agency 2013.

CAAQS = California ambient air quality standards.

NAAQS = national ambient air quality standards.

NA = insufficient data available to determine the value.

^a An exceedance is not necessarily a violation.

^b National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

^c State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

^d Measurements usually are collected every 6 days.

^e State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

^f Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been truncated for presentation.

Attainment Status

Local monitoring data (Table 5-4) is used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are further defined as follows.

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past, but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.

Table 5-5 summarizes the attainment status of the county with regard to the federal and state standards.

Table 5-5. Federal and State Attainment Status for Butte County

Pollutant	Butte County	
	Federal Standard	State Standard
O ₃ , 1 hour	No Standard	Moderate Nonattainment
O ₃ , 8-hour	Partial Marginal Nonattainment ^a	Nonattainment
PM ₁₀	Attainment	Nonattainment
PM _{2.5}	Partial Nonattainment ^a	Nonattainment
CO	Partial Moderate Maintenance ^a	Attainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment

Sources: U.S Environmental Protection Agency 2012; California Air Resources Board 2012b.

^a Designation only applies to the western portion of the County.

Sensitive Receptors

Sensitive receptors are locations where human populations, especially children, seniors, and sick persons are found, and there is reasonable expectation of continuous human exposure according to the averaging period for ambient air quality standards. Typical sensitive receptors include residences, hospitals, and schools. In general, these sensitive receptors are concentrated in the major cities and small towns in Butte County. The cities of Biggs, Gridley, Chico, and Oroville contain concentrations of sensitive receptors. In addition, scattered rural residences are also located throughout the undeveloped or rural lands.

Greenhouse Gas Emissions and Climate Change

GHGs trap infrared radiation emitted from the earth's surface, which otherwise would be reflected into space. Anthropogenic emissions of GHGs, resulting in ambient concentrations outside of what can be considered the natural range, are thought to be responsible for the enhancement of the natural greenhouse effect, or global warming. A warmer lower atmosphere induces changes in weather patterns and increased sea levels as a result of the melting of ice in the polar regions. This phenomenon is often referred to as *climate change*.

The Intergovernmental Panel on Climate Change (IPCC) lists carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) as six of the major GHGs from anthropomorphic sources. These gases are also listed under the CAA and AB 32. A brief description of the sources of each GHG follows.

Carbon Dioxide

CO₂ is the most abundant anthropogenic GHG, accounting for more than 75% of all anthropogenic GHG emissions. Its long atmospheric lifetime (on the order of decades to centuries) ensures that atmospheric concentrations of CO₂ will remain elevated for decades after GHG mitigation efforts are promulgated (Intergovernmental Panel on Climate Change 2007a). Primary sources of anthropogenic CO₂ in the atmosphere include the burning of fossil fuels (including motor vehicles), cement production, and land use changes, including deforestation. Atmospheric CO₂ has increased

from pre-industrial levels of 280 ppm to a concentration of 379 ppm in 2005 (Intergovernmental Panel on Climate Change 2007b).

Methane

CH₄, the main component of natural gas, is the second most abundant GHG and has a global warming potential (GWP), 21 times that of CO₂ (Intergovernmental Panel on Climate Change 1996). Anthropogenic emissions of CH₄ are the result of anaerobic emissions from rice paddies, cattle enteric fermentation, combusting natural gas, landfilled waste, and mining coal (National Oceanic and Atmospheric Administration 2010). Atmospheric CH₄ has increased from pre-industrial levels of 715 ppb to a concentration of 1,774 ppb in 2005 (Intergovernmental Panel on Climate Change 2007b).

Nitrous Oxide

N₂O is a powerful GHG, with a GWP 310 times that of CO₂ (Intergovernmental Panel on Climate Change 2007a). One of the major sources of N₂O is biological decomposition and agriculture, such as from manure and fertilizer application. N₂O is also a by-product of vehicle emissions and fuel-fired power plants. N₂O concentrations in the atmosphere have increased 18% from pre-industrial levels of 270 ppb to 319 ppb in 2005 (Intergovernmental Panel on Climate Change 2007b).

High-Global Warming Potential Gases

High GWP gases, such as HFCs, PFCs, and SF₆, are human-made chemicals used in a variety of industries and applications, such as refrigeration (HFCs), aluminum production (PFCs), and electricity transmission (SF₆). Some of these gases have GWP several orders of magnitude greater than CO₂ and can persist in the atmosphere for millennia. SF₆ is the most powerful of the GHGs listed in the IPCC studies, with a GWP of 23,900 (Intergovernmental Panel on Climate Change 2007a). Table 5-6 summarizes the lifetimes and GWPs of CO₂, CH₄, N₂O, and SF₆.

Table 5-6. Lifetimes and Global Warming Potentials

Greenhouse Gas	Global Warming Potential (100 years)	Lifetime (years)	2005 Atmospheric Abundance
Carbon Dioxide (ppm)	1	50–200	379
Methane (ppt)	21	9–15	1.7
Nitrous oxide (ppt)	310	120	0.32
Sulfur Hexafluoride (ppt)	23,900	3,200	5.6

Sources: Intergovernmental Panel on Climate Change 1996, 2001:388–390, 2007.
ppt = parts per trillion.

Greenhouse Gas Emissions Inventories

A GHG inventory is a quantification of all GHG emissions and sinks within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (i.e., for global and national entities) or on a small scale (i.e., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

Table 5-7 outlines the most recent global, national, statewide, and local GHG inventories to help contextualize the magnitude of potential proposed action-related emissions.

Table 5-7. Global, National, State, and Local GHG Emissions Inventories

Emissions Inventory	CO ₂ e (metric tons)
2004 IPCC Global GHG Emissions Inventory	49,000,000,000
2011 EPA National GHG Emissions Inventory	6,708,300,000
2010 ARB State GHG Emissions Inventory	488,600,000
2006 Butte County Unincorporated GHG Emissions Inventory	601,266

Sources: Intergovernmental Panel on Climate Change 2007a; U.S. Environmental Protection Agency 2013; California Air Resources Board 2013c; Butte County 2010.
CO₂e = carbon dioxide equivalent.

Regional Emissions

GHG inventories typically are performed at the city, county or air district level and thus an exact overlap of the Plan Area with an existing GHG inventory is not possible. Sources of GHG emissions in the county include on-road transportation (49.2%), electricity usage (17.8%), agricultural vehicles and equipment (12.8%), natural gas (10.3%), off-road vehicles and equipment (6.8%), landfills (2.4%), and stationary sources (0.7%). Similar to the pattern of emissions at the state level, on-road vehicle travel, building energy use, and agricultural activities are the largest sources of GHG emissions in the Plan Area (Butte County 2010).

GHG emissions from agriculture, especially from rice production, are a unique characteristic of the Plan Area. Agricultural land makes up the vast majority of the Plan Area and is also a significant economic focus in the county. Rice cultivation results in considerably higher levels of GHGs compared to other crops because of the need to fully inundate crops. Perpetually flooded environments allow the anaerobic fermentation of soil organic matter and the release of CH₄. Because of the significant acreage devoted to rice production in the Plan Area and because CH₄ has a GWP 21 times that of CO₂, agriculture likely represents a significant source of emissions in the Plan Area (Butte County 2010).

5.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for air quality and climate change in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).² The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

² These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

5.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on air quality and climate change are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on air quality and climate change.

In adopting the EIRs for the local general plans, each Local Agency determined that the programmatic impacts on air quality would be mitigated to a less-than-significant level where possible through the implementation of general plan policies and the adoption of identified mitigation measures. For certain impacts, it was determined that there would be significant and unavoidable impacts resulting from air pollutant emissions.

It is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of the respective general plans and would be subject to any mitigation measures identified such that impacts would be adequately mitigated to the extent identified in the general plan EIRs. Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on air quality could occur primarily during construction or maintenance of these activities. The methodology for evaluating impacts on air quality also incorporates standard best management practices (BMPs) required by Caltrans during construction of transportation projects. These BMPs are summarized in Appendix D. The analysis assumes that Caltrans would implement these BMPs, when appropriate, during transportation projects within the Plan Area.

Air quality impacts associated with the proposed BRCP and alternatives would result in construction, operational, toxic air contaminant, and odor emissions resulting from equipment exhaust and fugitive dust. These potential impacts would occur on a temporary basis during construction and on a limited basis during operation and maintenance. Impacts associated with construction and operational emissions, toxic air contaminants, and odor emissions, were evaluated on a qualitative basis.

5.2.2 Significance Criteria

Federal Criteria

Criteria Pollutants

The air quality Plan Area is in federally classified nonattainment and/or maintenance areas for ozone, CO, and PM_{2.5} (Table 5-5). Consequently, to fulfill general conformity requirements, a General Conformity evaluation would be required to identify whether the total ozone, CO, and PM_{2.5}

emissions for the action alternatives are subject to the General Conformity rule. The General Conformity evaluation must consider both direct and indirect sources of emissions for all nonattainment and/or maintenance pollutants, which include regulated precursor emissions. Regulated precursor emissions for ozone include ROG and NO_x. Regulated precursor emissions for PM_{2.5} include SO₂, NO_x, and ROG. Therefore, the General Conformity analysis evaluates each of these direct and indirect (precursor) emissions.

The General Conformity evaluation is made by comparing all emission sources (e.g., haul trucks, off-road equipment) to the applicable General Conformity *de minimis* thresholds. It should be noted that because power plants are subject to New Source Review permitting requirements, which are exempt from the General Conformity rule, emissions associated with electricity generation are not included in the General Conformity evaluation. Table 5-8 summarizes the *de minimis* thresholds applicable to the proposed action, based on the region's attainment status (Table 5-5) and the *de minimis* threshold values presented in Tables 5-2 and 5-3. Any emissions in excess of those indicated in Table 5-8 would have an adverse effect on air quality.

Table 5-8. Federal *de minimis* Thresholds (tons per year)

Pollutant	Northern Sacramento Valley Air Basin
NO _x	100
VOC/ROG	100
CO	100
PM ₁₀	–
PM _{2.5}	100
SO ₂	–

Greenhouse Gases

CEQ's draft guidance identifies 25,000 metric tons of CO₂e as "a minimum standard for reporting emissions under the Clean Air Act" and "an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public" (Council on Environmental Quality 2010). It is a useful tool to evaluate whether emissions associated with the proposed action may be significant, as CEQ guidance indicates that it is "an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs" (Council on Environmental Quality 2010). In this analysis, emissions in excess of 25,000 metric tons of CO₂e were considered to result in an adverse effect related to climate change.

State Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

BCAQMD Thresholds

Criteria Pollutants

According to the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. BCAQMD has specified significance thresholds in its *CEQA Air Quality Handbook* to determine air quality effects of projects located within district boundaries. BCAQMD has three levels of emission thresholds, and depending on the emissions produced from a proposed project, different mitigation measures are required (Table 5-9). The thresholds are intended for operational emissions but can be used to evaluate construction emissions if construction lasts longer than 12 months (Butte County Air Quality Management District 2008).

Table 5-9. BCAQMD Significance Thresholds (pounds/day)

Pollutant	Level A	Level B	Level C
NO _x	<= 25	> 25	>137
ROG	<= 25	> 25	>137
PM10	<= 80	> 80	>137
Level of significance	Potentially significant	Potentially significant	Significant
Level of significance after implementation of feasible mitigation	Less than significant	Less than significant	Significant

Source: Butte County Air Quality Management District 2008.

Should a project emit greater than 25 lbs/day of ROG and/or NO_x and greater than 80 lbs/day of PM10, the project would have the potential to cause significant air quality impacts, and all best available mitigation measures (BAMM) and standard mitigation measures (SMM), as necessary, should be implemented. Projects with emissions below these levels would only need to implement SMMs. Should a project emit greater than 137 lbs/day of ROG, NO_x, and PM10, the project would have significant air quality impacts.

Greenhouse Gases

The BCAQMD has not established thresholds to define a "significant amount" of GHGs within the context of CEQA. The Bay Area Air Quality Management District (BAAQMD), South Coast Air Quality

Management District (SCAQMD), and San Joaquin Valley Air Pollution Control District (SJVAPCD) have adopted GHG thresholds (Table 5-10). To evaluate significance, this analysis draws upon the adopted GHG thresholds in Table 5-10 to evaluate GHG emissions. In accordance with the State CEQA guidelines, the analysis includes a cumulative, rather than project-level, evaluation of climate change impacts.

Table 5-10. Adopted and Draft Greenhouse Gas Thresholds

Agency	Threshold	Application
BAAQMD	1,100 (metric tons/year)	Development projects (operational emissions)
	Compliance with GHG reduction strategy	
	4.6 metric tons/service population/year	
SJVAPCD	25,000 (metric tons/year)	Stationary source projects (operational emissions)
	Compliance with GHG reduction strategy	
	Implementation of best performance standards	
Sacramento County (Draft)	29% reduction in GHG emissions relative to business-as-usual conditions ^a	Transportation projects
	4.56 metric tons per capita ^b	

Sources: Bay Area Air Quality Management District 2010; San Joaquin Valley Air Pollution Control District 2009; Sacramento County 2010.

^a Defined as emissions that would occur if no GHG mitigation measures were implemented.

^b This threshold is based on a per capita approach. Consequently, it is difficult to apply this threshold to the proposed project—there is not a means of identifying the population served by the project, particularly since the project is intended to provide a transportation link across the Sacramento and into El Dorado counties.

5.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Section 2.3.1, *Alternative 1—No-Action Alternative (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. The urban development and other projects described in the Local Agencies' general plans and general plan EIRs would take place under this alternative. This includes construction of residential, commercial, and industrial development; construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, impacts on air quality and climate change associated with the conservation strategy and conservation measures would not occur. In addition, none of the

Avoidance and Minimization Measures included in the BRCP would be implemented under Alternative 1, and thus would not reduce construction air emissions.

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—The County’s general plan EIR concluded that implementation of General Plan 2030 would not conflict with or obstruct implementation of the Northern Sacramento Valley Planning Area 2006 Air Quality Attainment Plan (NSVPA Plan) because population and pollutant emissions resulting from implementation of the general plan would not exceed BCAG’s growth estimates (Butte County 2010). There are agricultural service project activities and waste activities associated with Butte County that could result in pollutant emissions. However, these activities are discussed in the general plan, and the impacts associated with these activities are analyzed in the general plan EIR. Therefore, implementation of the general plan, including implementation of agricultural service project activities and waste activities, would not conflict with or obstruct implementation of the applicable air quality plan.

City of Chico—The City of Chico’s general plan EIR assessed whether land use activities associated with implementation of the City’s general plan would conflict with or obstruct implementation of the NSVPA Plan. Wastewater development project activities and maintenance activities associated with the city of Chico could result in pollutant emissions. However, these activities are discussed in the general plan, and the impacts associated with these activities are analyzed in the general plan EIR. The EIR concluded that the general plan was designed so that land use activities would not conflict with the NSVPA Plan (City of Chico 2011b). Therefore, implementation of the general plan, including wastewater development project activities and maintenance activities, would not conflict with or obstruct implementation of the applicable air quality plan.

City of Oroville—The City of Oroville’s general plan EIR determined that activities in the general plan would be associated with temporary construction emissions that would generate ROG, NO_x, CO, and PM (City of Oroville 2009). These emissions could potentially conflict with the NSVPA Plan. Therefore, implementation of the general plan would conflict with or obstruct implementation of the applicable air quality plan.

City of Gridley—Source emissions from wastewater development project activities and maintenance activities associated with the city of Gridley are discussed in the City’s general plan, and the impacts associated with these activities are analyzed in the general plan EIR. The general plan EIR determined that mobile and area source emissions that would result from implementation of the general plan are not taken into account in the existing air quality plan. Consequently, the activities in the general plan would conflict with the NSVPA Plan. Therefore, implementation of the general plan would conflict with or obstruct implementation of the applicable air quality plan.

City of Biggs—The City of Biggs’s general plan EIR determined that land use activities associated with implementation of the general plan would conflict with the NSVPA Plan (City of Biggs 2013). Therefore, implementation of the general plan would conflict with or obstruct implementation of the applicable air quality plan.

Transportation Facilities—Transportation facility construction and maintenance activities include capacity enhancing projects; intersection improvements; bridge improvements; and rehabilitation

and minor improvements to existing roadways, bike paths, parking facilities, transit facilities, rail facilities, airports, and other infrastructure. These activities could have an impact on air quality as a result of the substantial amount of heavy-duty diesel-powered construction equipment used that would generate air pollution emissions and earth movement that could generate dust. Projects would be undertaken by Caltrans, BCAG, and the Local Agencies. This impact could be significant if construction activities were such that pollutant emissions would still exceed the general conformity *de minimis* thresholds indicated in Table 5-8 or BCAQMD's thresholds indicated in Table 5-9. Standard construction mitigation measures from BCAQMD's CEQA guidelines would reduce the amount of exhaust generated from construction equipment, while BCAQMD's fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). In addition all BMPs required by Caltrans to control emissions, as described in Appendix D, would be implemented during their projects. However, emissions may not be reduced below the thresholds in Table 5-8 or 5-9 because of construction duration and number of heavy duty equipment used. Therefore, is anticipated that these activities would conflict with the NSVPA Plan.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—Recurring maintenance activities primarily include those undertaken by the Local Agencies and would include vegetation removal on levees, vegetation clearing using herbicides and potential tree removal. It could also include discing for firebreaks. These activities would not result in substantial air pollutant emissions, as heavy-duty equipment is not anticipated to be regularly used or would be used intermittently and infrequently (i.e., prior to fire season). No emissions or very limited emissions would be emitted and standard construction mitigation measures from BCAQMD's CEQA guidelines would reduce the amount of exhaust generated from construction equipment, while BCAQMD's fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). Therefore, it is anticipated that implementation of these activities would not conflict with the NSVPA Plan.

Impacts of Water and Irrigation Districts' Activities

Water and Irrigation Districts—Facility upgrades and maintenance would occur within the water and irrigation district service areas and include rerouting and maintaining canals and vegetation maintenance. Some of the activities, such as rerouting existing canals and replacing water delivery structures and other larger structures could require a substantial amount of heavy-duty diesel-powered construction equipment that would result in air pollutant emissions. Mowing and trimming of vegetation along service roads and the removal of aquatic vegetation from canals would likely only require hand operated equipment, but may also require the infrequent use of mowers that would result in minor air pollutant emissions. If emissions from the construction activities using heavy-duty equipment on a more frequent basis exceed BCAQMD's thresholds, the activities could conflict with the NSVPA Plan, and the impact would be significant. Standard construction mitigation measures from BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures would be applied; however, it is anticipated that implementation of these activities could conflict with the NSVPA Plan.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, as well as construction activities related to transportation facilities and water and irrigation district activities, Alternative 1 would conflict with the NSVPA Plan. Implementation of the Cities' general plan policies

or mitigation measures and implementation of standard construction mitigation measures from BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Caltrans BMPs would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, as well as construction activities related to transportation facilities and water and irrigation district activities, Alternative 1 would conflict with the NSVPA Plan. Implementation of the Cities' general plan policies or mitigation measures and implementation of standard construction mitigation measures from BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures and Caltrans BMPs would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—As discussed in the County's general plan EIR, land use activities associated with implementation of the General Plan 2030, including the covered activities, would result in a potential CO, ROG, NO_x, and PM emissions from vehicles and non-vehicle sources. Through quantitative modeling, the EIR determined that CO emissions from vehicles would not violate state or federal CO standards. Decreases in criteria pollutant emissions are expected from vehicle sources due to improvements in engine technology. Other sources of emissions, including mining, agricultural, construction, and residential, commercial, and industrial development, would not contribute or violate any air quality standards due to general plan policies and BCAQMD standard mitigation measures. Therefore, implementation of the general plan would not violate any air quality standard or contribute substantially to an existing air quality violation.

City of Chico—The City of Chico's general plan EIR determined that land use activities that would be implemented as part of the existing general plan could result in short-term construction-related emissions. The general plan could add a substantial amount of development and infrastructure in the city, and construction of this development could result in emissions that exceed BCAQMD thresholds (City of Chico 2011b). Therefore, implementation of the general plan would violate any air quality standard or contribute substantially to an existing air quality violation.

City of Oroville—The City of Oroville's general plan EIR determined that construction activities associated with the implementation of the general plan would generate ROG, NO_x, CO, and PM emissions. The general plan includes policies that would reduce construction emissions, but short-term construction emissions could exceed BCAQMD thresholds (City of Oroville 2009). Therefore, implementation of the general plan would violate any air quality standard or contribute substantially to an existing air quality violation.

City of Gridley—The City of Gridley's general plan EIR determined that activities associated with implementation of the general plan would generate short-term construction emissions that could violate an air quality standard or contribute to an existing air quality violation. Construction would follow BCAQMD standard mitigation measures, but emissions would be substantial due to the amount of total development that could occur (City of Gridley 2009). Therefore, implementation of

the general plan would violate any air quality standard or contribute substantially to an existing air quality violation.

City of Biggs—The City of Biggs’s general plan EIR determined that land use activities associated with implementation of the general plan would result in long-term emissions that could contribute to a violation of federal and state ozone and PM standards. Additionally, short-term construction emissions associated with the land use activities in the general plan could violate federal and state ozone and PM standards (City of Biggs 2013). Therefore, implementation of the general plan would violate any air quality standard or contribute substantially to an existing air quality violation.

Transportation Facilities—Transportation facility construction and maintenance would occur as described in Impact AQ-1. All BMPs required by Caltrans to control emissions, as described in Appendix D, would be implemented during their projects, and BCAG projects would follow general plan policies and BCAQMD standard mitigation measures. However, it is anticipated these activities would violate air quality standards or contribute to an existing air quality violation due to the substantial amounts of heavy-duty construction equipment expected to be used.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—Recurring maintenance activities primarily include those undertaken by the Local Agencies and are described under Impact AQ-1. It is anticipated these activities would not violate air quality standards or contribute to an existing air quality violation due to their limited duration and frequency.

Impacts of Water and Irrigation Districts’ Activities

Water and Irrigation Districts—Facility upgrades and maintenance would occur within the water and irrigation district service areas as described under Impact AQ-1. Standard construction mitigation measures from BCAQMD’s CEQA guidelines would reduce the amount of exhaust generated from heavy-duty equipment, while BCAQMD’s fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). It is anticipated these activities would violate air quality standards or contribute to an existing air quality violation.

NEPA Determination: As a result of construction- and operations- related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, as well as construction activities related to transportation facilities and water and irrigation district activities, Alternative 1 would violate air quality standards or contribute to an existing air quality violation. Implementation of the Cities’ general plan policies or mitigation measures and the BCAQMD’s fugitive PM10 mitigation measures, would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations- related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, as well as construction activities related to transportation facilities and water and irrigation district activities, Alternative 1 would violate air quality standards or contribute to an existing air quality violation. Implementation of the Cities’ general plan policies or mitigation measures and the BCAQMD’s fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—The County’s general plan EIR determined that implementation of General Plan 2030 would result in net decreases of criteria pollutants due to improvements in engine technology and the retirement of older vehicles. Non-mobile emissions would occur due to land use development, but this development would follow any applicable general plan policies and air district rules. Therefore, implementation in of the general plan would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard.

City of Chico—The City of Chico’s general plan EIR determined that the covered activities included in the general plan and development in the region’s air basin would cause a cumulatively considerable net increase in ozone and PM (City of Chico 2011b). Therefore, implementation of the general plan would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard.

City of Oroville—The City of Oroville’s general plan EIR determined that construction activities would temporarily generate ROG, NO_x, CO, and PM emissions that could impact air quality (City of Oroville 2009). These construction activities in combination with other development in the region could cause a cumulatively considerable net increase in criteria pollutants for which the region is a nonattainment area. Therefore, implementation of the general plan would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard.

City of Gridley—The City of Gridley’s general plan EIR determined that long-term operational, regional emissions of criteria pollutants and precursors would be generated by activities that would occur under the general plan. These long-term emissions could result in a cumulatively considerable net increase of criteria pollutants for which the region is a nonattainment area. Therefore, implementation of the general plan would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard.

City of Biggs—The City of Biggs’s general plan EIR determined that implementation of the general plan and other development in the region’s air basin would cause a net increase of ozone and PM that would be cumulatively considerable (City of Biggs 2013). Therefore, implementation of the general plan would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard.

Transportation Facilities—Transportation facility construction and maintenance would occur as described in Impact AQ-1. All BMPs required by Caltrans to control emissions, as described in Appendix D, would be implemented during their projects, and BCAG projects would follow general plan policies and BCAQMD standard mitigation measures. However, since the construction and

maintenance of these facilities would conflict with the NSVPA Plan and violate air quality standards, they would result in a cumulatively considerable net increase of any criteria pollutant.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—Recurring maintenance activities primarily include those undertaken by the Local Agencies and would occur as described under Impact AQ-1. Recurring maintenance activities would not result in a cumulatively considerable net increase of any criteria pollutant.

Impacts of Water and Irrigation Districts' Activities

Water and Irrigation Districts—Facility upgrades and maintenance would occur within the water and irrigation district service areas as described under AQ-1. Standard construction mitigation measures from BCAQMD's CEQA guidelines would reduce the amount of exhaust generated from heavy-duty equipment, while BCAQMD's fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). However, since the construction and maintenance of these facilities would conflict with the NSVPA Plan and violate air quality standards, they would also result in a cumulatively considerable net increase of any criteria pollutant.

NEPA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, as well as construction activities related to transportation facilities and water and irrigation district activities, Alternative 1 would violate air quality standards or contribute to an existing air quality violation. Implementation of the Cities' general plan policies or mitigation measures and the BCAQMD's fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, as well as construction activities related to transportation facilities and water and irrigation district activities, Alternative 1 would violate air quality standards or contribute to an existing air quality violation. Implementation of the Cities' general plan policies or mitigation measures and the BCAQMD's fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—As discussed in the County's general plan EIR, diesel-powered construction equipment, heavy-duty trucks, and new development would create diesel exhaust emissions as a result of implementation of the General Plan 2030. Because policies within the general plan specify distance requirements and control technologies, sensitive receptors would not be exposed to substantial pollutant concentrations (Butte County 2010). Therefore, implementation of the general plan would not expose sensitive receptors to substantial pollutant concentrations.

City of Chico—The City of Chico's general plan EIR determined that projects with sources of toxic air contaminants could affect sensitive receptors in surrounding land uses and that sensitive land uses could be placed near existing sources of toxic air contaminants. Sensitive receptors could also be

exposed to elevated CO concentrations from increased traffic volumes. The general plan EIR concluded that exposure of sensitive receptors and land uses to toxic air contaminants would be addressed by regulations implemented by BCAQMD and the state to prevent sensitive receptors from being exposed to substantial pollutant concentrations and that traffic volumes would not be large enough to create substantial CO emission (City of Chico 2011b). Therefore, implementation of the general plan would not expose sensitive receptors to substantial pollutant concentrations.

City of Oroville—The City of Oroville’s general plan EIR determined that construction activities would temporarily generate ROG, NO_x, CO, and PM emissions that could impact air quality (City of Oroville 2009). These construction activities could expose sensitive receptors to substantial pollutant concentrations. If not addressed by BCAQMD or the state, pollutant concentrations, including toxic air contaminants, could affect sensitive receptors. Therefore, implementation of the general plan would expose sensitive receptors to substantial pollutant concentrations.

City of Gridley—The City of Gridley’s general plan EIR determined that toxic air contaminants resulting from heavy-duty diesel equipment, stationary, and mobile sources would occur, but the effect of these emissions on sensitive receptors would be minimized. Pursuant to policies in the general plan, land uses and other sources that could produce toxic air contaminants would be sited to minimize exposure to sensitive receptors (City of Gridley 2009). Therefore, implementation of the general plan would not expose sensitive receptors to substantial pollutant concentrations.

City of Biggs—The City of Biggs’s general plan EIR determined that the land use activities associated with the general plan could cause sources of toxic air contaminant emissions that would affect the surrounding land uses. In addition, sensitive land uses may be developed near existing sources of toxic air contaminants. Exposure of sensitive receptors to toxic air contaminants would be addressed by existing regulations of BCAQMD and the state (City of Biggs 2013). Therefore, implementation of the general plan would not expose sensitive receptors to substantial pollutant concentrations.

Transportation Facilities—As discussed under Impact AQ-1, activities associated with the development of transportation facilities would require the use of heavy-duty diesel-powered equipment that would generate air pollutant emissions. These emissions are not expected to impact substantial numbers of people, as construction of the transportation facilities would be temporary. Furthermore, Caltrans BMPs would be implemented, as described in Appendix D. Therefore, construction of the transportation facilities would not expose sensitive receptors to substantial pollutants.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—These activities are described under Impact AQ-1 and are not expected to occur within close proximity to sensitive receptors. Furthermore, these activities would be limited in duration and occur relatively infrequently. Therefore, recurring maintenance activities are not expected to impact substantial numbers of people and would not expose sensitive receptors to substantial pollutants.

Impacts of Water and Irrigation Districts’ Activities

Water and Irrigation Districts—As discussed under Impact AQ-1, activities associated with the development of transportation facilities would require the use of heavy-duty diesel-powered equipment that would generate air pollutant emissions. While emissions from construction

equipment could affect sensitive receptors, these activities would generally occur in agricultural and open space areas away from the sensitive receptors, and the activities would be limited in duration. Therefore, it is anticipated the water and irrigation activities would not expose sensitive receptors to substantial pollutants.

NEPA Determination: As a result of construction-related emissions associated with implementation of the general plan for the city of Oroville, sensitive receptors would be exposed to substantial pollutants. All other activities (i.e., implementation of other general plans, transportation facilities, recurring maintenance facilities, and water and irrigation district activities) would not expose sensitive receptors to substantial pollutants. Implementation of the City's general plan policies or mitigation measures and the BCAQMD's fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction-related emissions associated with implementation of the general plan for the city of Oroville sensitive receptors would be exposed to substantial pollutants. All other activities (i.e., implementation of other general plans, transportation facilities, recurring maintenance facilities, and water and irrigation district activities) would not expose sensitive receptors to substantial pollutants. Implementation of the City's general plan policies or mitigation measures and the BCAQMD's fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact AQ-5: Create objectionable odors affecting a substantial number of people (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—Construction diesel exhaust, agricultural operations, and other land use activity associated with the covered activities in the County's General Plan 2030 would have the potential to generate odors. However, several policies in the general plan stipulate the establishment of buffer zones around sources of odor, which would reduce the exposure of a substantial number of people to odors (Butte County 2010). Therefore, implementation of the general plan would not create objectionable odors affecting a substantial number of people.

City of Chico—Land use activities associated with the City of Chico's General Plan were found to have the potential to introduce objectionable odors affecting a substantial number of people. Consequently, any odor issues would be lessened by rules and regulations to be implemented by BCAQMD, and policy provisions included in the City's general plan (City of Chico 2011b). Therefore, implementation of the general plan would not create objectionable odors affecting a substantial number of people.

City of Oroville—The City of Oroville's general plan EIR determined that construction activities would temporarily generate ROG, NO_x, CO, and PM emissions that could impact air quality (City of Oroville 2009). These construction activities could also generate objectionable odors. If the rules and regulations implemented by BCAQMD to not address these odor issues, a substantial number of people could be affected. Therefore, implementation of the general plan would create objectionable odors affecting a substantial number of people.

City of Gridley—As discussed in the City of Gridley’s general plan EIR, certain receptors could be exposed to excessive odors resulting from implementation of the covered activities in the general plan. Receptors that are onsite at a project could be exposed to odors from project-generated odor sources from existing agricultural other land uses (City of Gridley 2009). Therefore, implementation of the general plan would create objectionable odors affecting a substantial number of people.

City of Biggs—As discussed in the City of Biggs’s general plan EIR, the land use activities that would result from implementation of the general plan could create objectionable odors or expose new residents to existing odor sources. Such odor issues would be addressed by BCAQMD regulations. Therefore, implementation of the general plan would not create objectionable odors affecting a substantial number of people.

Transportation Facilities—As discussed under Impact AQ-4, emissions would not likely affect a substantial number of people as construction of the transportation facilities would be temporary. Furthermore, Caltrans BMPs would be implemented, as described in Appendix D. Therefore, construction and maintenance of transportation facilities would not create objectionable odors affecting a substantial number of people.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—As discussed under Impact AQ-4, these activities would likely not occur within close proximity to sensitive receptors and would be temporary. Therefore, recurring maintenance activities would not create objectionable odors affecting a substantial number of people.

Impacts of Water and Irrigation Districts’ Activities

Water and Irrigation Districts—As discussed under Impact AQ-4 these activities would generally occur in agricultural and open space areas away from the sensitive receptors, and the activities would be limited in duration. Therefore, it is anticipated the water and irrigation activities would not create objectionable odors affecting a substantial number of people.

NEPA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Oroville and Gridley, sensitive receptors would be exposed to objectionable odors. All other activities (i.e., implementation of other general plans, transportation facilities, recurring maintenance facilities, and water and irrigation district activities) would not expose sensitive receptors to substantial pollutants. Implementation of the Cities’ general plan policies or mitigation measures and the BCAQMD’s fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Oroville and Gridley sensitive receptors would be exposed to objectionable odors. All other activities (i.e., implementation of other general plans, transportation facilities, recurring maintenance facilities, and water and irrigation district activities) would not expose sensitive receptors to substantial pollutants. Implementation of the Cities’ general plan policies or mitigation measures and the BCAQMD’s fugitive PM10 mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and Cities of Chico, Oroville, Gridley, and Biggs determined that implementation of their general plans would result in significant and unavoidable emissions of GHGs (Butte County 2010; City of Chico 2011b; City of Oroville 2009; City of Gridley 2009; City of Biggs 2013).

Impacts of Transportation Facilities, Recurring Maintenance, and Water and Irrigation Districts' Activities

While BCAQMD has not formally adopted GHG thresholds, Table 5-10 includes adopted GHG thresholds for multiple air districts and counties, and the CEQ threshold is discussed in Section 5.2.2, *Significance Criteria*. The construction and maintenance of facilities and infrastructure under the covered activities would require heavy-duty construction equipment, which would generate direct GHG emissions. It is possible that emissions could exceed some of the referenced thresholds included in Table 5-10, which may have a significant impact on the environment. Implementing construction BMPs for the transportation facilities, identified in Appendix D, would minimize GHG emissions, but not to a less than significant level.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, as well as transportation facilities, recurring maintenance facilities, and water and irrigation district activities, greenhouse gases would be generated that would have a significant effect on the environment. Implementation of the Cities' general plan policies or mitigation measures and Caltrans BMPs would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, including transportation facilities, recurring maintenance facilities, and water and irrigation district activities, greenhouse gases would be generated that would have a significant effect on the environment. Implementation of the Cities' general plan policies or mitigation measures and Caltrans BMPs would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

In the Plan Area, there are no formally adopted plans or goals with the intent of reducing GHG emissions. As discussed under Impact AQ-6, implementation of the Local Agencies' general plans, including transportation projects, recurring maintenance activities, and water and irrigation districts' activities, could result in exceedance of the reference thresholds in Table 5-10 and conflict with GHG reduction planning efforts.

NEPA Determination: The impact determination would be the same as AQ-6; impacts would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as AQ-6; impacts would be significant and unavoidable.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Covered activities relevant to air quality and climate change are those that involve construction or those that involve earthmoving activities, as well as those that generate traffic. Covered activities that would involve construction (including earthmoving activities) are all development activities consistent with the Local Agencies' general plans, state and local transportation projects, and water district canal installation. Conservation measures that involve only earthmoving activities are certain restoration actions under the conservation strategy (CM4–CM11, and CM14 and Activities to Improve Urban Stormwater Quality). Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations, or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operations-related impacts; although some covered activities, however, may be exempted from environmental review requirements due to project characteristics, including small projects or infill projects.

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

For impacts associated with permanent development within Local Agency jurisdiction, refer to the Alternative 1 impact discussion for Impact AQ-1. Implementation of AMMs included in Alternative 2, including AMM14: Control Fugitive Dust through Watering, which contains wind erosion control measures (applying water or dust palliatives), would reduce impacts, but it may not reduce them to a less-than-significant level given the extent and type of emissions associated with implementation of the City of Biggs' and City of Gridley's general plans.

Transportation Facilities—Covered transportation construction and maintenance activities that could have an impact on air quality under Alternative 2 include capacity enhancing projects; intersection improvements; bridge improvements; and rehabilitation and minor improvements to existing roadways, bike paths, parking facilities, transit facilities, rail facilities, airports, and other infrastructure. These activities would require heavy-duty diesel-powered equipment that would generate air pollutant emissions and earth movement that could generate dust. If construction emissions from implementation of these activities exceed BCAQMD's thresholds, the activities could conflict with the NSVPA Plan, and the impact would be significant. Standard construction mitigation measures from BCAQMD's CEQA guidelines would reduce the amount of exhaust generated from construction equipment, while BCAQMD's fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). This impact could be significant if construction activities were such that pollutant emissions would still exceed the general conformity *de minimis* thresholds indicated in Table 5-8 or BCAQMD's thresholds indicated in Table 5-9. Implementation of AMMs included in the BRCP, including AMM14: Control Fugitive Dust through Watering, and AMM26: Implement Caltrans Water Quality BMPs, which include wind erosion control measures (applying water or dust palliatives), as well as Caltrans BMPs listed in Appendix D, would reduce these impacts, but may not reduce them to a less-than-significant level.

Implementation of Mitigation Measures AQ-1a and AQ-1b will ensure compliance with the NSVPA Plan.

Impacts of Recurring Maintenance

Flood Control and Stormwater Management and Vegetation Management—Activities associated with flood control and stormwater management include vegetation removal on levees. Vegetation management would typically include vegetation clearing using herbicides and potential tree removal. It could also include discing for firebreaks. These activities would not result in substantial air pollutant emissions, as heavy-duty equipment is not anticipated to be regularly used or would be used intermittently and very infrequently (i.e., prior to fire season). No emissions or very limited emissions would be emitted and, standard construction mitigation measures from BCAQMD's CEQA guidelines would reduce the amount of exhaust generated from construction equipment, while BCAQMD's fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). Therefore, emissions from these activities would not conflict with the NSVPA Plan. Furthermore, implementation of Mitigation Measures AQ-1a and 1b will further reduce the less-than-significant impacts.

Impacts of Water and Irrigation Districts' Activities

Covered activities within water and irrigation districts that would occur include permanent rerouting of up to 12 miles of existing canals, the replacement of water delivery structures, the replacement of larger structures, mowing and trimming of vegetation along district service roads, and maintenance activities to remove aquatic vegetation from canals. Some of the activities, such as rerouting existing canals and replacing water delivery structures and other larger structures could require a substantial amount of heavy-duty diesel-powered construction equipment that would result in air pollutant emissions. Mowing and trimming of vegetation along service roads and the removal of aquatic vegetation from canals would likely only require hand operated equipment but may also require the infrequent use of mowers that would result in minor air pollutant emissions. As with the construction and maintenance of the transportation facilities and recurring maintenance discussed above, if emissions from these activities exceed BCAQMD's thresholds, the activities could conflict with the NSVPA Plan, and the impact would be significant. Standard construction mitigation measures from BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, implementation of AMMs included in Alternative 2, and Mitigation Measures AQ-1a and AQ-1b will reduce these impacts to a less-than-significant level. Therefore, emissions from these activities would not conflict with the NSVPA Plan.

Impacts of the Conservation Strategy

Covered activities within conservation lands include habitat management and enhancement, habitat restoration, general maintenance, AMMs, and species population and enhancement. Habitat restoration could involve construction activities, earthmoving, and soil hauling, which would require heavy-duty equipment. Implementation of the conservation measures would involve construction and maintenance equipment that would generate air pollutant emissions. The following conservation measures and actions have the potential to generate emissions and conflict with the NSVPA Plan.

- CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans
- CM5: Enhance Protected Natural Communities for Covered Species

- CM7: Create and Maintain Greater Sandhill Crane Winter Roosting Habitat
- CM8: Restore Giant Garter Snake Habitat
- CM9: Replenish Spawning Gravels for Salmonids
- CM10: Remove Impediments to Upstream and Downstream Fish Passage
- CM11: Remove, Modify, or Screen Unscreened Diversions
- CM13: Conduct Surveys to Locate and Protect New Occurrences of Butte County Checkerbloom
- CM14: Translocate Conservancy Fairy Shrimp, Hoover's Spurge, Ahart's Dwarf Rush, Hairy Orcutt Grass, Slender Orcutt Grass, and Greene's Tuctoria
- Activities to Improve Urban Stormwater Water Quality

Constructing berms, site clearing, and other activities as part of implementation of the conservation measures would require diesel-powered construction equipment and earth movement. Surveying and monitoring would require light-duty automobiles. If emissions from these activities exceed BCAQMD's thresholds, the activities could conflict with the NSVPA Plan, and the impact would be significant. Standard construction mitigation measures from BCAQMD's CEQA guidelines would reduce the amount of exhaust generated from heavy-duty equipment, while BCAQMD's fugitive PM10 mitigation measures would reduce dust impacts (Butte County Air Quality Management District 2008). This impact could be significant if activities were such that pollutant emissions would still exceed the general conformity *de minimis* thresholds indicated in Table 5-8 or BCAQMD's thresholds indicated in Table 5-9. Implementation of AMMs included in the BRCP, including AMM14: Control Fugitive Dust through Watering, and AMM26: Implement Caltrans Water Quality BMPs, which include wind erosion control measures (applying water or dust palliatives), would reduce these impacts, but may not reduce them to a less-than-significant level. Implementation of Mitigation Measures AQ-1a and AQ-1b will reduce these impacts, and emissions from these activities would not conflict with the NSVPA Plan.

NEPA Determination: As described under Alternative 1, construction- and operations-related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, would conflict with the NSVPA plan. Impacts associated with the conservation strategy and other covered activities would not conflict with the NSVSPA plan with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with the general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As described under Alternative 1, construction- and operations - related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, would result in a conflict with the NSVPA plan. Impacts associated with the conservation strategy and other covered activities would not conflict with the NSVSPA plan with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipmentStandard Mitigation Measures For Construction Equipment

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Maximize to the extent feasible, the use of diesel construction equipment meeting the ARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.

Discretionary Mitigation Measures for Construction Equipment

- Utilize electric equipment where feasible.
- Substitute gasoline-powered for diesel-powered equipment, where feasible.
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Use equipment that has Caterpillar pre-chamber diesel engines.

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dustLand Clearing/Earth Moving Measures

- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission. Haul vehicles transporting soil into or out of the property shall be covered.
- A water truck shall be on site at all times. Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary.
- Onsite vehicles limited to a speed which minimizes dust emissions on unpaved roads.
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours.
- The telephone number of the District shall also be visible to ensure compliance with District Rule 200 & 205 in its *CEQA Air Quality Handbook* (Butte County Air Quality Management District 2008:6-3)

Visibly Dry Disturbed Soil Surface Areas

- All visibly dry disturbed soil surface areas of operation shall be watered to minimize dust emission.

Paved Road Track-Out

- Existing roads and streets adjacent to the project will be cleaned at least once per day unless conditions warrant a greater frequency.

Visibly Dry Disturbed Unpaved Roads

- All visibly dry disturbed unpaved roads surface areas of operation shall be watered to minimize dust emission.
- Unpaved roads may be graveled to reduce dust emissions.

- A water truck shall be on site at all times. Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary.
- Onsite vehicles limited to a speed which minimizes dust emissions on unpaved roads.
- Haul roads shall be sprayed down at the end of the work shift to form a thin crust. This application of water shall be in addition to the minimum rate of application.

Vehicles Entering/Exiting Construction Area

- Vehicles entering or exiting construction area shall travel at a speed which minimizes dust emissions.

Employee Vehicles

- Construction workers shall park in designated parking areas(s) to help reduce dust emissions.

Soil Piles

- Soil pile surfaces shall be moistened if dust is being emitted from the pile(s). Adequately secured tarps, plastic or other material may be required to further reduce dust emissions.

Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

For impacts associated with permanent development within the Local Agencies' jurisdictions, refer to Alternative 1 Impact AQ-2. Implementation of AMMs included in Alternative 2, including AMM14: Control Fugitive Dust through Watering, which include wind erosion control measures (applying water or dust palliatives), will reduce these impacts, but may not reduce them to a less-than-significant level given the extent and type of emissions associated with implementation of the general plans for the cities of Chico, Oroville, Biggs and Gridley since these agencies determined effects would be significant and unavoidable.

Transportation Facilities—As discussed under Impact AQ-1, the construction and maintenance of covered transportation activities could result in pollutant emissions that would exceed the general conformity *de minimis* thresholds indicated in Table 5-8 or BCAQMD's thresholds indicated in Table 5-9. Implementation of AMMs included in the BRCP, including AMM14: Control Fugitive Dust through Watering, and AMM26: Implement Caltrans Water Quality BMPs, which include wind erosion control measures (applying water or dust palliatives), will reduce these impacts, but may not reduce them to a less-than-significant level. Implementation of Mitigation Measures AQ-1a and AQ-1b will reduce this impact to a less-than-significant level.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—As discussed in Impact AQ-1, these activities would not result in substantial air pollutant emissions, as heavy-duty equipment is not anticipated to be regularly used or would be used intermittently and very infrequently (i.e., prior to fire season). Furthermore, implementation of the AMMs and Mitigation

Measures AQ-1a and 1b will further reduce less-than-significant impacts. Emissions from these activities would not violate an air quality standard or contribute to an existing violation.

Impacts of Water and Irrigation Districts' Activities

As discussed in Impact AQ-1, activities undertaken by the water and irrigation districts could result in emissions. If emissions from these activities exceed BCAQMD's thresholds, the impact would be significant. Implementation of, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, AMMs, and Mitigation Measures AQ-1a and AQ-1b will reduce this impact to a less-than-significant level and air quality standards would not be violated.

Impacts of the Conservation Strategy

As discussed in Impact AQ-1, implementation of the conservation strategy and conservation measures would result in air quality emissions through the use of heavy duty equipment and ground-disturbing activities. These activities could result in significant air quality emissions if the activities were such that pollutant emissions would still exceed the general conformity *de minimis* thresholds indicated in Table 5-8 or BCAQMD's thresholds indicated in Table 5-9. Implementation of BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, AMMs, and Mitigation Measures AQ-1a and AQ-1b will reduce these potentially significant impacts, and these activities would not violate air quality standards.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, Alternative 2 would violate air quality standards or contribute to an existing air quality violation. Impacts associated with the conservation strategy and other covered activities would not violate air quality standards with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, Alternative 2 would violate air quality standards or contribute to an existing air quality violation. Impacts associated with the conservation strategy and other covered activities would not violate air quality standards with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

For impacts associated with permanent development within Local Agencies' jurisdictions, refer to Alternative 1 Impact AQ-3. Implementation of AMMs included in Alternative 2, including AMM14: Control Fugitive Dust through Watering, which contains wind erosion control measures (applying water or dust palliatives), would reduce these impacts, but may not reduce them to a less-than-significant level given the extent and type of emissions associated with implementation of the general plans for the Cities of Chico, Oroville, Biggs and Gridley since these agencies determined effects would be significant and unavoidable.

Transportation Facilities—As discussed under Impact AQ-1, the construction and maintenance of covered transportation activities could require the use of heavy-duty diesel-powered equipment that would generate air pollutant emissions. Emissions would cause a cumulatively considerable net increase in criteria pollutants if emissions from the equipment exceed BCAQMD's thresholds. As discussed under Impact AQ-1, implementation of AMMs included in Alternative 1, including AMM14: Control Fugitive Dust through Watering, and AMM26: implement Caltrans water quality BMPs, which include wind erosion control measures (applying water or dust palliatives), would reduce these impacts but may not reduce them to a less-than-significant level. Implementation of Mitigation Measures AQ-1a and AQ-1b will reduce this impact to a less-than-significant level.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—As discussed in Impact AQ-1, activities associated with flood control and stormwater management are not expected to result in substantial air pollutant emissions as no heavy-duty equipment would be required or emissions would occur intermittently and very infrequently. Therefore, emissions from these activities would not result in a cumulatively considerable net increase of any criteria pollutant.

Impacts of Water and Irrigation Districts' Activities

Water and Irrigation Districts—As discussed in Impact AQ-1, covered activities within water and irrigation districts would require heavy-duty diesel equipment and earth movement. Emissions from the operation of heavy-duty diesel equipment and earth movement, if above BCAQMD's thresholds, could cause a cumulatively considerable increase in criteria pollutants. As discussed under Impact AQ-1, implementation of AMMs included in Alternative 2, including AMM14: Control Fugitive Dust through Watering, would reduce these impacts but may not reduce them to a less-than-significant level. Implementation of Mitigation Measures AQ-1a and AQ-1b will reduce this impact to a less-than-significant level and would not result in a cumulatively considerable net increase of any criteria pollutant.

Impacts of the Conservation Strategy

As discussed in Impact AQ-1, implementation of the conservation strategy and conservation measures could result in air quality emissions. These could result in a cumulatively considerable

increase in criteria pollutants. Implementation of BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, AMMs, and Mitigation Measures AQ-1a and AQ-1b will reduce these potentially significant impacts, and these activities are not expected to result in a cumulatively considerable increase in criteria pollutants.

NEPA Determination: As described under Alternative 1, construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, would result in a cumulatively considerable net increase of any criteria pollutant. Impacts associated with the conservation strategy and other covered activities would not result in a cumulatively considerable net increase with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As described under Alternative 1, construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, would result in a cumulatively considerable net increase of any criteria pollutant. Impacts associated with the conservation strategy and other covered activities would not result in a cumulatively considerable net increase with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

**Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations
(NEPA: significant and unavoidable; CEQA: significant and unavoidable)**

Impacts of Permanent Development

For impacts associated with permanent development within Local Agency jurisdiction, refer to Alternative 1 Impact AQ-4. Implementation of AMMs included in Alternative 2, including AMM14: Control Fugitive Dust through Watering, which contains wind erosion control measures (applying water or dust palliatives), would reduce these impacts, but may not reduce them to a less-than-significant level given the extent and type of emissions associated with implementation of the general plan for the city of Oroville, since it determined effects would be significant and unavoidable.

Transportation Facilities—As discussed under Impact AQ-1, construction and maintenance activities associated with the development of transportation facilities would require the use of heavy-duty diesel-powered equipment that would generate air pollutant emissions. These emissions would not likely affect a substantial amount of people, as construction of the transportation facilities would be temporary. In addition, implementation of Mitigation Measure AQ-1a will further reduce exhaust emissions during construction. Therefore, these activities would not expose sensitive receptors to substantial pollutant concentrations.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—As discussed under Impact AQ-1, these activities are not expected to result in substantial air pollutant emissions. Furthermore, these activities are not expected to occur within close proximity to sensitive receptors and would be temporary; therefore, it is not likely these activities would affect a substantial number of people. In addition, implementation of Mitigation Measure AQ-1a will further reduce exhaust emissions. Emissions from these activities would not expose sensitive receptors to substantial pollutant concentrations.

Impacts of Water and Irrigation Districts' Activities

Water and Irrigation Districts—As discussed under Impact AQ-1, covered activities within water and irrigation districts would require heavy-duty diesel equipment and earth movement. While emissions from construction equipment could affect sensitive receptors, these activities would generally occur in agricultural and open space areas and not in close proximity to sensitive receptors. Furthermore, these activities would be short in duration and relatively infrequent. Therefore, it is anticipated the water and irrigation activities would not expose sensitive receptors to substantial pollutants. Implementation of Mitigation Measure AQ-1a will further reduce the less-than-significant exhaust emissions during construction.

Impacts of the Conservation Strategy

As discussed in Impact AQ-1, implementation of the conservation strategy and conservation measures could result in air quality emissions as a result of the use of heavy-duty equipment during construction and maintenance. These activities would occur within the conservation lands and, thus, would likely not occur within close proximity to sensitive receptors. They would be temporary and, therefore, not likely affect a substantial number of people. Furthermore, implementation of Mitigation Measure AQ-1a will reduce exhaust emissions during construction and minimize impacts to sensitive receptors. Therefore, these activities would not expose sensitive receptors to substantial pollutants.

NEPA Determination: As described under Alternative 1, construction-related emissions associated with implementation of the general plan for the city of Gridley would expose sensitive receptors to substantial pollutants. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants. Furthermore, Mitigation Measure AQ-1b will reduce impacts associated with these activities. However, implementation of Gridley's general plan policies or mitigation measures would not reduce the effects associated with the general plan to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As described under Alternative 1, construction-related emissions associated with implementation of the general plan for the city of Gridley would expose sensitive receptors to substantial pollutants. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants. Furthermore, Mitigation Measure AQ-1b will reduce impacts associated with these activities. However, implementation of Gridley's general plan policies or mitigation measures would not reduce the effects associated with the general plan to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Impact AQ-5: Create objectionable odors affecting a substantial number of people (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

For impacts associated with permanent development within the Local Agencies' jurisdictions, refer to Alternative 1 Impact AQ-5. Implementation of AMMs included in Alternative 2, including AMM14: Control Fugitive Dust through Watering, which includes wind erosion control measures (applying water or dust palliatives), would reduce these impacts, but may not reduce them to a less-than-significant level given the extent and type of emissions associated with implementation of the general plan for the city of Oroville, since it determined effects would be significant and unavoidable.

Transportation Facilities—Covered activities associated with the construction and maintenance of transportation facilities would require heavy-duty diesel-powered equipment that could generate objectionable odors. Because construction of the transportation facilities would occur temporarily, odors would not likely affect a substantial number of people. In addition, implementation of Mitigation Measure AQ-1a will further reduce exhaust emissions during construction. Therefore, these activities are not anticipated to produce objectionable odors.

Impacts of Recurring Maintenance Activities

Flood Control and Stormwater Management and Vegetation Management—As discussed under Impact AQ-1, these activities would not result in substantial air pollutant emissions, as no heavy-duty equipment would be required or would be infrequently used. Furthermore, as discussed under Impact AQ-4, sensitive receptors are not expected to be within close proximity to these activities. Therefore, these activities would not create objectionable odors affecting a substantial number of people

Impacts of Water and Irrigation Districts' Activities

Water and Irrigation Districts—As discussed under Impact AQ-1, covered activities within water and irrigation districts would require heavy-duty diesel equipment that could potentially generate objectionable odors. Because of the short-term nature of the activities, odors would not likely affect a substantial number of people. In addition, implementation of Mitigation Measure AQ-1a will further reduce exhaust emissions during construction. Therefore, it is anticipated the water and irrigation activities would not create objectionable odors affecting a substantial number of people.

Impacts of the Conservation Strategy

Implementation of the conservation strategy would require heavy-duty diesel-powered equipment that could potentially create objectionable odors. The use of heavy-duty equipment would be temporary, and sensitive receptors are not likely to be within close proximity because the activities generally would occur in rural, agricultural, open space areas. Therefore, it is anticipated odors would not likely affect a substantial amount of people. Implementation of Mitigation Measure AQ-1a will further reduce exhaust emissions during construction. Therefore, implementation of the conservation strategy would not create objectionable odors affecting a substantial number of people.

NEPA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Oroville and Gridley, sensitive receptors would be exposed to objectionable odors. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of the Cities of Gridley and Oroville would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction-related emissions associated with implementation of the general plans for the cities of Oroville and Gridley sensitive receptors would be exposed to objectionable odors. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of the Cities of Gridley and Oroville would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Impact AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

For impacts associated with permanent development within the Local Agencies' jurisdictions and transportation facilities, refer to the Alternative 1 impact discussion for Impact AQ-6.

Impacts of Recurring Maintenance, Water and Irrigation Districts' Activities and the Conservation Strategy

While BCAQMD hasn't formally adopted GHG thresholds, Table 5-10 includes adopted GHG thresholds for multiple air districts and counties, and the CEQ threshold is discussed above. The construction and maintenance of facilities and infrastructure under the covered activities would require heavy-duty construction equipment, which would generate direct GHG emissions. It is possible that emissions could exceed some of the reference thresholds included in Table 5-10, which may have a significant impact on the environment. Implementing construction mitigation measures would minimize GHG emissions that would be generated from heavy-duty equipment. This impact would be significant. Implementation of Mitigation Measure AQ-6 will help to reduce GHG emissions; however, greenhouse gas emissions would still be generated that may have a significant effect on the environment.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, other covered activities, and implementation of the conservation strategy, greenhouse gases would be generated that would have a significant effect on the environment. Implementation of the Cities' general plan policies or mitigation measures,

Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, other covered activities, and implementation of the conservation strategy, greenhouse gases would be generated that would have a significant effect on the environment. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs

- Use alternatively fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15% of the fleet.
- Use local building materials of at least 10%.
- Recycle or reuse at least 50% of construction waste or demolition materials.

Impact AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

For impacts associated with permanent development within Local Agencies' jurisdictions, including transportation projects, refer to the Alternative 1 impact discussion for Impact AQ-7.

Impacts of Recurring Maintenance, Water and Irrigation Districts' Activities and the Conservation Strategy

In the Plan Area, there are no formally adopted plans or goals with the intent of reducing GHG emissions. As discussed under Impact AQ-6, covered activities and implementation of the conservation strategy could exceed the reference thresholds in Table 5-10 and the activities could conflict with GHG reduction planning efforts.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, other covered activities, and implementation of the conservation strategy, greenhouse gases would be generated that would have a significant effect on the environment. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, other covered activities, and implementation of the conservation strategy, greenhouse gases would be generated that would have a significant effect on the environment. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—The County's general plan EIR determined that a concentrated growth alternative (Alternative 3 in this analysis) would result in reduced emissions compared to implementation of General Plan 2030. The general plan EIR determined that implementation of the proposed general plan would not obstruct implementation of the NSVPA Plan. Accordingly, it was also determined that Alternative 3 would not obstruct implementation of the attainment plan (Butte County 2010).

City of Chico—The City of Chico's general plan EIR determined that an increased density alternative (Alternative 3 in this analysis) would not conflict with or obstruct the NSVPA Plan (City of Chico 2011b).

City of Oroville—The City of Oroville's general plan EIR determined that an alternative focused on neighborhood growth and increased density (Alternative 3 in this analysis) would result in decreased emissions compared to implementation of the City's general plan. However, the improvement in air quality would be insubstantial, and the significant impacts would not be avoided. Therefore, implementation of the general plan would conflict with the NSVPA Plan.

City of Gridley—The City of Gridley's general plan EIR determined that a centralized development alternative could conflict with or obstruct implementation of the NSVPA Plan through short-term construction related emissions. The centralized development alternative would represent an improvement to air quality over implementation of the general plan, but air quality impacts would not be avoided. Therefore, implementation of the general plan would conflict with the NSVPA Plan.

City of Biggs—The City of Biggs's general plan EIR determined that subsequent land use activities associated with implementation of the general plan would obstruct implementation of the NSVPA Plan.

Impacts of Other Covered Activities and Implementation of the Conservation Strategy

The covered activities and conservation strategy would differ slightly under Alternative 3 compared to Alternative 2 due the reduced footprint and reduced land conservation, which would result in less ground disturbance. Therefore, it is anticipated there may be slightly fewer emissions produced under this alternative. However, impacts would be similar to those discussed in Alternative 2 and would incorporate Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, Alternative 2 AMMs, and Mitigation Measures AQ-1a and AQ-1b.

NEPA Determination: Construction- and operations-related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, would conflict with the NSVPA Plan. Impacts associated with the conservation strategy and other covered activities would not conflict with the NSVSPA Plan with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects of general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Oroville, Gridley, and Biggs, Alternative 3 would conflict with the NSVPA Plan. Impacts associated with the conservation strategy and other covered activities would not conflict with the NSVSPA Plan with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects of general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—Alternative 3 represents a more concentrated growth scenario than implementation of the County's General Plan 2030 and would result in decreased vehicle trips and, consequently, air pollutant emissions, according to the County general plan EIR. The County general plan EIR has also determined that the land use activities associated with General Plan would not contribute substantially to an existing or projected air quality violation (Butte County 2010).

City of Chico—The City of Chico's general plan EIR determined that an increased density alternative would represent an improvement in air quality over implementation of the general plan but that impacts on air quality would not be avoided. As a result, the increased density alternative would contribute to existing air quality violations in the region (City of Chico 2011b).

City of Oroville—The City' of Oroville's general plan EIR determined that an alternative focused on neighborhood growth and increased density would result in decreased emissions compared to

implementation of the City's general plan. However, the improvement in air quality would be insubstantial, and the significant impacts would not be avoided. As a result, implementation of the general plan would contribute to existing air quality violations in the region.

City of Gridley—The City of Gridley's general plan EIR determined that a centralized development alternative could violate an air quality standard or contribute to an existing violation through short-term construction related emissions. The centralized development alternative would represent an improvement to air quality over implementation of the general plan, but air quality impacts would not be avoided. As a result, implementation of the general plan would contribute to existing air quality violations in the region.

City of Biggs—The City of Biggs's general plan EIR determined that subsequent land use activities associated with implementation of the City's general plan could result in short-term construction emissions and long-term operational emissions that could violate or substantially contribute to a violation of federal and state standards for ozone and coarse and fine particulate matter. As a result, implementation of the general plan would contribute to existing air quality violations in the region.

Impacts of Other Covered Activities and Implementation of the Conservation Strategy

As discussed in Impact AQ-1, there may be fewer emissions as a result of less ground disturbed; however, impacts would be the same as those described under Alternative 2. Implementation of Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, Alternative 2 AMMs, and Mitigation Measures AQ-1a and AQ-1b will ensure other covered activities and implementation of the conservation strategy does not violate air quality standards.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, Alternative 3 would violate air quality standards or contribute to an existing air quality violation. Impacts associated with the conservation strategy and other covered activities would not violate air quality standards with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plans' policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, Alternative 3 would violate air quality standards or contribute to an existing air quality violation. Impacts associated with the conservation strategy and other covered activities would not violate air quality standards with implementation of AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plans' policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—The County’s general plan EIR determined that a concentrated growth alternative would not result in a cumulatively considerable net increase of any criteria pollutants for which the region is a nonattainment area for (Butte County 2010).

City of Chico—The City of Chico’s general plan EIR determined that an increased density alternative would represent an improvement in air quality over implementation of the general plan, but that impacts to air quality would not be avoided. As a result, the increased density alternative would result in a cumulatively considerable net increase in criteria pollutants that the region is a nonattainment area for (City of Chico 2011b).

City of Oroville—The City of Oroville’s general plan EIR determined that an alternative focused on neighborhood growth and increased density (Alternative 3 in this analysis) would result in decreased emissions compared to build out of the City’s general plan. However, the improvement in air quality would be insubstantial, and the significant impacts would not be avoided. Therefore, implementation of the general plan would result in a cumulatively considerable increase in criteria pollutants.

City of Gridley—The City of Gridley’s general plan EIR determined that a centralized development alternative could cause a cumulatively considerable net increase of criteria pollutants through short-term construction and long-term operational emissions. The centralized development alternative would represent an improvement to air quality over implementation of the general plan, but air quality impacts would not be avoided. Therefore, implementation of the general plan would result in a cumulatively considerable increase in criteria pollutants.

City of Biggs—The City of Biggs’s general plan EIR determined that implementation of the City’s general plan, in combination with cumulative development in the SVAB, would result in a cumulatively considerable net increase of ozone and of coarse and fine particulate matter. Therefore, implementation of the general plan would result in a cumulatively considerable increase in criteria pollutants.

Impacts of Other Covered Activities and Implementation of the Conservation Strategy

As discussed in Impact AQ-1, there may be fewer emissions as a result of less ground disturbed; however, impacts would be the same as those described under Alternative 2. Implementation of Caltrans BMPs, BCAQMD’s CEQA guidelines, BCAQMD’s fugitive PM10 mitigation measures, Alternative 2 AMMs, and Mitigation Measures AQ-1a and AQ-1b will ensure other covered activities, and implementation of the conservation strategy would not result in a cumulatively considerable increase in criteria pollutants.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, Alternative 3 would result in a cumulatively considerable increase in criteria pollutants. Impacts associated with the conservation strategy and other covered activities would not result in a cumulatively considerable increase in criteria pollutants with implementation of Alternative 2

AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plans for the cities of Chico, Oroville, Gridley, and Biggs, Alternative 3 would result in a cumulatively considerable increase in criteria pollutants. Impacts associated with the conservation strategy and other covered activities would not result in a cumulatively considerable increase in criteria pollutants with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the Cities' general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—The County's general plan EIR determined that concentrated growth alternative (Alternative 3 in this analysis) would not expose sensitive receptors to substantial pollutant concentrations (Butte County 2010).

City of Chico—The City of Chico's general plan EIR determined that an increased density development alternative would not expose sensitive receptors to substantial toxic air contaminant concentrations from short-term construction sources, stationary sources, or mobile sources (City of Chico 2011b).

City of Oroville—The City of Oroville's general plan EIR determined that an alternative focused on neighborhood growth and increased density (Alternative 3 in this analysis) would result in decreased emissions compared to implementation of the City's general plan. However, the improvement in air quality would be insubstantial, and the significant impacts would not be avoided.

City of Gridley—The City of Gridley's general plan EIR determined that an alternative with centralized development (Alternative 3 in this analysis), would not expose sensitive receptors to toxic air contaminants.

City of Biggs—The City of Biggs's general plan EIR determined that subsequent land use activities associated with implementation of the general plan could result in projects that would include sources of toxic air contaminants that could affect surrounding land uses. Subsequent land use activities could also place sensitive land uses near existing sources of toxic air contaminants. These factors could result in the exposure of sensitive receptors to substantial pollutant concentrations such as toxic air contaminants. However, the BCAQMD and state regulations would address exposure to toxic air contaminants.

Impacts of Other Covered Activities and Implementation of the Conservation Strategy

As discussed in Impact AQ-1, there may be fewer emissions as a result of less ground disturbed; however, impacts would be the same as those described under Alternative 2. Implementation of Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, Alternative 2 AMMs, and Mitigation Measure AQ-1a will ensure other covered activities and implementation of the conservation strategy would not expose sensitive receptors to substantial pollutant concentrations.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plan for the City of Oroville, Alternative 3 would expose sensitive receptors to substantial pollutant concentrations. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutant concentrations with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1b. Implementation of the city's general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of the general plan for the City of Oroville, Alternative 3 would expose sensitive receptors to substantial pollutant concentrations. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutant concentrations with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1b. Implementation of the city's general plan policies or mitigation measures would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Impact AQ-5: Create objectionable odors affecting a substantial number of people (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development

Butte County—Odor impacts associated with implementation of the general plan were found to be less than significant in the general plan EIR because of general plan policies that would establish land use buffers around potential sources of odor. Alternative 3 would utilize the same general plan policies and would achieve the same significance determination.

City of Chico—The City of Chico's general plan EIR determined that an increased density development alternative (Alternative 3 in this analysis) would not cause odor issues (City of Chico 2011b).

City of Oroville—The City of Oroville's general plan EIR determined that an alternative focused on neighborhood growth and increased density (Alternative 3 in this analysis) would result in decreased emissions compared to implementation of the City's general plan. However, the improvement in air quality would be insubstantial, and the significant impacts would not be avoided.

City of Gridley—The City of Gridley’s general plan EIR determined that a centralized development alternative could expose sensitive receptors to excessive odors. The centralized development alternative would represent an improvement to air quality and odor issues over implementation of the general plan, but impacts would not be avoided.

City of Biggs—The City of Biggs’s general plan EIR determined that a reduced development would not cause odor issues.

Impacts of Other Covered Activities and Implementation of the Conservation Strategy

As discussed in Impact AQ-1, there may be fewer emissions as a result of less ground disturbed; however impacts would be the same as those described under Alternative 2. Implementation of, Caltrans BMPs, BCAQMD’s CEQA guidelines, BCAQMD’s fugitive PM10 mitigation measures, Alternative 2 AMMs, and Mitigation Measure AQ-1a will ensure other covered activities and implementation of the conservation strategy would not produce objectionable odors.

NEPA Determination: As a result of construction-related emissions associated with implementation of the general plans for the city of Oroville and Gridley sensitive receptors would be exposed to objectionable odors. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to odors with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD’s CEQA guidelines, BCAQMD’s fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of the Cities of Gridley and Oroville would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: As a result of construction-related emissions associated with implementation of the general plans for the city of Oroville and Gridley sensitive receptors would be exposed to objectionable odors. Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to odors with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD’s CEQA guidelines, BCAQMD’s fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of the Cities of Gridley and Oroville would not reduce the effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Impact AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with the covered activities and implementation of the conservation strategy would be the same as those for Alternative 2. These activities would generate GHG emissions that may have a significant impact on the environment.

NEPA Determination: The impact determination would be the same as Alternative 2; Implementation of the Cities’ general plan policies or mitigation measures, Caltrans BMPs, and

Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable

CEQA Determination: The impact determination would be the same as Alternative 2. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs

Impact AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with the covered activities and implementation of the conservation strategy would be the same as those described under Alternative 2. These activities would conflict with applicable plans and policies adopted for the purpose of reducing the emissions of GHGs.

NEPA Determination: The impact determination would be the same as Alternative 2; implementation of Mitigation Measure AQ-6 for the conservation strategy will reduce impacts, but they would remain significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; implementation of Mitigation Measure AQ-6 for the conservation strategy will reduce impacts, but they would remain significant and unavoidable.

Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. Therefore, impact mechanisms for air quality and climate change would be similar to those described for Alternative 2.

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development and Other Covered Activities

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and other covered activities within the Plan Area would be the same as those identified under Impact AQ-1 for Alternative 2.

Impacts of the Conservation Strategy

Alternative 4 entails greater conservation than Alternative 2 and would result in additional land acquisition. The additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts, as there is no physical action associated with acquiring

more land for conservation. Thus, the impacts for Alternative 4 would be to the same as Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not conflict with the NSVSPA plan with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the general plan policies or mitigation measures of the Cities of Oroville, Gridley, and Biggs would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not conflict with the NSVSPA plan with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the general plan policies or mitigation measures of the Cities Oroville, Gridley, and Biggs would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development and Other Covered Activities

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and other covered activities within the Plan Area would be the same as those identified under Impact AQ-2 for Alternative 2.

Impacts of the Conservation Strategy

As described under Impact AQ-1, the additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts, thus, the impacts for Alternative 4 would be to the same as those of Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not conflict violate air quality standards with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the general plan policies or mitigation measures of the Cities of Chico, Oroville, Gridley, and Biggs would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not conflict violate air quality standards with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA

guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the general plan policies or mitigation measures of the Cities of Chico, Oroville, Gridley, and Biggs would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development and Other Covered Activities

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and other covered activities within the Plan Area would be the same as those identified under Impact AQ-3 for Alternative 2.

Impacts of the Conservation Strategy

As described under Impact AQ-1, the additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts; thus, the impacts for Alternative 4 would be to the same as those of Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not result in a cumulatively considerable net increase of criteria pollutant with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the general plan policies or mitigation measures of the Cities of Chico, Oroville, Gridley, and Biggs would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not result in a cumulatively considerable net increase of criteria pollutant with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measures AQ-1a and AQ-1b. Implementation of the general plan policies or mitigation measures of the Cities of Chico, Oroville, Gridley, and Biggs would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Mitigation Measure AQ-1b: Implement BCAQMD mitigation measures for fugitive dust

Impact AQ-4: Expose sensitive receptors to substantial pollutant concentrations (NEPA: significant and unavoidable; CEQA: significant and unavoidable)***Impacts of Permanent Development and Other Covered Activities***

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and other covered activities within the Plan Area would be the same as those identified under Impact AQ-4 for Alternative 2.

Impacts of the Conservation Strategy

As described under Impact AQ-1, the additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts; thus, the impacts for Alternative 4 would be to the same as those of Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of Gridley would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable

CEQA Determination: The impact determination would be the same as Alternative 2; impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of Gridley would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment**Impact AQ-5: Create objectionable odors affecting a substantial number of people (NEPA: significant and unavoidable; CEQA: significant and unavoidable)*****Impacts of Permanent Development and Other Covered Activities***

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and other covered activities within the Plan Area would be the same as those identified under Impact AQ-5 for Alternative 2.

Impacts of the Conservation Strategy

As described under Impact AQ-1, the additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts; thus, the impacts for Alternative 4 would be to the same as those of Alternative 2.

NEPA Determination: Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10

mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of Gridley and Oroville would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Impacts associated with the conservation strategy and other covered activities would not expose sensitive receptors to substantial pollutants with implementation of Alternative 2 AMMs, Caltrans BMPs, BCAQMD's CEQA guidelines, BCAQMD's fugitive PM10 mitigation measures, and Mitigation Measure AQ-1a. Implementation of the general plan policies or mitigation measures of Gridley and Oroville would not reduce effects associated with general plan implementation to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-1a: Implement BCAQMD mitigation measures for construction equipment

Impact AQ-6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development and Other Covered Activities

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and other covered activities within the Plan Area would be the same as those identified under Impact AQ-6 for Alternative 2.

Impacts of the Conservation Strategy

As described under Impact AQ-1, the additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts; thus, the impacts for Alternative 4 would be to the same as those of Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs

Impact AQ-7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Permanent Development and Other Covered Activities

Impacts associated with the permanent development within the jurisdictions of the Local Agencies and all other covered activities within the Plan Area would be the same as those identified under Impact AQ-7 for Alternative 2.

Impacts of the Conservation Strategy

As described under Impact AQ-1, the additional conservation component of Alternative 4 (land acquisition) would not present any additional air quality impacts; thus, the impacts for Alternative 4 would be to the same as those of Alternative 2.

NEPA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, as well as transportation facilities, recurring maintenance facilities, water and irrigation district activities, and implementation of the conservation strategy would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels.

CEQA Determination: As a result of construction- and operations-related emissions associated with implementation of all the general plans, as well as transportation facilities, recurring maintenance facilities, water and irrigation district activities, and implementation of the conservation strategy would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Implementation of the Cities' general plan policies or mitigation measures, Caltrans BMPs, and Mitigation Measure AQ-6 will not reduce these effects to less-than-significant levels.

Mitigation Measure AQ-6: Implement best construction practices for minimizing GHGs

5.2.4 Cumulative Analysis

Methods and Approach

According to guidance from BCAQMD, an impact would have a significant cumulative impact if emissions from the project exceed the district's thresholds, or if the project conflicts with the applicable air quality attainment plan. For this analysis, the air district's thresholds were used to assess cumulative impacts.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, *Approach to the Analysis*. Overall, these projects have had or are anticipated to have a cumulative impact on air quality as a result of land-disturbing activities such as converting agricultural lands to urban development, including roadway projects, and developing and operating infrastructure projects.

Emissions resulting from construction and operation of the implementation of the Local Agencies' general plans and other covered activities and implementation of the conservation strategy, in combination with other development in the air basin, could result in cumulatively significant levels of emissions under all alternatives. As discussed above, some of the covered activities would generate emissions that could exceed BCAQMD's thresholds, which, according to BCAQMD guidance, would result in cumulative impacts. Implementation of BCAQMD's standard construction mitigation measures would lessen emissions, however, it is anticipated they would not reduce construction emissions to below BCAQMD's thresholds. As BCAQMD's CEQA Handbook indicates that projects in excess of their numeric thresholds listed in Table 5-9 would result in a significant cumulative impact unless offset, this impact is considered significant and unavoidable.

5.3 References

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6.1 Affected Environment

This section describes the regulatory and environmental setting associated with biological resources in the Plan Area.

6.1.1 Regulatory Setting

Federal

Federal Endangered Species Act

ESA and subsequent amendments provide for the conservation of listed endangered or threatened species, or candidates for listing, and the ecosystems on which they depend. USFWS has jurisdiction over plants, wildlife, and freshwater fish listed under ESA, and the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish and marine fish and mammals. NMFS has issued two BOs for anadromous fish in Butte Creek and the Feather River. Both pertain to Federal Energy and Regulatory Commissions (FERC) relicensing actions: one for the DeSabra-Centerville project and one for the Oroville Dam. Guidelines for protecting anadromous fish are included in both and must be followed by PG&E.

Critical Habitat

ESA Section 3 defines *critical habitat* as follows.

- The specific areas within the geographical area occupied by a species at the time it is listed in accordance with the Act, on which are found those physical or biological features:
 - essential to the conservation of the species, and
 - that may require special management considerations or protection.
- Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Critical habitat designations do not affect activities by private landowners if there is no federal funding or authorization. Federal agencies are required to avoid destruction or adverse modification of designated critical habitat.

Endangered Species Act Prohibitions (Section 9)

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered. *Take*, as defined by ESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct.” *Harm* is defined as “any act that kills or injures the species, including significant habitat modification.” Take of threatened species is also prohibited

under Section 9 unless otherwise authorized by federal regulations.¹ Additionally, Section 9 prohibits removing, cutting, and maliciously damaging or destroying plants listed under ESA on sites that are under federal jurisdiction.

Issuance of Incidental Take Permit for Nonfederal Actions (Section 10)

Section 10 of ESA requires the issuance of an incidental take permit before any nonfederal action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan (HCP) that would minimize and mitigate the take of covered species to the maximum extent practicable.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects migratory bird species from take. Take, under the MBTA, is defined as an action or an attempt to pursue, hunt, shoot, capture, collect, or kill (50 CFR 10.12). The definition differentiates between “intentional” take (take that is the purpose of the activity in question) and “unintentional” take (take that results from, but is not the purpose of, the activity in question).

Executive Order (EO) 13186 (signed January 10, 2001) directs each federal agency taking actions that would have or would likely have a negative impact on migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting federal agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

EO 13186 is designed to assist federal agencies in their efforts to comply with the MBTA; it does not constitute any legal authorization to take migratory birds.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires consultation with USFWS, NMFS, and the state fish and wildlife agencies where the waters of any stream or other body of water are proposed, authorized, permitted, or licensed to be impounded, diverted, or otherwise controlled or modified under a federal permit or license. Consultation is undertaken for the purpose of preventing loss of and damage to wildlife resources.

¹ Exceptions may be made for threatened species under ESA Section 4(d); in such cases, USFWS or NMFS issues a “4(d) rule,” describing protections for the threatened species and specifying the circumstances under which take is no prohibited.

Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. *Point-source pollution* is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. *Nonpoint-source pollution* originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

Permits for the Placement of Dredged or Fill Material into Waters of the United States (Section 404)

CWA Section 404 regulates the discharge of dredged or fill materials into waters of the United States. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land, or changing the bottom elevation of any portion of a water of the United States.

Applicants must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. USACE may issue either an individual permit (standard permit or letter of permission) which would be evaluated on a case-by-case basis, or a general permit issued on a nationwide or regional basis for a category or categories of activities when those activities are substantially similar in nature and cause only minimal individual and cumulative environmental impacts or would result in avoiding unnecessary duplication of regulatory control exercised by another federal, state, or local agency, provided it has been determined that the environmental consequences of the action are individually and cumulatively minimal.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue a standard permit, letter of permission, or verify the use of a general permit until the requirements of NEPA, ESA, and the National Historic Preservation Act (NHPA) have been met. In addition, USACE cannot issue or verify a permit for any activity that may result in a discharge of a pollutant into waters of the United States until a water quality certification or a waiver of certification has been issued pursuant to Section 401 of the CWA.

Permits for Stormwater Discharge (Section 402)

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System Discharge (NPDES) program, administered by EPA. In California, the State Water Resources Control Board (State Water Board) is authorized by EPA to oversee the NPDES program through the Regional Water Quality Control Boards (Regional Water Boards) (see the related discussion of the Porter-Cologne Water Quality Control Act below). The Plan Area is within the jurisdiction of the Central Valley Water Board.

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public Notice of Intent (NOI) to discharge stormwater, and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

Water Quality Certification (Section 401)

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Executive Order 11990: Protection of Wetlands

EO 11990, signed May 24, 1977, directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. Such a project (that encroaches on wetlands) may not be undertaken unless the agency has determined that there are no practicable alternatives to such construction, the project includes all practicable measures to minimize harm to wetlands that would be affected by the project, and the impact will be minor.

Executive Order 13112: Prevention and Control of Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO established the National Invasive Species Council (NISC), which is composed of federal agencies and departments, and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. In 2008, the NISC released an updated national invasive species management plan that recommends objectives and measures to implement the EO and prevent the introduction and spread of invasive species. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

State

California Endangered Species Act

California implemented the CESA in 1984. The act prohibits the take of state-listed endangered and threatened species. Section 2090 of CESA requires state agencies to comply with endangered species

protection and recovery and promote conservation of these species. CDFW administers the act and authorizes take through Section 2081 agreements (except for species designated as fully protected).

State Water Resources Control Board

For Decision ID 4497, the State Water Resources Control Board (State Water Board) listed water temperature for placement on the Section 303(d) list. Consequently, water temperature loggers were deployed in Butte Creek, and the following water quality objective/criterion was established.

The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California including any revisions. There are also temperature objectives for the Delta in the State Water Board's May 1991 Water Quality Control Plan for salinity. At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature. To the extent of any conflict with the above, the more stringent objective applies. In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

Natural Community Conservation Planning Act

In 1991, California's NCCPA (California Fish and Game Code, Section 2800 et seq.) was enacted to implement broad-based planning that balances appropriate development and growth with conservation of wildlife and habitat. Pursuant to the NCCPA, local, state, and federal agencies are encouraged to prepare NCCPs to provide comprehensive management and conservation of multiple species and their habitats under a single plan, rather than through preparation of numerous individual plans on a project-by-project basis. The NCCPA is broader in its orientation and objectives than are ESA and CESA. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use. To be approved by CDFW, an NCCP must provide for the conservation of species and protect natural communities within the inventory area in perpetuity.

An approved NCCP provides for take of species whose conservation and management are provided for in the Plan (California Fish and Game Code Section 2835). The 1991 NCCPA was repealed and replaced with a substantially revised and expanded NCCPA in 2002. The revised NCCPA established new standards and guidance on many facets of the program, including scientific information, public participation, biological goals, interim project review, and approval criteria. The new NCCPA took effect on January 1, 2003.

This Plan complies with the NCCPA to conserve the ecosystems of western Butte County and to provide authorization to take covered species in accordance with Section 2835 of the California Fish and Game Code.

California Fish and Game Code

Section 1602 of the California Fish and Game Code requires project proponents to notify CDFW before any project diverts, obstructs, or changes the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable changes to the project to protect the resources.

These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

The California Fish and Game Code provides protection from take for a variety of species referred to as fully protected species. Section 5050 lists protected amphibians and reptiles. Section 5515 prohibits take of fully protected fish species. Section 3511 prohibits take of fully protected bird species. Section 4700 prohibits take of fully protected mammals. The California Fish and Game Code defines *take* as “hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill.” All take of fully protected species is prohibited, except for take related to scientific research and take associated with an approved NCCP that covers a fully protected species.

Section 3503 prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Many bird species could nest in the Plan Area. The nests would be protected under these sections of the California Fish and Game Code.

Porter-Cologne Water Quality Control Act

California Water Code Section 13260 requires “any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements).” Under the Porter-Cologne Water Quality Control Act definition, *waters of the state* are “any surface water or groundwater, including saline waters, within the boundaries of the state.” Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. Accordingly, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404. If USACE determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the Regional Water Board may impose waste discharge requirements (WDRs) if fill material is placed into waters of the state.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (CNPPA) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the CNPPA are not protected under CESA but rather under CEQA.

Local

Butte County

Butte County General Plan 2030

The policies below are excerpted from the *Butte County General Plan 2030* (Butte County 2012:235–240). These policies are designed to guide planning related to and affecting habitat and biological resources within the County’s jurisdiction.

COS-P6.1: The County shall coordinate with applicable federal, State, regional and local agencies on natural resources and habitat planning.

COS-P7.1: Conservation easements that protect habitat areas, habitat corridors and sensitive biological resources shall be promoted.

COS-P7.2: Clustered development patterns shall be encouraged in order to conserve habitat for protected species and biological resources.

COS-P7.3: Creeks shall be maintained in their natural state whenever possible, and creeks and floodways shall be allowed to function as natural flood protection features during storms.

COS-P7.6: New development projects shall include setbacks and buffers along riparian corridors and adjacent to habitat for protected species, except where permitted in the BRCP Plan Area and where such development is consistent with the conditions of the BRCP, upon the future adoption of the BRCP.

COS-P7.7: Construction barrier fencing shall be installed around sensitive resources on or adjacent to construction sites. Fencing shall be installed prior to construction activities and maintained throughout the construction period.

COS-P7.8: Where sensitive on-site biological resources have been identified, construction employees operating equipment or engaged in any development-associated activities involving vegetation removal or ground disturbing activities in sensitive resource areas shall be trained by a qualified biologist and/or botanist who will provide information on the on-site biological resources (sensitive natural communities, special status plant and wildlife habitats, nests of special-status birds, etc.), avoidance of invasive plant introduction and spread, and the penalties for not complying with biological mitigation requirements and other state and federal regulations.

COS-P7.9: A biologist shall be retained to conduct construction monitoring in and adjacent to all habitats for protected species when construction is taking place near such habitat areas.

COS-P8.1: Native plant species shall be protected and planting and regeneration of native plant species shall be encouraged, wherever possible, in undisturbed portions of development sites.

COS-P8.2: New landscaping shall promote the use of xeriscape and native tree and plant species, including those valued for traditional Native American cultural uses.

COS-P9.1: A biological resources assessment shall be required for any proposed development project where special-status species or critical habitat may be present. Assessments shall be carried out under the direction of Butte County. Additional focused surveys shall be conducted during the appropriate season if necessary. Upon adoption of the BRCP, assessment requirements of the BRCP shall be implemented for development projects within the BRCP Plan Area.

COS-P9.2: If special-status plant or animal species are found to be located within a development site, proponents of the project shall engage in consultation with the appropriate federal, state and regional agencies and mitigate project impacts in accordance with state and federal law. Upon adoption of the BRCP, mitigation requirements of the BRCP shall be implemented for development projects within the BRCP Plan Area. Examples of mitigation may include:

- a. Design the proposed project to avoid and minimize impacts.
- b. Restrict construction to specific seasons based on project-specific special-status species issues (e.g. minimizing impacts on special-status nesting birds by constructing outside of the nesting season).
- c. Confine construction disturbance to the minimum area necessary to complete the work.
- d. Mitigate for the loss of special-status species by purchasing credits at an approved conservation bank (if a bank exists for the species in question), funding restoration or habitat improvement projects at existing preserves in Butte County, or purchasing or donating mitigation lands of substantially similar habitat.
- e. Maintain a minimum 100-foot buffer on each side of all riparian corridors, creeks and streams for special-status and common wildlife.

- f. Establish setbacks from the outer edge of special-status species habitat areas.
- g. Construct barriers to prevent compaction damage by foot or vehicular traffic.

City of Oroville General Plan 2030

The *Oroville 2030 General Plan*, adopted in 2009, contains goals and policies designed to guide planning related to and affecting biological resources within the City of Oroville's jurisdiction.

These goals, contained in the Open Space, Natural Resources, and Conservation Elements of the City's general plan are reproduced below.

Goal OPS-8: Preserve and protect all special-status species that are candidates for federal or state listing, state species of special concern, and CNPS listed plant species.

Goal OPS-9: Protect areas of significant wildlife habitat and sensitive biological resources to maintain biological diversity among plant and animal species in the City of Oroville and the surrounding areas.

Goal OPS-10: Protect riparian, riverine, and open water habitats.

These goals include numerous policies that are designed to guide planning related to and affecting biological resources within the City of Oroville's jurisdiction (City of Oroville 2009:6-33-6-40).

City of Biggs General Plan 1997–2015

The policies below are excerpted from the *City of Biggs General Plan 1997–2015* (City of Biggs 1998:5-5-5-6). These policies are designed to guide planning related to and affecting habitat and biological and mineral resources within the City of Biggs' jurisdiction.

Policy 5.2.A: Apply mitigation measures to development projects to minimize impacts on biological resources during and after construction.

Policy 5.2.B: Consider opportunities for habitat preservation and enhancement in conjunction with public facility projects, particularly storm drainage facilities.

Policy 5.2.D: If the presence of protected species is determined to be likely, the project applicant shall be responsible for all costs associated with investigating species presence and preparation of any required mitigation plans.

Policy 5.2.E: Promote the establishment of an open space reserve along Hamilton Slough in areas southeast and south of the current City limits.

City of Gridley 2030 General Plan

The policies below are excerpted from the Conservation Element of the *City of Gridley 2030 General Plan* (City of Gridley 2009:17). These policies are designed to guide planning related to biological resources within the City of Gridley's jurisdiction.

Policy 5.1: New developments shall use techniques, such as buffers, setbacks, and clustering of development to protect wetlands, riparian corridors, vernal pools, and sensitive species.

Policy 5.3: The City will have former agricultural drainage ditches improved or restored in a way that avoids or improves habitat value and maintains or improves wetland function.

Policy 5.4: The City will condition new development, as necessary, to reduce erosion, siltation, and mitigate impacts on wetland, riverine, and riparian habitats.

Policy 5.7: The City will ensure consistency of new development with applicable portions of the Butte County Habitat Conservation Plan and Natural Communities Conservation Plan.

Policy 5.9: The City will continue to collaborate with the California Department of Fish and Game and the United States Fish and Wildlife Service, as appropriate, to ensure the protection and preservation of special-status species and their habitats within the Gridley Plan Area.

City of Chico General Plan 2030

The policies below are excerpted from the Open Space and Environment Element of the *Chico 2030 General Plan* (City of Chico 2011:10-17–10-19). These policies are designed to guide planning related to biological resources within the City of Chico’s jurisdiction.

Policy OS-1.1 (Native Habitats and Species): Preserve native species and habitat through land use planning, cooperation, and collaboration.

Policy OS-1.2 (Regulatory Compliance): Protect special-status plant and animal species, including their habitats, in compliance with all applicable state, federal and other laws and regulations.

Policy OS-2.1 (Planning and Managing Open Space): Continue acquisition, management, and maintenance of open space to protect habitat and promote public access.

Policy OS-2.4 (Foothill Viewshed): Preserve the foothills as a natural backdrop to the urban form.

Policy OS-2.5 (Creeks and Riparian Corridors): Preserve and enhance Chico’s creeks and riparian corridors as open space for their aesthetic, drainage, habitat, flood control, and water quality values.

Policy OS-2.6 (Oak Woodlands): Protect oak woodlands as open space for sensitive species and habitat.

Policy OS-3.1 (Surface Water Resources): Protect and improve the quality of surface water.

6.1.2 Environmental Setting

This section discusses the biological setting in the Plan Area. The Plan Area (Figure 1-1) encompasses 564,270 acres comprising the western lowlands and foothills of Butte County. It is bounded on the west by the county’s boundaries with Tehama, Glenn, and Colusa Counties; on the south by the boundaries with Sutter and Yuba Counties; on the north by the boundary with Tehama County; and on the east by the upper extent of land dominated by oak woodland natural communities.

The Plan Area was designed to encompass the area within which covered activities would be implemented and to provide sufficient land and resources to implement measures to provide for the conservation of covered species and habitats affected by the proposed covered activities.

Natural Communities and Other Land Cover Types

All information on natural communities and other land cover types was obtained from Chapter 3 and Appendix B of the BRCP. This information was based on extensive land cover mapping conducted for the BRCP and therefore represents the best available landscape-scale data on biological resources in the Plan Area (see BRCP Chapter 3 for details on the methods used for this land cover mapping). The Plan Area contains six major natural communities and eight other land cover types. Table 6-1 lists these types and approximate acreages. The six major natural communities addressed in the BRCP are oak woodland and savannah, grassland, riparian, wetland, aquatic, and agriculture (which, though human-influenced, is considered as a natural community

Table 6-1. Extent of Natural Communities and Other Land Cover Types in the Plan Area (acres)

Land Cover Type	Acres
Oak Woodland and Savanna	
Blue oak savanna	10,581
Blue oak woodland	34,735
Interior live oak woodland	2,382
Mixed oak woodland	44,893
Subtotal	92,951
Grassland	
Grassland	68,124
Grassland with vernal swale complex	34,110
Subtotal	102,234
Riparian	
Cottonwood-willow riparian forest	7,509
Valley oak riparian forest	4,331
Willow scrub	2,995
Herbaceous riparian and river bar	1,658
Dredger tailings with riparian - stream	5,489
Dredger tailings with riparian- non-stream	167
Subtotal	22,149
Wetland	
Emergent wetland	4,440
Managed wetland	25,486
Managed seasonal wetland	2,097
Subtotal	32,023
Aquatic	
Open water	8,401
Major canal	1,897
Stock pond	465 ponds
Subtotal	10,298
Agriculture	
Rice	120,316
Irrigated cropland	20,413
Irrigated pasture	1,160
Orchard/vineyard	110,847
Nonnative woodland	213
Subtotal	252,949
Other Land Cover Types^a	
Chaparral	8,393
Conifer-dominated forest	15
Subtotal	8,408
Total Natural Communities	521,012

Land Cover Type	Acres
Developed	
Urban	24,238
Ranchettes—wooded	6,378
Ranchettes—open	6,985
Disturbed ground	3,390
Subtotal	40,991
Total Land Cover—All Types	562,003 ^b

^a These are types not addressed in the BRCP because of their limited extent in the Plan Area.

^b This number is 130 acres more than the total Plan Area acreage shown in Section 3.2 of the BRCP. This 0.02% difference is attributed to differences between calculating the sum acreage of several thousand polygons (BRCP calculation method) with the total acreage of the Plan Area boundary as one polygon (EIR/EIS calculation method).

because it provides important habitat for some special-status species). The distribution of natural communities in the Plan Area is depicted in Figure 6-1.

Two other land cover types—chaparral and conifer-dominated forest—occur within the Plan Area but are not addressed in the BRCP. They are considered in this EIS/EIR because they provide habitat for special-status species.

Descriptions of the constituent land cover types, distribution, physical conditions, and biological conditions for the six natural communities addressed in the BRCP are provided below. These descriptions contain information summarized from Chapter 3 of the BRCP, which contains additional detailed information about these communities' environmental conditions, environmental gradients, invasive species, and ecosystem function.

Oak Woodland and Savanna

Description

The oak woodland and savannah natural community consists of blue oak woodland, blue oak savannah, interior live oak woodland, and mixed oak woodland land cover types. The oak woodland and savannah natural community occurs in the foothills along the eastern boundary of the Plan Area on relatively level valleys and terraces to steep slopes. The soils that support oak woodland and savannah are typically moderately well drained and the slope aspect typically faces west to southwest.

The vegetation in the oak woodland and savannah natural community consists of an overstory with a minimum canopy cover of 3% and an herbaceous understory with shrubs sparse or absent. The dominant tree species in the overstory are blue oak (*Quercus douglasii*), canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizeni*) and foothill pine (*Pinus sabiniana*). Where present, the shrub understory contains species such as toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*), poison-oak (*Toxicodendron diversilobum*), and ceanothus (*Ceanothus* spp.). The herbaceous understory is dominated by nonnative annual grasses and forbs but also contains native grasses and forbs. Nonnative species that can occur in the herbaceous understory are Kentucky bluegrass (*Poa pratensis* ssp. *pratensis*), hairy rattail fescue (*Vulpia myuros* var. *hirsuta*), and shortfruit stork's bill (*Erodium brachycarpum*). Native herbaceous species that can occur are blue

wildrye (*Elymus glaucus*), soap plant (*Chlorogalum pomeridianum* var. *pomeridianum*), wood rush (*Luzula comosa*), woodland star (*Lithophragma* spp.), and California goldfields (*Lasthenia californica*).

Wildlife Habitat

Oak woodlands provide nesting, foraging, and cover for a variety of species. Acorn woodpecker (*Melanerpes formicivorus*), northern mockingbird (*Mimus polyglottos*), western scrub-jay (*Aphelocoma californica*), and northern flicker (*Colaptes auratus*) are known to nest and forage in these habitats. Additionally, wild turkey (*Meleagris gallopavo*) is known to occur in oak woodlands. Reptiles, including western fence lizard (*Sceloporus occidentalis*), coast horned lizard (*Phrynosoma blainvillii*), gopher snake (*Pituophis catenifer*), and California kingsnake (*Lampropeltis getulus californica*), frequent these habitats. Oak woodlands provide cover and foraging opportunities for numerous mammals, including Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), black-tailed deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), and wild pig (*Sus scrofa*), and nesting opportunities for western gray squirrel (*Sciurus griseus*).

Grasslands

Description

The grasslands natural community in the Plan Area comprises two types: grasslands and grasslands with vernal swale complexes. Grasslands with vernal swale complexes are dominated by networks of meandering swales that channel flow across the landscape among varying distributions and densities of vernal pools and are associated with mound and intermound topography.

The vegetation in grasslands consists primarily of nonnative annual grasses that can include soft chess (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), wild oats (*Avena* spp.), and Italian ryegrass (*Lolium multiflorum*). Native perennial grasses, native forbs, and nonnative forbs also occur in grassland without vernal pools. Representative native species that are known to occur in grasslands are purple needlegrass (*Nassella pulchra*), Indian ryegrass (*Oryzopsis hymenoides*), butter-and-eggs (*Triphysaria eriantha*), California poppy (*Eschscholzia californica*), and pitgland tarweed (*Holocarpha virgata*).

Grasslands with vernal pools and/or swales are more common in the portion of the Plan Area east of Chico. Methodology used to map vernal pools in the Plan Area is included in Appendix I of the BRCP. Vegetation in the vernal pools and/or swales typically contains a higher proportion of native species than the adjacent grasslands. Several of the vernal pool endemics that are known from the Plan Area are listed under ESA and CESA: Hoover's spurge (*Chamaesyce hooveri*), Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*), hairy Orcutt grass (*Orcuttia pilosa*), slender Orcutt grass (*Orcuttia tenuis*), and Greene's tuctoria (*Tuctoria greenei*). Other species associated with vernal pools and/or swales are yellow carpet (*Blennosperma nanum*), Fremont's goldfields (*Lasthenia fremontii*), coyote thistle (*Eryngium* spp.), white navarretia (*Navarretia leucocephala*), sack clover (*Trifolium depauperatum*), and downingia (*Downingia* spp.).

Wildlife Habitat

Annual grasslands provide food and cover for abundant small mammals, including California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse

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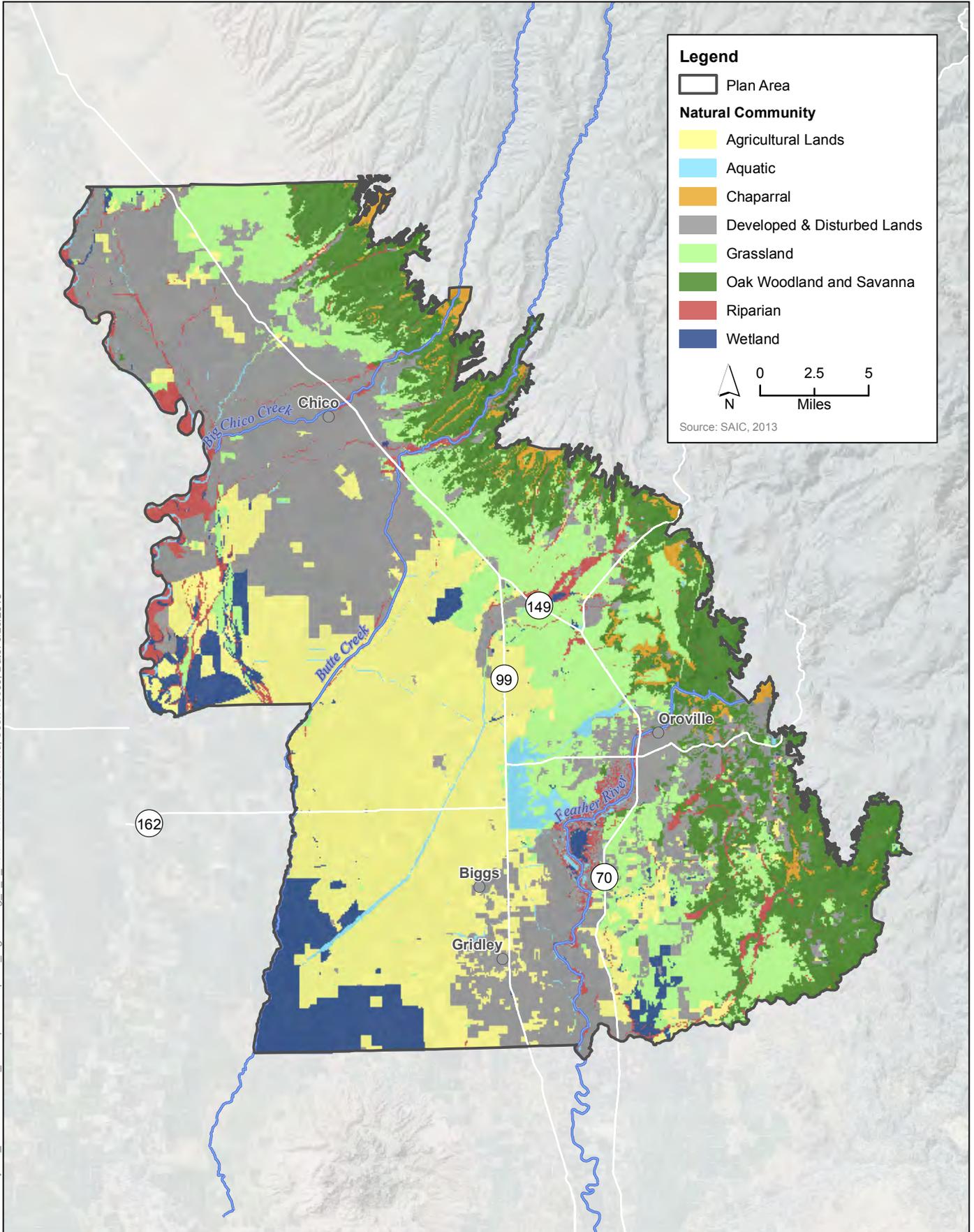


Figure 6-1
Natural Communities



(*Peromyscus maniculatus*), California vole (*Microtus californicus*), and black-tailed hare (*Lepus californicus*). Consequently, raptors such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), and American kestrel (*Falco sparverius*) forage in annual grasslands. Other characteristic wildlife species include gopher snake, western rattlesnake (*Crotalus viridis*), western kingbird (*Tyrannus verticalis*), western bluebird (*Sialia mexicana*), and western meadowlark (*Sturnella neglecta*). Burrowing owl (*Athene cunicularia*) and American badger (*Taxidea taxus*) may use these areas for denning and foraging.

Where grasslands occur adjacent to permanent or semipermanent water features, such as canals, giant garter snake (*Thamnophis gigas*) may use these areas for upland cover; similarly, grasslands adjacent to canals, creeks, or ponds may be used for nesting or cover by western pond turtles (*Actinemys marmorata*). Grasslands containing seasonally inundated wetlands, such as vernal pools, may provide upland sites for California tiger salamander (*Ambystoma californiense*). Grasslands in the Plan Area are known to provide suitable winter foraging habitat for greater sandhill crane (*Grus canadensis*) and numerous waterfowl species.

Vernal pools in grasslands provide habitat for aquatic invertebrates that can tolerate the extreme range of conditions that characterize these ecosystems. Many of these species are specialized to complete their life cycles in the short period during which pools are ponded. Vernal pool invertebrates include crustaceans such as vernal pool fairy shrimp (*Branchinecta lynchi*), California fairy shrimp (*Linderiella occidentalis*), midvalley fairy shrimp (*Branchinecta mesovallensis*), tadpole shrimp (*Lepidurus packardii*); various genera of clam shrimp, seed shrimp, and daphnia; and water beetles, water boatmen, and aquatic larvae of fly and dragonfly species. Vernal pool invertebrate communities have evolved in the absence of aquatic predators such as fish and nonnative bullfrogs (*Rana catesbeiana*), which cannot survive in vernal pools because of their prolonged dry period.

Vernal pools also support amphibians such as Pacific treefrog (*Pseudacris regilla*), western toad (*Bufo boreas*), California tiger salamander, and western spadefoot (*Spea hammondi*). Vernal pool complexes are also important habitat for migratory birds, including herons, egrets, shorebirds, and waterfowl. Other birds, such as raptors (e.g., hawks, falcons, and kites) and a variety of songbirds, use vernal pool complexes for foraging and as water sources.

Riparian Communities

Description

The riparian natural communities comprise cottonwood willow riparian, valley oak riparian forest, willow scrub, herbaceous riparian river bar, dredger tailings with riparian—stream associated, and dredger tailings with riparian—non—stream associated. Dredger tailings are characterized by long mounds of alluvial deposits that formed as a result of past surface gold mining. The dredger tailings often support areas of dense riparian trees and shrubs interspersed with ponds and areas of bare sand and gravel.

The dominant vegetation in the riparian natural community can consist of either mature, tall trees or small trees and shrubs. Typical overstory species consist of Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), red willow (*Salix laevigata*), Goodding's willow (*S. gooddingii*), valley oak (*Q. lobata*), western sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*). In addition to immature overstory species, the understory can contain shrubs and woody vines such as narrow-leaved willow (*Salix exigua*), blackberry (*Rubus* spp.), wild grape (*Vitis californica*), and wild rose

(*Rosa* spp.). Herbaceous species such as mugwort (*Artemisia douglasiana*), California aster (*Aster chilensis*), northern willow-herb (*Epilobium ciliatum*), and horsetail (*Equisetum* spp.) may also be present in the understory of the riparian natural community.

Wildlife Habitat

Riparian forest communities provide wildlife with dispersal and migration corridors and foraging areas, cover, and breeding habitat. Many species of birds, mammals, reptiles, and amphibians are known to use riparian communities and other woody vegetation communities near watercourses. Riparian trees provide suitable nesting and roosting habitat for a variety of raptors, egrets, herons, songbirds, and bats. Birds known to nest in these communities include red-shouldered hawk, red-tailed hawk, Swainson's hawk, white-tailed kite, Cooper's hawk (*Accipiter cooperii*), American kestrel, great blue heron (*Ardea herodias*), great egret (*Ardea alba*), Nuttall's woodpecker (*Picoides nuttallii*), western scrub-jay, California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), black phoebe (*Sayornis nigricans*), warbling vireo (*Vireo gilvus*), yellow-rumped warbler (*Dendroica coronata*), wrentit (*Chamaea fasciata*), and house wren (*Troglodytes aedon*).

Bats species known to use riparian habitats for roosting include California myotis (*Myotis californicus*), Yuma myotis (*Myotis yumanensis*), hoary bat (*Lasiurus cinereus*), western red bat (*Lasiurus blossevillii*), and pallid bat (*Antrozous pallidus*). Other mammal species known to use these communities include American beaver (*Castor canadensis*), Virginia opossum, striped skunk, black-tailed deer, raccoon, and muskrat (*Ondatra zibethicus*). Reptiles, including common garter snake (*Thamnophis sirtalis*), western fence lizard, and western pond turtle, and amphibians, including Pacific treefrog, western toad, and bullfrog, are also associated with these communities. Additionally, valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) may occur in areas where elderberry shrubs are present.

Riparian scrub provides nesting, cover, and foraging habitat for numerous bird species. Specifically, California quail (*Callipepla californica*), song sparrow (*Melospiza melodia*), spotted towhee, California towhee, wrentit, and bushtit (*Psaltriparus minimus*) are known to nest in these communities. Riparian scrub provides functions and values for reptiles, amphibians, and mammals similar to those described above for riparian forest.

Fish such as juvenile steelhead (*Oncorhynchus mykiss*) and Chinook salmon (*Oncorhynchus tshawytscha*) utilize stream reaches which have riparian vegetation. Overhanging riparian vegetation along watercourses provides rearing areas, cover and food resources for salmonids.

Wetlands

Description

The wetland natural community in the Plan Area consists of emergent wetlands, managed wetlands, and managed seasonal wetlands. For a discussion of vernal pools, see the *Grasslands* section above. Emergent wetlands are scattered throughout the Plan Area and are frequently associated with streams, rivers, and areas that receive water in the form of agricultural runoff. Most of the managed wetlands are in the western portion of the Plan Area and are associated with the Butte Basin, the Sacramento River, and the Feather River. Managed wetlands are associated with private hunting clubs or federal and state wildlife refuges such as Gray Lodge Wildlife Area, Sacramento River National Wildlife Refuge, and the Oroville Wildlife Area. The wetland natural community is supported by soils that occur in floodplains and flood basins. Managed seasonal wetlands typically

involve winter flooding of most of the managed wetland landscape for migratory bird foraging and resting habitat, followed by a slow drawdown of water to manage plant seed production.

Vegetation in the wetland natural community is somewhat variable. Emergent wetlands typically contain cattails (*Typha* spp.), sedges (*Carex* spp.), tule (*Scirpus acutus*), and bulrushes (*Scirpus* spp.) with margins supporting willows (*Salix* spp.) and blackberry. Managed wetlands, which have frequently been reverted from agricultural use, contain a combination of open water and vegetation types, including cottonwood-willow forest, willow scrub, ponds, freshwater marsh, and areas dominated by blackberry. Vegetation in managed wetlands may also include crops (e.g., millet and rice) that have been planted to reduce the destruction of adjacent agricultural lands by waterfowl and other wildlife.

Wildlife Habitat

Wetland provides cover and breeding habitat for amphibians including bullfrog, Pacific treefrog, and western toad, and reptiles including common garter snake and giant garter snake. Characteristic birds that nest in (or in association with) fresh emergent wetlands in the Plan Area include Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), gadwall (*Anas strepera*), Virginia rail (*Rallus limicola*), sora (*Porzana carolina*), American coot (*Fulica americana*), common moorhen (*Gallinula chloropus*), red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), and northern harrier (*Circus cyaneus*). Though uncommon, California black rail (*Laterallus jamaicensis coturniculus*) could also use these areas for nesting. Mammals known to use emergent wetlands in the Plan Area include a variety of foraging bats, vagrant shrew (*Sorex vagrans*), ornate shrew (*Sorex ornatus*), American beaver, and muskrat. Managed wetlands such as the Butte Sink provide off-channel rearing opportunities for juvenile Chinook salmon during winter and spring over a broad range of flow conditions. Wetland habitats have been shown to create favorable conditions for feeding and growth of salmon, especially in wet years when these habitats can greatly expand the amount of available rearing habitat (Sommer et al. 2001, 2005).

Aquatic Communities

Description

The aquatic natural community type comprises open water, major canal, and stock pond land cover types. The aquatic natural community type is scattered throughout the Plan Area. Open water cover types consist of rivers and streams bordered by riparian and wetland cover types. Along valley floor streams (e.g., lower Butte Creek), aquatic habitat for fish and wildlife can expand seasonally during high flows to adjacent riparian, wetland, and floodplain habitats.

Wildlife Habitat

The riparian forest and riparian scrub communities are associated with open water habitats, and provide important wildlife habitat, as described above.

In addition to providing resources for fish, discussed below, open water habitat provides foraging, cover, and reproductive sites for a variety of wildlife species. Open water areas provide essential aquatic habitat for wading birds (e.g., great blue heron, great egret); waterfowl (e.g., northern pintail [*Anas acuta*], green-winged teal [*Anas crecca*], and ring-necked duck [*Aythya collaris*]); water birds (e.g., eared grebe [*Podiceps nigricollis*], double-crested cormorants [*Phalacrocorax auritus*]); and land

birds (e.g., osprey [*Pandion haliaetus*], belted kingfisher [*Megaceryle alcyon*]). Reptiles and amphibians, including western pond turtle, common garter snake, western aquatic garter snake (*Thamnophis couchii*), Pacific treefrog, western toad, and bullfrog breed and/or forage in open water areas. Within the Plan Area, open water habitats—specifically, major canals—have some potential to support giant garter snake. Smaller agricultural canals associated with rice and other flooded crops are discussed in the description of agricultural lands below. Bats, including California myotis, Yuma myotis, hoary bat, western red bat, and pallid bat, are associated with riparian forests and forage for insects over open water. Terrestrial mammals, including black-tailed deer, raccoon, striped skunk, and Virginia opossum, use rivers and streams as water sources. Aquatic and semiaquatic mammals that occur in open water habitats include beaver, river otter (*Lontra canadensis*), mink (*Mustela vison*), and muskrat.

Some fish species that occur in streams and rivers within the Plan Area include Sacramento sucker (*Catostomus occidentalis*), Sacramento pikeminnow (*Ptychocheilus grandis*), white sturgeon (*Acipenser transmontanus*), striped bass (*Morone saxatilis*), and American shad (*Alosa sapidissima*). Nonnative warmwater fish species such as bass (*Micropterus* spp.), sunfish species (*Lepomis* spp.), and crappie (*Pomoxis* spp.) could occur in canals and stock ponds in the Plan Area (Butte County Association of Governments 2012).

Agricultural Lands

Description

The agricultural natural community type is made up of several land cover types: orchards and vineyards, rice, irrigated cropland, irrigated pasture, and nonnative woodland. Nonnative woodland is included in the agricultural community type because it consists of eucalyptus plantations that have been planted for commercial purposes (e.g., pulp production). The agricultural natural community type encompasses the majority of the western half of the Plan Area—the north Central Valley where the soils and topography are the most suitable. The southwestern portion of the Plan Area supports rice, and orchards and vineyards are the dominant agricultural land cover type in the north. Soils in agricultural lands in the Plan Area vary from north to south (e.g., soils that support rice fields are less well drained than soils that support orchards and vineyards).

Vegetation in the agricultural natural community type consists of field crops and orchards and vineyards. Field crops include rice, irrigated pasture, alfalfa, and wheat. Orchard crops include almonds, olives, peaches, plums, and walnuts.

Wildlife Habitat

Orchards and vineyards provide very little value for wildlife, although birds such as red-shouldered hawk, American crow (*Corvus brachyrhynchos*), yellow-billed magpie (*Pica nuttalli*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), and rock pigeon (*Columba livia*) may nest or forage in these areas.

Row and field crops provide foraging opportunities for a variety of raptors, including red-tailed hawk, Swainson's hawk, white-tailed kite, American kestrel, burrowing owl, northern harrier, great horned owl, barn owl, and other migratory and resident birds (e.g., sandhill crane, Brewer's blackbird [*Euphagus cyanocephalus*], red-winged blackbird, tricolored blackbird, American crow, yellow-billed magpie, European starling, western meadowlark, mourning dove, and rock pigeon).

Birds such as burrowing owl, northern harrier, and western meadowlark are known to nest in or adjacent to these areas.

Flooded agricultural fields, particularly rice fields, provide foraging habitat for a variety of waterfowl, including tundra swan (*Cygnus columbianus*), snow goose (*Chen caerulescens*), white-front goose (*Anser albifrons*), and several species of ducks. Wading and shore birds are known to forage in flooded agricultural fields, including herons, egrets, long-billed curlew (*Numenius americanus*), killdeer (*Charadrius vociferous*), and greater yellow-legs (*Tringa melanoleuca*).

Within the Plan Area, rice fields (and associated agricultural ditches or canals) support giant garter snake. Mammals known to occur in all types of agricultural lands include coyote (*Canis latrans*), gray fox, black-tailed hare, California ground squirrel, Botta's pocket gopher, deer mouse, and California vole. Reptiles such as western fence lizard, gopher snake, and California kingsnake may also be found in association with agricultural areas.

Chaparral

Description

Chaparral occurs in the Cascade and Sierra Nevada foothills in the eastern portion of the Plan Area. Chaparral is typically found on steep slopes with relatively thin, well-drained soils.

The chaparral within the Plan Area is best described as mixed chaparral. This community is characterized by dense shrubs and small trees, dominated by ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.), oaks (*Quercus* spp.), and chamise (*Adenostoma fasciculatum*). Other common species include California buckeye (*Aesculus californica*), toyon (*Heteromeles arbutifolia*), and mountain mahogany (*Cercocarpus betuloides*).

Wildlife Habitat

Chaparral provides habitat for a variety of common reptiles, birds, and mammals. Numerous rodents, deer, and other herbivores are common in chaparral communities. Chaparral provides important winter range foraging areas for black-tailed deer. Chaparral also provides habitat for western fence lizard, gopher snake, California kingsnake, California quail (*Callipepla californica*), Bewick's wren (*Thryomanes bewickii*), wrentit (*Chamaea fasciata*), and brush mouse (*Peromyscus boylii*).

Conifer-Dominated Forest

Description

A small amount of conifer-dominated forest occurs on the eastern edge of the Plan Area in the Cascade and Sierra Nevada foothills. Coniferous forests are more prevalent at higher elevations east of the Plan Area.

The conifer-dominated forest in the Plan Area is best described as ponderosa pine forest. This community is typically dominated by pure stands of ponderosa pine (*Pinus ponderosa*), but at lower elevations it can be mixed with blue oaks, interior live oaks, foothill pines, ceanothus, and manzanita.

Wildlife Habitat

Conifer forests provide habitat for a large number of wildlife species. The wide variety of plant species in conifer forests provides a diversity of food and cover for wildlife. Mature forests are valuable habitat for cavity-nesting birds. Wildlife species common in this habitat type include Steller's jay (*Cyanocitta stelleri*), hairy woodpecker (*Picoides villosus*), mountain chickadee (*Parus gambeli*), western gray squirrel, gray fox, and blacktail deer.

Special-Status Species

Special-status species are defined as plants and animals that are legally protected under ESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as species in any of the categories listed below.

- Species that are listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.11 for listed animals and various notices in the FR for proposed species).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (75 FR 69222, November 10, 2010).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Animals listed as California species of special concern on CDFW's Special Animals List (California Department of Fish and Game 2011).
- Animals that are fully protected in California under the California Fish and Game Code (Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Plants listed as rare under the CNPPA (California Fish and Game Code Section 1900 et seq.).
- Plants considered by CDFW and the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Rare Plant Ranks 1A, 1B, and 2) (California Department of Fish and Wildlife 2013b).

The State CEQA Guidelines state that the lead agency preparing an EIR must consult with and receive written findings from CDFW concerning project impacts on species listed as threatened or endangered.

Special-Status Plants

Based on the USFWS (2013) species list for Butte County, CNDDDB (2013a) records search, and the CNPS (2013) inventory search, 59 special-status plant species were identified as occurring or having the potential to occur in the Plan Area. Table 6-2 lists the status, geographic distribution, habitat requirements, and reported blooming period for each species. Thirty of the 59 species have been reported in the Plan Area. These 30 species include the 14 species that are proposed for coverage under the BRCP. Of the remaining 29 species, 14 were determined to be unlikely to occur in the Plan Area because their elevation ranges are substantially higher than the highest elevation in the Plan Area or because they inhabit natural communities (e.g., chaparral, coniferous forest) that are not proposed for coverage under the BRCP. These 14 species are not discussed further in this EIS/EIR.

Table 6-2. Special-Status Plants Identified as Occurring or Having the Potential to Occur in the Plan Area

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Jepson's onion <i>Allium jepsonii</i> Not covered	-/-/1B.2	Sierra Nevada Foothills in Butte, El Dorado, Placer, and Tuolumne Counties	Serpentine or (volcanic) basalt outcrops in oak woodland, chaparral, and lower montane coniferous forest; 300–1,320 meters	Apr–Aug	Not reported in the Plan Area. Potential habitat in oak woodland natural community type but microhabitat (i.e., soil types) may not be present.
Slender silver moss <i>Anomobryum julaceum</i> Not covered	-/-/2.2	Scattered occurrences in California from Humboldt and Shasta south to Los Angeles Counties; Oregon and elsewhere	On damp rock and soil on outcrops, usually on roadcuts in broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest; 100–1,000 meters	N/A	Not reported in the Plan Area. Potential habitat in oak woodland natural community type but microhabitat (i.e., outcrops) may not be present.
Ferris's milk-vetch <i>Astragalus tener</i> var. <i>ferrisiae</i> Covered	-/-/1B.1	Historical range included the Central Valley from Butte to Alameda County but currently only occurs in Butte, Glenn, Colusa, and Yolo Counties	Seasonally wet areas in meadows and seeps, subalkaline flats in valley and foothill grassland; 2–75 meters	Apr–May	Seven occurrences reported in the western half of the Plan Area.
Heartscale <i>Atriplex cordulata</i> Not covered	-/-/1B.2	Western Central Valley and valleys of adjacent foothills	Saline or alkaline soils in chenopod scrub, meadows and seeps, sandy areas in valley and foothill grassland; 1–375 meters	Apr–Oct	Two occurrences reported in the southwestern portion of the Plan Area.
Lesser saltscale <i>Atriplex minuscula</i> Covered	-/-/1B.1	Sacramento and San Joaquin Valley, Butte County and from Merced County to Kern County	Sandy alkaline soils in chenopod scrub, playas, valley and foothill grassland; 15–200 meters	May–Oct	Two occurrences reported in the southwestern portion of the Plan Area.
Subtle orache <i>Atriplex subtilis</i> Not covered	-/-/1B.2	Central Valley, especially San Joaquin Valley with occurrences in Butte, Fresno, Kings, Kern, Madera, Merced, and Tulare Counties	Alkali scalds and alkali grasslands, often near vernal pools; 40–100 meters	Jun–Aug (uncommonly Oct)	One occurrence reported in southwestern portion of Plan Area.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> Not covered	-/-/1B.2	Scattered occurrences in the Coast Ranges and Sierra Nevada Foothills	Sometimes on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 90–1,555 meters	Mar–Jun	Not reported in the Plan Area. Potential habitat in grassland natural community type.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Dwarf resin birch <i>Betula glandulosa</i> Not covered	-/-/2.2	Cascade Range, Warner Mountains; also Oregon, Washington, and elsewhere	Wet areas in bogs and fens, meadows and seeps, marshes and swamps, lower montane coniferous forest, subalpine coniferous forest; 1,310–2,300 meters	May–Jun	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Upswept moonwort <i>Botrychium ascendens</i> Not covered	-/-/2.3	Southern high Cascade Range, and scattered occurrences elsewhere: Butte, El Dorado, Lassen, Mono, Modoc, Plumas, Shasta, Tehama, and Tulare Counties; Idaho, Oregon, Nevada, Washington, and elsewhere	Wet areas in lower montane coniferous forest; 1,500–2,285 meters	N/A	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Scalloped moonwort <i>Botrychium crenulatum</i> Not covered	-/-/2.2	Scattered occurrences in mountains of California; Nevada, Oregon, and elsewhere	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamp; 1,268–3,280 meters	N/A	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Mingan moonwort <i>Botrychium minganense</i> Not covered	-/-/2.2	High Cascade Range, southern High Sierra Nevada with occurrences in Butte, Fresno, Lassen, Modoc, Nevada?, Placer, Plumas, San Bernardino, Shasta, Sierra, Tehama, and Tulare Counties; Arizona, Idaho, Nevada, Oregon, Utah, Washington, and elsewhere	Wet areas in lower montane coniferous forest; 1,455–2,055 meters	N/A	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Western goblin <i>Botrychium montanum</i> Not covered	-/-/2.1	Southern high Cascade Range; Oregon, Washington	Wet areas in lower montane coniferous forest; 1,465–2,130 meters	N/A	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Watershield <i>Brasenia schreberi</i> Not covered	-/-/2.3	Scattered occurrences in north and central California; widespread across US	Freshwater marshes; 30–2,200 meters	Jun–Sep	Not reported in the Plan Area. Potential habitat present in wetland natural community type.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Round-leaved filaree <i>California macrophylla</i> Not covered	-/-/1B.1	Scattered occurrences in the Great Valley, southern North Coast Ranges, San Francisco Bay Area, South Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges	Cismontane woodland, valley and foothill grassland on clay soils; 15–1,200 meters	Mar–May	One occurrence reported in the southwest portion of the Plan Area
Flagella-like atractylocarpus <i>Campylopodiella</i> <i>stenocarpa</i> Not covered	-/-/2.2	Known in California from one occurrence near Helena in Trinity County and a second in Butte County; also known from Montana and Oregon	Cismontane woodland, often on seeps on road cut cliffs; 100–500 meters	N/A	One occurrence reported in the central portion of the Plan Area.
Mud sedge <i>Carex limosa</i> Not covered	-/-/2.2	High Sierra Nevada: Butte, El Dorado, Fresno, Lassen, Nevada, Plumas, Siskiyou, and Tuolumne Counties; Nevada and elsewhere	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest; 1,200–2,700 meters	Jun–Aug	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Pink creamsacs <i>Castilleja rubicundula</i> <i>ssp. rubicundula</i> Not covered	-/-/1B.2	Inner North Coast Ranges with occurrences in Butte, Colusa, Glenn, Lake, and Napa Counties	Serpentine soils in chaparral openings, cismontane woodland, meadows and seeps, valley and foothill grassland; 20–900 meters	Apr–Jun	Four scattered occurrences reported in the Plan Area.
Pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i> Not covered	-/-/1B.2	Southern North Coast Ranges, southern Sacramento Valley, northern and central Western California	Coastal prairie, chaparral, meadows and seeps, coastal salt marshes and swamps, vernal mesic valley and foothill grassland, often in alkaline soils; 2–420 meters	May–Nov	One occurrence reported in the southwestern portion of the Plan Area.
Hooever's spurge <i>Chamaesyce hooveri</i> Covered	T/-/1B.2	Central Valley from Butte County to Tulare County	Below the high-water mark of large northern hardpan and volcanic vernal pools; 25–250 meters	Jul–Sep (uncommonly Oct)	Four occurrences have been reported in the northern and central portions of the Plan Area.
Red Hills soaproot <i>Chlorogalum</i> <i>grandiflorum</i> Not covered	-/-/1B.2	North and central Sierra Nevada Foothills: Amador, Butte, Calaveras, El Dorado, Placer, and Tuolumne Counties	Serpentine or gabbro soils in chaparral, lower montane coniferous forest, and cismontane woodland; 245–1,240 meters	May–Jun	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type but microhabitat (i.e., soil types) may not be present.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Brandegee's clarkia <i>Clarkia biloba</i> ssp. <i>brandegeae</i> Not covered	-/-/1B.2	Northern Sierra Nevada Foothills from Butte to El Dorado Counties	Chaparral, cismontane woodland, lower coniferous forest, often on roadcuts; 73–915 meters	May–Jul	Five occurrences reported in eastern half of Plan Area.
White-stemmed clarkia <i>Clarkia gracilis</i> ssp. <i>albicaulis</i> Not covered	-/-/1B.2	Southern Cascade Range foothills, Butte, Lake, and Tehama Counties	Chaparral, cismontane woodland, sometimes on serpentine soils; 245– 1,085 meters	May–Jul	Three occurrences in the northeastern portion of the Plan Area.
Mildred's clarkia <i>Clarkia mildrediae</i> ssp. <i>mildrediae</i> Not covered	-/-/1B.3	Southern Cascade Range, northern Sierra Nevada, and the Feather River drainage with occurrences in Butte and Plumas Counties	Shaded areas in cismontane woodland and lower montane coniferous forest, on sandy, usually granitic soils; 245–1,710 meters	May–Aug	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type but microhabitat (i.e., soil types) may not be present.
Mosquin's clarkia <i>Clarkia mosquinii</i> Not covered	-/-/1B.1	Northern Sierra Nevada Foothills in vicinity of Feather River Canyon near Pulga in northeast Butte County and Plumas County	Rocky, roadside areas in cismontane woodland and lower montane coniferous forest; 185–1,219 meters	May–Jul	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type but microhabitat (i.e., soil types) may not be present.
Recurved larkspur <i>Delphinium recurvatum</i> Not covered	-/-/1B.2	Central Valley from Colusa* to Kern Counties	Alkaline soils in valley and foothill grassland, saltbush scrub, cismontane woodland; 3–750 meters	Mar–Jun	One occurrence reported in the southwest portion of the Plan Area.
Norris' beard moss <i>Didymodon norrisii</i> Not covered	-/-/2.2	Scattered occurrences in California: Contra Costa, Colusa, Humboldt, Lake, Los Angeles Madera, Monterey, Nevada, Plumas, San Benito, Santa Cruz, Sierra, Shasta, Sonoma, Tehama, Tulare, and Tuolumne Counties; Oregon	Intermittently wet areas in rock outcrops in cismontane woodland, lower montane coniferous forest; 600–1,973 meters	N/A	One occurrence reported in the northern portion of the Plan Area.
Clifton's eremogone <i>Eremogone cliftonii</i> Not covered	-/-/1B.3	Butte, Plumas Counties	Openings, usually granitic, in chaparral, lower montane coniferous forest, upper montane coniferous forest; 455–1,770 meters	Apr–Sep	Not reported in the Plan Area. Species' habitats not covered by BRCP.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Ahart's buckwheat <i>Eriogonum umbellatum</i> var. <i>ahartii</i> Not covered	-/-/1B.2	Butte and Yuba Counties	On serpentinite substrates on slopes and in opening in chaparral and oak woodland; 400–2,000 meters	Jun–Sep	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type but microhabitat (i.e., serpentine) may not be present.
Minute pocket moss <i>Fissidens pauperculus</i> Not covered	-/-/1B.2	Butte, Del Norte, Humboldt, Mendocino, Marin, and Santa Cruz Counties	Damp, coastal soil in North Coast coniferous forest; 10–1,024 meters	N/A	Not reported in the Plan Area and potential habitat consists of natural community type not covered by BRCP.
Adobe lily <i>Fritillaria pluriflora</i> Not covered	-/-/1B.2	Northern Sierra Nevada Foothills, Inner North Coast Ranges, edges of Sacramento Valley	Chaparral, cismontane woodland, valley and foothill grassland, often on adobe soils; 60–705 meters	Feb–Apr	Seven occurrences reported in the northwestern portion of the Plan Area.
Rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> Not covered	-/-/2.2	Central and southern Sacramento Valley, deltaic Central Valley, and elsewhere in the U.S.	Freshwater marshes and swamps; below 120 meters	Jun–Sep	Twenty-four occurrences scattered throughout the western half of the Plan Area.
California satintail <i>Imperata brevifolia</i> Not covered	-/-/2.1	Butte, Fresno, Imperial, Inyo, Kern, Lake*, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, Ventura Counties; Arizona, Baja California-Mexico, New Mexico*, Nevada, Texas, Utah	Mesic sites in chaparral, coastal scrub, Mojave desert scrub, meadows often alkali, riparian scrub; 0–500 meters	Sep–May	Two occurrences reported in the northwestern portion of the Plan Area.
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i> Covered	-/-/1B.2	Eastern Sacramento Valley, northeastern San Joaquin Valley with occurrences in Butte, Calaveras, Placer, Sacramento, and Yuba Counties	Mesic areas in valley and foothill grassland, vernal pool margins; 30–229 meters	Mar–May	Seven occurrences reported in the southeastern portion of the Plan Area.
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i> Covered	-/-/1B.1	Northern Sacramento Valley and Cascade Range foothills with occurrences in Butte, Placer, Shasta, and Tehama Counties	Seasonally wet areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; 35–1,020 meters	Mar–May	Fifteen occurrences reported in the central portion of the Plan Area east of State Route 99.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Colusa layia <i>Layia septentrionalis</i> Not covered	-/-/1B.2	Inner North Coast Range: Colusa, Glenn, Lake, Mendocino, Napa, Sonoma, Sutter, Tehama, and Yolo Counties	Sandy or serpentine soils in valley and foothill grassland, chaparral, and cismontane woodland; 100–1,095 meters	Apr–May	Not reported in the Plan Area. Potential habitat present in oak woodland and grassland natural community types but microhabitat (i.e., soil types) may not be present.
Cantelow's lewisia <i>Lewisia cantelovii</i> Not covered	-/-/1B.2	Canyons of the Sacramento River, North and Middle Forks of the Feather River, and Yuba River	In moist areas on granitic or sometimes serpentinite seeps in chaparral, cismontane woodland, broadleaved upland forest, lower montane coniferous forest; 330–1,370 meters	May–Oct	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type but microhabitat (i.e., seeps) may not be present.
Butte County meadowfoam <i>Limnanthes floccosa</i> <i>ssp. californica</i> Covered	E/E/1B.1	Endemic to Butte County	Wet areas in valley and foothill grassland, vernal pools and swales; 50–930 meters	Mar–May	Twenty-one natural occurrences have been reported throughout Plan Area.
Veiny monardella <i>Monardella douglasii</i> <i>ssp. venosa</i> Covered	-/-/1B.1	Occurrences in the northern and central Sierra Nevada foothills; also historically known from the Sacramento Valley	Heavy clay soils in cismontane woodland, valley and foothill grassland; 60–410 meters	May–Jul	Two occurrences reported in the northeastern portion of the Plan Area.
Hairy Orcutt grass <i>Orcuttia pilosa</i> Covered	E/E/1B.1	Scattered locations along east edge of the Central Valley and adjacent foothills from Tehama to Merced Counties	Vernal pools; 46–200 meters	May–Sep	One occurrence reported along State Route 99 in the central portion of the Plan Area.
Slender Orcutt grass <i>Orcuttia tenuis</i> Covered	T/E/1B.1	Sierra Nevada and Cascade Range foothills from Siskiyou to Sacramento Counties	Vernal pools; 35–1,760 meters	May–Sep (uncommonly Oct)	Two occurrences reported in the southwestern portion of the Plan Area.
Lewis Rose's ragwort <i>Packera eurycephala</i> Not covered	-/-/1B.2	Northern High Sierra Nevada, including the Feather River Drainage, eastern Butte and Plumas Counties	Serpentine soils in chaparral, cismontane woodland, and lower montane coniferous forest; 274–1,890 meters	Mar–Jul (uncommonly Sep)	Not reported from Plan Area but occurs near eastern boundary and potential habitat in oak woodland natural community type. Microhabitat (i.e., serpentine) may not be present.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Layne's ragwort <i>Packera layneae</i> Not covered	T/R/1B.2	Northern Sierra Nevada Foothills, Butte, El Dorado, Placer, Tuolumne, and Yuba Counties	Rocky serpentinite or gabbro soils in chaparral and foothill woodland; 200–1,000 meters	Apr–Aug	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type but microhabitat (i.e., soil types) may not be present.
Ahart's paronychia <i>Paronychia ahartii</i> Covered	-/-/1B.1	Northern Central Valle in Butte, Shasta, and Tehama Counties	Cismontane woodland, valley and foothill grassland, vernal pools; 30– 510 meters	Mar–Jun	Four occurrences reported in the southern and western portions of the Plan Area.
Closed-throated beardtongue <i>Penstemon personatus</i> Not covered	-/-/1B.2	Northern Sierra Nevada in Butte, Nevada, Plumas, and Sierra Counties	Chaparral, lower and upper montane coniferous forest on metavolcanic; 1,065–2,120 meters	Jun–Sep	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area and species' habitats not covered by BRCP.
Sierra blue grass <i>Poa sierra</i> Not covered	-/-/1B.3	Butte, El Dorado, Nevada, Plumas, and Shasta Counties	Lower montane conifer forests; 365–1,500 meters	Apr–Jun	Not reported in the Plan Area. Species' habitats not covered by BRCP.
California beaked-rush <i>Rhynchospora californica</i> Covered	-/-/1B.1	Scattered occurrences in northwestern California, northern and central Sierra Nevada Foothills, and northern San Francisco Bay	Bogs and fens, meadows and seeps, lower montane coniferous forest, freshwater marshes and swamps; 45–1,010 meters	May–Jul	Four occurrences reported in the northwestern portion of the Plan Area.
Brownish beaked-rush <i>Rhynchospora capitellata</i> Not covered	-/-/2.2	Scattered occurrences in Northwestern California and northern Sierra Nevada Foothills	Wet areas in lower and upper montane coniferous forest, meadows and seeps, freshwater marshes and swamps; 455–2,000 meters	Jul–Aug	Not reported in the Plan Area. Potential habitat present in wetland natural community type.
Hall's rupertia <i>Rupertia hallii</i> Not covered	-/-/1B.2	Sierra Nevada Foothills in Butte and Tehama Counties	Cismontane woodland, lower montane coniferous forest, sometimes on disturbed soils often on roadsides and sometimes in openings and logged forests; 545– 2,250 meters	Jun–Aug (uncommonly Sep)	Not reported in the Plan Area. Potential habitat present in oak woodland natural community type.
Sanford's arrowhead <i>Sagittaria sanfordii</i> Not covered	-/-/1B.2	Scattered locations in Central Valley and Coast Ranges from Del North to Fresno Counties	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet	May–Oct	Four occurrences scattered in the Plan Area.

Table 6-2. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Water bulrush <i>Schoenoplectus</i> <i>subterminalis</i> Not covered	-/-/1B.1	Klamath Ranges, northern high Sierra Nevada	Bogs and fens, montane lake margins of marshes and swamps; 750–2,250 meters	Jun–Aug	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Feather River stonecrop <i>Sedum albomarginatum</i> Not covered	-/-/1B.2	Endemic to the northern Sierra Nevada Foothills of Plumas and Butte Counties	On serpentinite in chaparral, lower montane coniferous forest; 260– 1,950 meters	May–Jun	Not reported in the Plan Area. Species' habitats not covered by BRCP.
Butte County checkerbloom <i>Sidalcea robusta</i> Covered	-/-/1B.2	Endemic to Butte County	Chaparral, cismontane woodland; 90–1,600 meters	Apr–Jun	Twenty occurrences reported in northeastern portion of Plan Area.
Long-stiped campion <i>Silene occidentalis</i> ssp. <i>longistipitata</i> Not covered	-/-/1B.2	Southern high Cascade Range in Tehama, Butte, Plumas and Shasta Counties	Chaparral, upper and lower montane coniferous forest; 1,000– 2,000 meters	Jun–Aug	Not reported in the Plan Area. Species' habitats not covered by BRCP.
Long-leaved starwort <i>Stellaria longifolia</i> Not covered	-/-/2.2	Butte, Calaveras, Plumas, and Shasta Counties; Arizona, New Mexico, Oregon, Washington and elsewhere	Riparian woodland and wet areas in meadows and seeps; 900–1,830 meters	May–Aug	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Slender-leaved pondweed <i>Stuckenia filiformis</i> (formerly <i>Potamogeton</i> <i>filiformis</i>) Not covered	-/-/2.2	Scattered locations in California: Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Placer, Santa Clara*, and Sierra Counties; Arizona, Nevada, Oregon, Washington	Freshwater marsh, shallow emergent wetlands and freshwater lakes, drainage channels; 300–2,150 meters	May–Jul	One occurrence reported in the central portion of the Plan Area.
Butte County golden clover <i>Trifolium jokerstii</i> Covered	-/-/1B.2	Known only from Butte County	Moist areas in valley and foothill grassland, swales, vernal pool margins; 50–385 meters	Mar–May	Nine occurrences reported in central portion of Plan Area.
Greene's tuctoria <i>Tuctoria greenei</i> Covered	E/R/1B.1	Scattered distribution along eastern Central Valley and foothills from Shasta to Tulare Counties	Dry vernal pools; 30–1,070 meters	May–Jul (uncommonly Sep)	Five occurrences reported in central portion of Plan Area east of State Route 99.

Common Name <i>Scientific Name</i>	Legal Status ^a Federal/State/ Rare Plant Rank	Geographic Distribution/Subregion of California Floristic Province ^b	Habitat Requirements	Reported Blooming Period	Potential for Occurrence within Plan Area?
Flat-leaved ladderwort <i>Utricularia intermedia</i> Not covered	-/-/2.2	Scattered occurrences in Cascade Range, high Sierra Nevada, and Modoc Plateau: Butte, Fresno, Modoc, Plumas, and Tulare Counties; also Idaho, Nevada, Utah, Washington, and elsewhere	Bogs, meadows, seeps, marshes, lake margins; 1,200–2,700 meters	Jul–Aug	Not reported in the Plan Area. Species' elevation range substantially higher than elevation of Plan Area.
Brazilian watermeal <i>Wolffia brasiliensis</i> Not covered	-/-/2.3	Few occurrences along Sacramento River in Butte and Glenn Counties; elsewhere	Assorted shallow freshwater marshes and swamps; 30–100 meters	Apr–Dec	Three occurrences reported in the western half of the Plan Area.

^a Status explanations:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- T = listed as threatened under the federal Endangered Species Act.
- = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- R = listed as rare under the California Native Plant Protection Act (this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation).
- = no listing.

California Rare Plant Rank¹

- 1A = List 1A species: presumed extinct in California and elsewhere.
- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- 2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
- 0.1 = seriously endangered in California.
- 0.2 = fairly endangered in California.
- 0.3 = not very endangered in California.
- * = presumed extirpated from that County.
- ? = occurrence within County needs to be confirmed.

^b Subregions of CA Floristic Province as defined in Hickman 1993.

¹ In March, 2010, DFG changed the name of “CNPS List” or “CNPS Ranks” to “California Rare Plant Rank” (or CRPR). This was done to reduce confusion over the fact that CNPS and DFG jointly manage the Rare Plant Status Review groups (300+ botanical experts from government, academia, NGOs and the private sector) and that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

Potential habitat for the remaining 15 species is present in the natural community types in the Plan Area that are proposed for coverage under the BRCP.

Accordingly, the special-status plants addressed in this chapter comprise the 14 that are proposed for coverage under the BRCP and the 15 that are not covered but that have potential to occur in the Plan Area. Occurrences of special-status plants are shown in Appendix F. The 14 special-status plants covered under the BRCP are listed below.

- Ferris's milkvetch (not listed)
- Lesser saltscale (not listed)
- Hoover's spurge (federal threatened)
- Ahart's dwarf rush (not listed)
- Red Bluff dwarf rush (not listed)
- Butte County meadowfoam (federal and state endangered)
- Veiny monardella (not listed)
- Hairy Orcutt grass (federal and state endangered)
- Slender Orcutt grass (federal threatened, state endangered)
- Ahart's paronychia (not listed)
- California beaked-rush (not listed)
- Butte County checkerbloom (not listed)
- Butte County golden clover (not listed)
- Greene's tuctoria (federal endangered, state rare)

Special-Status Wildlife

Based on the USFWS (2013) species list for Butte County and CNDDDB records search (2013a) for the Plan Area, 28 special-status wildlife species were identified as having potential to occur within the Plan Area. Table 6-3 contains the status, distribution, and habitat requirements of these species. Of these species, 25 are known to occur in the Plan Area, one (California tiger salamander) is not known to occur within the Plan Area but have at least a moderate potential to occur based on the presence of suitable habitat, and two (golden eagle and California red-legged frog) have low to no potential to occur in the Plan Area based on the presence of limited suitable habitat and no occurrences within the Plan Area. These species are not discussed further in this EIS/EIR.

The special-status wildlife species addressed in this section are those that are covered under the BRCP and other special-status species that are known or have at least a moderate potential to occur in the Plan Area. Occurrences of special-status wildlife species are shown in Appendix F. The 20 special-status wildlife species covered under the BRCP are listed below.

- Tricolored blackbird (state endangered)
- Yellow-breasted chat (state species of special concern)
- Bank swallow (state threatened)
- Western burrowing owl (state species of special concern)

- Western yellow-billed cuckoo (federal threatened, state endangered)
- Greater sandhill crane (state threatened and fully protected)
- California black rail (state threatened and fully protected)
- American peregrine falcon (state fully protected)
- Swainson's hawk (state threatened)
- White-tailed kite (state fully protected)
- Bald eagle (state endangered and fully protected)
- Giant garter snake (federal threatened, state threatened)
- Blainville's horned lizard (state species of special concern)
- Western pond turtle (state species of special concern)
- Foothill yellow-legged frog (state species of special concern)
- Western spadefoot (state species of special concern)
- Valley elderberry longhorn beetle (federal threatened)
- Vernal pool tadpole shrimp (federal endangered)
- Conservancy fairy shrimp (federal endangered)
- Vernal pool fairy shrimp (federal threatened)

Twenty-four other special-status species are not covered under the Plan but are known or have at least a moderate potential to occur in the Plan Area; these species are also addressed in this document (Table 6-3).

Special-Status Fish

Based on the USFWS (2013) species list and other literature searches for the Plan Area, eight special-status fish species were identified as having potential to occur within the Plan Area. Table 6-3 provides the status, distribution, and habitat requirements of these species. Four of these species are known to occur in the Plan Area. In addition, hardhead (*Mylopharodon conocephalus*) has a high potential to occur in the Plan Area based on the presence of suitable habitat, and was accordingly included in Table 6-3. Sacramento River winter-run Chinook salmon has not been documented in the Plan Area except in the Sacramento River and is not discussed further in this EIS/EIR.

This chapter addresses the four fish species covered by the BRCP.

- California Central Valley steelhead
- Central Valley spring-run Chinook salmon
- Central Valley fall-/late fall-run Chinook salmon
- Green sturgeon

Sacramento splittail, river lamprey, and hardhead are not covered under the BRCP but have the potential to occur in the Plan Area and are also considered in this document.

Table 6-3. Special-Status Wildlife Species Identified as Having Potential to Occur within the Plan Area

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Invertebrates				
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i> Not covered	-/-/-	Extirpated from type locality at Antioch Dunes but has been found along the Sacramento and Feather Rivers	Loose sand on sand bars and sand dunes	High—Species has been documented to occur at two locations in the Plan Area along the Sacramento River (CNDDDB 2013).
Sacramento anthicid beetle <i>Anthicus sacramento</i> Not covered	-/-/-	On Sacramento and lower San Joaquin rivers and tributaries from Butte County to San Joaquin County	Sand/slip faces in willows; associated with riparian and other aquatic habitat.	High—Species has been documented to occur one location in the Plan Area along the Sacramento River (CNDDDB 2013).
Conservancy fairy shrimp <i>Branchinecta conservatio</i> Covered	E/-/-	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	High—Suitable habitat present; three occurrences within Planning Area, two in vernal pools located along either side of Highway 99, 0.7 mi north of the intersection with Cana Highway, and one 3 miles southeast of this area (CNDDDB 2013).
Vernal pool fairy shrimp <i>Branchinecta lynchi</i> Covered	T/-/-	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	High—Suitable habitat present; 29 scattered occurrences within Butte County, 1 of which is within designated critical habitat (CNDDDB 2013).
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i> Covered	T/-/-	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant	High—Suitable habitat present; 17 occurrences within Planning Area mostly along the Sacramento River, Feather River, Big Chico Creek, and Butte Creek (CNDDDB 2013).
Vernal pool tadpole shrimp <i>Lepidurus packardii</i> Covered	E/-/-	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	High—Suitable habitat present; 18 occurrences for this species in Butte County, most of which are associated with designated critical habitat and others are associated with pools along Highway 99 (CNDDDB 2013).
California linderiella <i>Linderiella occidentalis</i> Not covered	-/-/-	Central Valley of California and central coastal California	Vernal pools, swales, and other ephemeral wetlands.	High—Species has been documented in the Plan area at 5 different locations (CNDDDB 2013).

Table 6-3. Continued

Common Name Scientific Name Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Amphibians				
California tiger salamander <i>Ambystoma californiense</i> Not covered	T/C/-	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	Low—Suitable habitat present; no extant occurrences are known within the Planning Area, an historical occurrence was known at Gray Lodge waterfowl management area but the species current range does not extend into Butte County (CNDDDB 2013). This species will not be addressed any further in the EIR/EIS.
California red-legged frog <i>Rana draytonii</i> Not covered	T/SSC/-	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	Low-Moderate—Suitable habitat present; no occurrences within the Planning Area; two occurrences within Butte County but outside of Planning Area boundary near Paradise within designated critical habitat area (CNDDDB 2013).
Foothill yellow-legged frog <i>Rana boylei</i> Covered	-/SSC/-	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet	Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	High—Suitable habitat present; based on anecdotal information populations have been observed in Big Chico Creek, in Mud Creek, and Rock Creek. In addition, CDFG snorkel surveys have identified juvenile, larval, and breeding adults in Big Chico Creek, Butte Creek, and Feather River (see Appendix A in BRCP).
Sierra Nevada yellow-legged frog <i>Rana sierra</i> Not covered	C/CT/-	Occurs in the Sierra Nevada from Plumas County to Fresno County from 4,500 feet to 12,000 feet in elevation.	Occurs in meadow streams, small creeks, lakes, and ponds, usually within a few feet of water.	Low—The Plan Area is outside of the current known range of the species and habitat conditions in the Plan Area are atypical. There are no records of this species in the Plan Area (CNDDDB 2013). Species is not discussed any further in this EIR/EIS.
Western spadefoot <i>Spea hammondi</i> Covered	-/SSC/-	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands.	High—Suitable habitat present; 5 occurrences of this species within Plan Area in scattered vernal pools.

Table 6-3. Continued

Common Name Scientific Name Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Reptiles				
Giant garter snake <i>Thamnophis couchi gigas</i> Covered	T/T/-	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	High—Suitable habitat present; 27 occurrences within Planning Area associated with canals, marshes, and rice throughout the low land valley area (CNDDDB 2013).
Blainville's (coast) horned lizard <i>Phrynosoma blainvilli</i> Covered	-/SSC	Sacramento Valley, including foothills, south to southern California; Coast Ranges south of Sonoma County; below 4,000 feet in northern California	Grasslands, brushlands, woodlands, and open coniferous forest with sandy or loose soil; requires abundant ant colonies for foraging	High—Suitable habitat present; one occurrence within Planning Area in the foothills in the eastern portion of the Planning Area (CNDDDB 2013).
Western pond turtle <i>Emys marmorata</i> Covered	-/SSC/-	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	High—Suitable habitat present; 10 occurrences within Plan Area in scattered ponds, streams, and canals (CNDDDB 2013).
Birds				
Great egret <i>Ardea alba</i> Not covered	-/-/-	Year-round range spans the Central Valley, central coast, and portions of southern California; winter range expands to include the remainder of the coast	Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures.	High—Suitable habitat present. Two occurrences in the Plan Area (CNDDDB 2013).
Great blue heron <i>Ardea Herodias</i> Not covered	-/-/-	Year-round range spans most of California except the eastern portion of the State and the highest elevations; winter range expands to include eastern California	Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures	High—Suitable habitat present. Three occurrences in the Plan Area (CNDDDB 2013).
Short-eared owl <i>Asio flammeus</i> Not covered	-/SSC/-	Breeding range is patchily distributed throughout the State, including portions of the Sacramento and San Joaquin valleys, northeastern California, and a few scattered coastal sites	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes.	High—Suitable habitat present in the Plan Area.
Long-eared owl <i>Asio otus</i> Not covered	-/SSC/-	Uncommon yearlong resident throughout California except the Central Valley, some coastal areas, and Coachella and Imperial Valleys of Southern California.	Uses riparian deciduous forest, conifer forests, mixed forests.	High—Suitable habitat present in the Plan Area.

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Yellow warbler <i>Dendroica petechia</i> <i>Brewsteri</i> Not covered	BCC/SSC/-	Range includes coastal and northern California and the Sierra Nevada below approximately 7,000 feet; mostly extirpated from the southern Sacramento and San Joaquin valleys	Nests and forages in early successional riparian habitats	High—Suitable habitat present. One occurrence in the Plan Area (CNDDDB 2013).
Willow flycatcher <i>Empidonax traillii</i> Not covered	BCC/E/-	Summer breeding resident in the Sierra Nevada and Cascade Range from 2,000 to 8,000 feet in elevation. Migrates through low elevation riparian habitat during spring and fall.	Nests in dense willow stands near water. Uses riparian habitats at lower elevation during migration.	Moderate—Suitable migratory habitat in the Plan Area.
Greater sandhill crane <i>Grus canadensis tabida</i> Covered	-/T(FP)/-	Breeds in Siskiyou, Modoc, Lassen, Plumas, and Sierra Counties. Winters in the Central Valley, southern Imperial County, Lake Havasu National Wildlife Refuge, and the Colorado River Indian Reserve	Summers in open terrain near shallow lakes or freshwater marshes. Winters in plains and valleys near bodies of fresh water	High—Suitable wintering habitat only; known winter use area within planning area generally located from Chico to the Butte Sink between the Sacramento River and State Route 99 (CNDDDB 2013).
Merlin <i>Falco columbarius</i> Not covered	-/WL/-	Winter range encompasses most of California except the highest elevations; does not breed in California	Forages in a wide variety of habitats, but in the Central Valley is most common around agricultural fields and grasslands.	Moderate—Suitable wintering habitat present in the Plan Area. One record within the Plan Area (CNDDDB 2013).
Prairie falcon <i>Falco mexicanus</i> Not covered	BCC/WL/-	Year-round range includes eastern California, the Coast Ranges, and much of southern California; winter range expands to include the Delta, Central Valley, and coastal California	Forages most commonly in grasslands and low shrublands; also forages in agricultural fields. Nests in scrape on a sheltered ledge of a cliff or on a bluff or rock outcrop.	High—Suitable habitat in the Plan Area.
American peregrine falcon <i>Falco peregrinus anatum</i> Covered	BCC/FP/	Permanent resident along the north and south Coast Ranges. May summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations	Moderate—Limited suitable nesting habitat; known to nest along the eastern boundary of Planning Area (CNDDDB 2013).

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Bald eagle <i>Haliaeetus leucocephalus</i> Covered	BCC/E(FP)/	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean	High—Suitable nesting and foraging habitat; nests documented along the Feather River and in northeastern portion of Planning Area (CNDDDB 2013).
Golden eagle <i>Aquila chrysaetos</i> Not covered	BCC/FP/	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	Low-Moderate—Limited suitable nesting habitat but suitable foraging habitat present; no occurrences within Planning Area (CNDDDB 2013).
White-tailed kite <i>Elanus leucurus</i> Covered	-/FP/-	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Moderate—Suitable nesting and foraging habitat; no documented occurrences within Planning Area though nesting is expected to occur within the Planning Area.
Northern harrier <i>Circus cyaneus</i> Not covered	-/SSC/-	Occurs throughout lowland California. Has been recorded in fall at high elevations	Nests and forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands	High—Suitable nesting and foraging habitat; two occurrences within Planning Area (CNDDDB 2013).
Swainson's hawk <i>Buteo swainsoni</i> Covered	BCC/T/-	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High—Suitable nesting and foraging habitat; 26 records along the western boundary of the Planning Area along the Sacramento River, Feather River, Butte Creek, and other scattered locations within the lowland valley portion of the Planning Area (CNDDDB 2013).
Western burrowing owl <i>Athene cunicularia hypogea</i> Covered	-/SSC/-	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High—Suitable nesting and foraging habitat; seven occurrences within the low land valley portion of Planning Area (CNDDDB 2013).

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Bank swallow <i>Riparia riparia</i> Covered	-/T/-	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	High—Suitable nesting and foraging habitat; Numerous documented nesting colonies along the Feather River and Sacramento River within the Planning Area (CNDDDB 2013).
Tricolored blackbird <i>Agelaius tricolor</i> Covered	BCC/SSC/-	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	High—Suitable nesting and foraging habitat; 6 nesting colonies scattered within the low land valley portion of the Planning Area (CNDDDB 2013).
Yellow-breasted chat <i>Icteria virens</i> Covered	-/SSC/-	Nests locally in coastal mountains and Sierra Nevada foothills, east of the Cascades in northern California, along the Colorado river, in the Delta, portions of the Central Valley, and very locally inland in southern California	Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry vines, and grapevines	High—Suitable nesting and foraging habitat; Detections have been made along Big Chico Creek, east of Chico other foothill canyons within the Planning Area, Lower Butte Creek Canyon and Little Chico Creek, and at the Butte Creek Ecological Preserve (see Appendix A BRCP)
Western yellow-billed cuckoo <i>Coccyzus americanus</i> Covered	C/E/-	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	High—Suitable nesting and foraging habitat; 15 occurrences along the Sacramento River and nearby riparian areas within the Planning Area (CNDDDB 2013).
California black rail <i>Laterallus jamaicensis coturniculus</i> Covered	BCC/T(FP)/-	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties.	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations.	High—Suitable nesting and foraging habitat; there are 10 occurrences within Planning Area most of these are along Butte Creek, Big Chico Creek and a marsh area located at the intersection of Highways 49 and 170 (CNDDDB 2013).

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Loggerhead shrike <i>Lanius ludovicianus</i> Not covered	BCC/SSC/-	Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	High—Suitable nesting and foraging habitat; one nesting occurrence within Planning Area (CNDDDB 2013).
Osprey <i>Pandion haliaetus</i> Not covered	-/WL/-	Breeding range includes most of northern California, the central Coast Ranges, and the southern Sierra Nevada; winter range also includes the central coast and additional portions of southern California	Forages exclusively in fish-bearing waters; nests in nearby trees or tall, constructed platforms	High—Suitable nesting and foraging habitat present. Seven documented nesting occurrences in the Plan Area (CNDDDB 2013).
Double-crested cormorant <i>Phalacrocorax auritus</i> Not covered	-/WL/-	Breeding range spans the coast and offshore islands, Clear Lake, the Salton Sea, the Colorado River, and portions of northeastern California; winter range expands to include the Central Valley and additional portions of southern California	Forages in open water; breeds colonially in rock ledges and trees.	Moderate—Suitable habitat present in Plan Area. No nesting records in the Plan Area (CNDDDB 2013).
Mammals				
Pallid bat <i>Antrozous pallidus</i> Not covered	-/SSC/WBVG High priority	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	High—Suitable roosting and foraging habitat; one occurrence within Planning Area (CNDDDB 2013).
Western mastiff bat <i>Eumops perotis californicus</i> Not covered	-/SSC/WBVG High Priority	Year-round range spans most of California, with records absent from the northwest and northeast portions of the State	Typically roosts in crevices in cliffs and rocky outcrops, in colonies of fewer than 100 individuals. May also roost in bridges, caves and buildings that allow sufficient height and clearance for dropping into flight. There is at least one record of this species roosting in an untrimmed palm tree. Forages in a variety of grassland, shrub, and wooded habitats, including riparian and urban areas, although most commonly in open, arid lands	High—Suitable roosting and foraging habitat present. Seven occurrences within the Plan Area (2013).
Silver-haired bat <i>Lasionycteris noctivagans</i> Not covered	-/-/WBVG Medium Priority	Breeds in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats; may occur in any habitat during migration.	Typically roosts in tree cavities, crevices and under loose bark. May also use leaf litter, buildings, mines and caves.	High—Suitable roosting and foraging habitat present. Six occurrences within the Plan Area (2013).

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Western red bat <i>Lasiurus blossevillei</i> Not covered	-/SSC/WBVG High priority	Scattered throughout much of California at lower elevations	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	High—Suitable roosting and foraging habitat; two occurrences within Planning Area (CNDDDB 2013).
Hoary bat <i>Lasiurus cinereus</i> Not covered	-/-/WBVG Medium Priority	Ranges widely, but populations in the Central Valley are most likely non-reproductive or migratory	Typically roosts alone in a variety of broadleaf tree species such as cottonwood and sycamore; also found roosting in conifers. May be found in a range of vegetation and roost substrates during migration	High—Suitable roosting and foraging habitat present. Four occurrences within the Plan Area (2013).
Pacific fisher <i>Martes pennant</i> Not covered	C/SSC/-	Occurs in the Sierra Nevada, Cascades, and Klamath Mountains typically at higher elevations.	Occurs in intermediate to large tree stages of coniferous forests and deciduous riparian habitats. Requires large trees with cavities or snags for cover and denning.	Low—Plan Area is outside of the known range of this species and the Plan Area lacks typical habitat for the species. There are records of this species in the Plan Area (CNDDDB 2013). Species is not discussed further in this EIR/EIS.
Yuma myotis <i>Myotis yumanensis</i> Not covered	-/-/WBVG Low-Medium Priority	Widely distributed in California	Strongly associated with water sources. Roosts in a variety of structures including bridges, buildings, caves, mines, trees and rock crevices. Has been known to roost in cliff swallow nests. Typically forages low over water	High—Suitable roosting and foraging habitat present. Three occurrences within the Plan Area (2013).
American badger <i>Taxidea taxus</i> Not covered	-/SSC/-	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground	High—Limited suitable habitat; one occurrence within Planning Area (CNDDDB 2013).
Sierra Nevada red fox <i>Vulpes vulpes necator</i> Not covered	-/T/-	Occurs in Sierra Nevada and Cascades between 4,000 to 12,000 feet elevation with most records above 7,000 feet.	Uses a variety of sites for foraging but typically found in coniferous forest with interspersed meadows. Uses dense vegetation and rocky areas for cover and denning.	Low—There is an historic record from 1906 near the Sacramento River within the Plan Area but this record is not likely the Sierra Nevada subspecies (CNDDDB 2013). Species is not discussed further in this EIR/EIS

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
Fish				
Central Valley steelhead <i>Oncorhynchus mykiss</i> Covered	T/-	Sacramento and San Joaquin rivers and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools.	High—Steelhead have been documented in the Feather River (DWR 1999), Big Chico Creek (CDFG 1993), and Butte Creek (USFWS 2000).
Central Valley spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i> Covered	T/T	Upper Sacramento River and Feather River	Has the same general habitat requirements as winter-run Chinook salmon. Coldwater pools are needed for holding adults (Moyle 2002).	High—Spring-run Chinook salmon have been documented in the Feather River (NMFS 2008), Big Chico Creek (Reynolds et al. 2007), and Butte Creek (Friends of Butte Creek 2010).
Sacramento River winter-run Chinook salmon <i>Oncorhynchus tshawytscha</i> Not covered	E/E	Mainstem Sacramento River below Keswick Dam (Moyle 2002)	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C. Habitat types are riffles, runs, and pools. (Moyle 2002.)	Low—Winter-run Chinook salmon occur in the Sacramento River along the western boundary of Butte County but have not been recorded elsewhere in the Planning Area.
Central Valley fall/late fall-run Chinook salmon <i>Oncorhynchus tshawytscha</i> Not covered	SC/SSC	Sacramento and San Joaquin Rivers and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C. Habitat types are riffles, runs, and pools (Moyle 2002.)	High—Fall-run Chinook salmon have been documented in the Feather River, Big Chico Creek, and Butte Creek (Schick et al. 2005).
Green sturgeon (southern DPS) <i>Acipenser medirostris</i> Covered	T/SSC	Sacramento, Klamath and Trinity Rivers (Moyle 2002)	Spawn in large river systems with well-oxygenated water, with temperatures from 8.0 to 14°C	Low—Green sturgeon occur in the Sacramento River along the western boundary of Butte County, and several have been recorded in the Feather River up to Thermalito Afterbay (SWRI 2003; Beamesderfer et al. 2004).
Delta smelt <i>Hypomesus transpacificus</i> Not covered	T/E	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand. (Moyle 2002.)	None—Outside of known range and no habitat available in the project area.

Table 6-3. Continued

Common Name <i>Scientific Name</i> Status under BRCP	Status ^a Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Plan Area
River lamprey <i>Lampetra ayresi</i> Covered	-/SSC	Sacramento, San Joaquin, and Napa Rivers; tributaries of San Francisco Bay (Moyle 2002; Moyle et al. 1995)	Adults live in the ocean and migrate into fresh water to spawn	High—River lamprey occur in the Sacramento River along the western boundary of Butte County, and have been reported to occur in the Feather River (SWRI 2003).
Sacramento splittail <i>Pogonichthys macrolepidotus</i> Covered	-/SSC	Occurs throughout the year in low-salinity waters and freshwater areas of the Sacramento–San Joaquin Delta, Yolo Bypass, Suisun Marsh, Napa River, and Petaluma River (Moyle 2002).	Spawning takes place among submerged and flooded vegetation in sloughs and the lower reaches of rivers.	Low—A few reported occurrences in the Feather River to Thermalito Outlet (Moyle et al. 2004).
Hardhead <i>Mylopharodon conocephalus</i> Not covered	-/SSC	Tributary streams in the San Joaquin drainage; large tributary streams in the Sacramento River and the main stem	Reside in low to mid-elevation streams and prefer clear, deep pools and runs with slow velocities. Also occur in reservoirs.	High—Hardhead have been documented in the Feather River (University of California 2013).

^a Status explanations:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- T = listed as threatened under the federal Endangered Species Act.
- C = candidate species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
- BCC = bird of conservation concern – USFWS identified species as having a high conservation priority.
- = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.
- FP = fully protected under the California Fish and Game Code.
- CT = candidate threatened.
- SSC = species of special concern in California.
- = no listing.

Other

- Western Bat Working Group (WBWG) Available: <http://www.wbwg.org/spp_matrix.html>.
- High priority = species are imperiled or at high risk of imperilment.
- Medium priority = species warrants closer evaluation, more research, and conservation actions of both species and possible threats.
- Low priority = most of the existing data support stable populations of the species.

Table 6-4 presents a matrix of all the special-status species addressed in this document whether covered or noncovered, correlating each species with the habitat type that supports it.

Designated Critical Habitat

In accordance with ESA Section 7, USFWS and NMFS must evaluate the effects of proposed actions on designated critical habitat. The following federally listed covered species have designated critical habitat within the Plan Area.

- Central Valley spring-run Chinook salmon
- California Central Valley steelhead
- Vernal pool tadpole shrimp
- Conservancy fairy shrimp
- Vernal pool fairy shrimp
- Hoover's spurge
- Hairy Orcutt grass
- Butte County meadowfoam
- Greene's tuctoria

The designated critical habitat for these species is shown in Appendix F. The effects on critical habitat are addressed in this chapter.

6.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for biological resources in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).² The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

6.2.1 Methods for Impact Analysis

This section describes the methods used to analyze the environmental consequences of implementing the conservation strategy and conservation measures.

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the federal agencies to permit the actions of BCAG, the Local Agencies, water and irrigation districts, and

² These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

Caltrans to approve and implement the BRCP. Accordingly, the methods for analyzing direct impacts on biological resources are tailored to evaluate the decisions of the federal agencies, BCAG, and the Local Agencies, water and irrigation districts, and Caltrans related to the BRCP. Additionally, Local Agency general plan updates were prepared concurrently with the BRCP planning process. A BRCP biological constraints map was used to inform the general plan updates and to develop alternatives that avoided and minimized impacts of general plan actions on sensitive habitats supporting covered species. These preferred alternatives were incorporated into the BRCP covered activities. Therefore, it is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified in the general plan EIRs, such that impacts would be adequately mitigated.

Implementation of Alternative 2 (the BRCP) or other alternatives could result in direct, indirect, or cumulative impacts on biological resources. *Direct impacts* are those effects of a project that occur at the same time and place as project implementation, such as removal of habitat from ground disturbance. *Indirect impacts* are those effects of a project that occur either later in time or at a distance from the project location but are reasonably foreseeable, such as loss of aquatic species from downstream effects on water quality. Direct and indirect impacts can be permanent or temporary. *Cumulative impacts* are those incremental effects of a project that, in combination with the effects of other projects, could significantly impact biological resources.

Biological resources could be affected directly or indirectly by activities associated with the conservation strategy and measures described under Alternative 2 or other alternatives (Alternatives 3 and 4). The following types of conservation strategy and measures activities may result in disturbance to biological resources.

- Increased human presence as part of surveys, monitoring, or recreational use.
- Conversion of one habitat type to another through restoration, enhancement, or creation activities.
- Removal of vegetation during construction of temporary staging areas and access roads.
- Removal of vegetation as part of management by grazing activities or herbicide application.
- Active or passive relocations of individuals of covered species.

The evaluation of permanent development and conservation strategy impacts on covered species is quantitative. The evaluation of other covered activities (e.g., water and irrigation district recurring maintenance activities or Caltrans facilities) under all the alternatives is qualitative. The evaluation of other covered activities (e.g., water and irrigation district recurring maintenance activities or Caltrans facilities) on covered species under all the alternatives is qualitative. A review was conducted of the natural community and land cover mapping and the habitat suitability models for covered species developed for the BRCP. The NEPA/CEQA Lead Agencies determined these data and information accurately represent the baseline conditions for biological resources within the Plan Area. Accordingly, the alternatives were compared to these maps and habitat suitability models for the analysis. The analysis assumes the proposed conservation strategy and conservation measures would be fully effective in their stated objectives and that habitat conditions predicted to result from Plan implementation would actually develop within the term of the permits. This assumption is substantially supported by successful implementation of similar conservation measures in other HCPs and NCCPs in California. It is also supported by the effective monitoring and adaptive

Table 6-4. Species Matrix

Common Name/Scientific Name	Natural Communities																				Agricultural			
	CH	CF	BOS	BOW	ILOW	MOW	G	G-VS	CWRF	VORF	WS	HRRP	DTR-S	DTR	EW	MSW	MW	OW	MC	R/S/C	P	Rice	IC/IP	
Fish Species																								
Central Valley steelhead <i>Oncorhynchus mykiss</i>												X	X					X		X				
Chinook salmon (Spring-run and Fall-run) <i>Oncorhynchus tshawytscha</i>												X	X					X		X				
Green sturgeon <i>Acipsenser medirostris</i>												X	X					X		X				
Hardhead <i>Mylopharodon conocephalus</i>												X	X					X		X				
River lamprey <i>Lampetra ayresi</i>												X	X					X		X				
Sacramento splittail <i>Pogonichthys macrolepidotus</i>												X	X					X		X				
Invertebrate Species																								
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>												X												
California linderiella <i>Linderiella occidentalis</i>							X	X																
Conservancy fairy shrimp <i>Branchinecta conservatio</i>							X	X																
Sacramento anthicid beetle <i>Anthicus sacramento</i>												X												
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>							X		X	X			X	X										
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>							X	X																
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>							X	X																
Amphibian Species																								
Foothill yellow-legged frog <i>Rana boylei</i>																				X				
Western spadefoot toad <i>Spea hammondi</i>							X	X												X	X			

Table 6-4. Continued

Common Name/Scientific Name	Natural Communities																				Agricultural			
	CH	CF	BOS	BOW	ILOW	MOW	G	G-VS	CWRF	VORF	WS	HRRP	DTR-S	DTR	EW	MSW	MW	OW	MC	R/S/C	P	Rice	IC/IP	
California beaked-rush <i>Rhynchosperma californica</i>															X									
California satintail <i>Imperata brevifolia</i>															X									
Ferris' milkvetch <i>Astragalus tener</i> var. <i>ferrisiae</i>								X																
Greene's tuctoria <i>Tuctoria greenei</i>								X																
Hairy Orcutt grass <i>Orcuttia pilosa</i>								X																
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>								X																
Hoover's spurge <i>Chamaesyce hooveri</i>								X																
Lesser saltscale <i>Atriplex minuscula</i>								X																
Pappose tarplant <i>Centromadia parryi</i> subsp. <i>parryi</i>								X																
Pink creamsacs <i>Castilleja rubicundula</i> subsp. <i>rubicundula</i>								X																
Recurved larkspur <i>Delphinium recurvatum</i>								X																
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>								X																
Rose mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>															X									
Round-leaved filaree <i>California macrophylla</i>								X																
Sagittaria sanfordii <i>Sanford's arrowhead</i>															X									
Slender Orcutt grass <i>Orcuttia tenuis</i>								X																
Slender-leaved pondweed <i>Stuckenia filiformis</i>															X			X						

Table 6-4. Continued

Common Name/Scientific Name	Natural Communities																				Agricultural		
	CH	CF	BOS	BOW	ILOW	MOW	G	G-VS	CWRF	VORF	WS	HRRP	DTR-S	DTR	EW	MSW	MW	OW	MC	R/S/C	P	Rice	IC/IP
Veiny monardella <i>Monardella venosa</i>							X																
Watershield <i>Brasenia shreberi</i>															X			X					
White-stemmed clarkia <i>Clarkia gracilis</i> subsp. <i>albicaulis</i>			X	X	X	X	X																

- CH = Chaparral.
- CF = Coniferous forest.
- BOS = Blue oak savanna.
- BOW = Blue oak woodland.
- ILOW = Interior live oak woodland.
- MOW = Mixed oak woodland.
- G = Grassland.
- G-VS = Grassland with vernal swale complex.
- CWRF = Cottonwood willow riparian forest.
- VORF = Valley oak riparian forest.
- WS = Willow scrub.
- HRRP = Herbaceous riparian river bar.
- DTR-S = Dredger tailings with riparian – stream.
- DTR = Dredger tailings with riparian.
- EW = Emergent wetland.
- MSR = Managed seasonal wetland.
- NW = Managed wetland.
- OW = Open water.
- MC = Major canal.
- R/S/C = Rivers, streams, agricultural channels.
- P = Ponds.
- IC/IP = Irrigated cropland/Irrigated pasture.

management plan that has been incorporated into the BRCP. The extent of impacts on covered special-status species, by alternative, is shown in Table 6-5.

This EIR/EIS evaluates noncovered special-status species. These include: migratory birds, special-status bats, the American badger, migratory black-tailed deer, hardhead, Antioch Dunes anthicid beetle, Sacramento anthicide beetle, and special-status plants. The evaluation of impacts on noncovered species relied on a combination of the available natural community and land cover mapping as presented in the BRCP, as well as species occurrence information. The species occurrence information was compiled from CNDDDB data and additional records provided in GIS by BCAG. In addition, impacts on noncovered species from urban development were also assessed programmatically in Local Agencies' general plan EIRs and would be assessed in the future in project-specific environmental documents. The mitigation measures described in the previous CEQA documents for potential impacts on noncovered sensitive biological resources will be incorporated into all projects covered by the BRCP, as appropriate. However, additional mitigation measures may also be identified through project-level CEQA or NEPA review or as conditions of the project permits (e.g., a Section 404 permit or a Streambed Alteration Agreement). This EIS/EIR assumes that covered activities unrelated to the conservation strategy (i.e., development projects, water and irrigation district recurring maintenance, etc.) would comply with CEQA and address noncovered species issues on a project level at the appropriate time. Therefore, programmatic mitigation is not included in this EIS/EIR for noncovered species related to these types of covered activities. The extent of impacts on noncovered special-status species, by alternative, is shown in Table 6-5.

The assessment of impacts on potentially jurisdictional wetlands relied on assumptions the BRCP made on wetland densities within grassland and agricultural habitats (see Chapter 3 and Table 3-16 of the BRCP). The extent of impacts on potential jurisdictional wetlands in the Plan Area by alternative is shown in Table 6-6 of this EIS/EIR.

For Alternative 3, the Reduced Development/Reduced Fill Alternative, impacts on natural communities and covered species were quantified by ICF International using geographic information system (GIS) software with the covered species models and natural community/land cover data provided by BCAG. The footprint of the Local Agencies' reduced development alternatives were combined to create a single GIS layer that was then intersected with the natural communities and land use layers to quantify the impacts. The same impact limits that BRCP developed for natural community/land cover, covered species, and jurisdictional wetlands were applied to Alternative 3. These impact limits can be found in Tables 4-5, 4-8, and 4-11 of the BRCP. The extent of direct impacts on natural communities and agricultural lands under Alternative 3 is shown in Table 6-7 of this EIS/EIR.

6.2.2 Significance Criteria

USFWS has determined that it is appropriate to use Appendix G of the State CEQA Guidelines; factual or scientific information and data; views of the public in the affected area; the policy/regulatory environment of affected jurisdictions; and regulatory standards of federal, state, regional, and local agencies to inform the decision on the significance of the alternatives on the environment in those cases where NEPA regulations do not provide guidance on the thresholds of significance. Therefore, in accordance with Appendix G of the State CEQA Guidelines and professional judgment, the action alternatives would result in a significant effect if they would result in any of the conditions listed below.

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species.
- Have a substantial adverse effect on wetlands or other sensitive natural vegetation community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan in the surrounding region.
- Conflict with any local policies or ordinances\ protecting biological resources, such as a tree preservation policy or ordinance.

6.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. It is assumed that during the permitting process the applicants would be responsible for developing project-specific mitigation that would be subject to the approval of USFWS, NMFS, and CDFW. Under Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on biological resources associated with the conservation strategy and conservation measures would not occur. In addition, there would be no comprehensive monitoring program to ensure the success of management and restoration measures on a regional scale, nor would a regional general permit under the Clean Water Act be available to provide additional permit streamlining for applicants whose projects would have impacts on jurisdictional waters of the United States, including wetlands.

The primary mechanism of impacts on biological resources under Alternative 1 is habitat loss and degradation through implementation of the various general plans and related infrastructure construction. Moreover, because the BRCP would impose some acreage limitations on development in certain areas to minimize effects on covered species whose habitats have declined substantially in the Plan Area and the wider region, the long-term extent of effects under Alternative 1 would be greater than those under the proposed action (Alternative 2).

The general plan EIRs for the Local Agencies identified a range of impacts related to biological resources. The EIR for the Biggs general plan found that implementation of the general plan would not result in significant impacts on biological resources. The EIR for the Chico general plan found that implementation of the general plan would result in significant and unavoidable impacts on biological resources only at the cumulative level. The EIR for the Gridley general plan found that implementation of the general plan would result in significant impacts on biological resources, including impacts on special-status plants, raptors and migratory birds, Swainson's hawk, giant garter snake, valley elderberry longhorn beetle, and drainages and sensitive natural communities

Table 6-5. Species Impacts

Common Name <i>Scientific Name</i>	Habitats and Occurrences in Plan Area	Existing in the Plan Area ^a	Maximum Permanent Impacts Quantity ^a		
			Alternative 1	Alternative 2	Alternative 3
Fish Species					
Central Valley steelhead <i>Oncorhynchus mykiss</i>	Adult migration; juvenile rearing and migration habitat (linear miles)	85	0.4	0	0
	Adult spawning and migration; juvenile rearing and migration habitat (linear miles)	106	5	0	0
	Non-natal juvenile rearing habitat (linear miles)	7	0.04	0	0
	<i>Subtotal</i>	<i>197</i>	<i>5.4</i>	<i>0</i>	<i>0</i>
Chinook salmon (Spring-run and Fall-run) <i>Oncorhynchus tshawytscha</i>	Adult migration; juvenile rearing and migration habitat (linear miles)	98 and 55	0.5 and 0.1	0	0
	Adult spawning and migration; juvenile rearing and migration habitat (linear miles)	20 and 92	4.0 and 5.1	0	0
	Non-natal juvenile rearing habitat (linear miles)	33 and 5	0.6	0	0
	<i>Subtotal</i>	<i>151 and 152</i>		<i>0</i>	<i>0</i>
Green sturgeon <i>Acipenser medirostris</i>	Adult migration; juvenile migration and rearing habitat (linear miles)	20	1.5	0	0
Hardhead <i>Mylopharodon conocephalus</i>	Spawning, rearing, and migration habitat (linear miles)	51	1.5	0	0
River lamprey <i>Lampetra ayresi</i>	Spawning, rearing, and migration habitat (linear miles)	51	1.5	0	0
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	Rearing, migration, and potential spawning habitat (linear miles)	43	0.1	0	0
Invertebrate Species					
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	Habitat	1,658	31	20	20
	Number of Occurrences	1	0	0	0
California linderiella <i>Linderiella occidentalis</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	5	3	3	3
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	3	2	0	0
Sacramento anthicid beetle <i>Anthicus sacramento</i>	Habitat	1,658	31	20	20
	Number of Occurrences	2	0	0	0
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	Habitat	42,951	3,360	2,280	2,280
	Number of Occurrences	17	0	0	0
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	29	17	17	5

Table 6-5. Continued

Common Name <i>Scientific Name</i>	Habitats and Occurrences in Plan Area	Existing in the Plan Area ^a	Maximum Permanent Impacts Quantity ^a		
			Alternative 1	Alternative 2	Alternative 3
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	Habitat	32,241	1,963	1,422	1,422
	Number of Occurrences	17	3	3	3
Amphibian Species					
Foothill yellow-legged frog <i>Rana boylei</i>	Habitat – within 130 feet of Perennial Streams	2,113	326	326	326
	Habitat – within 130 feet of Intermittent Streams	8,918	863	863	743
	<i>Subtotal (acreage)</i>	<i>11,031</i>	<i>1,189</i>	<i>1,189</i>	<i>1,069</i>
Western spadefoot toad <i>Spea hammondi</i>	Breeding Habitat: Non-pond	2,211	46	46	41
	Breeding and Upland Habitat	34,241	1,963	1,963	1,577
	Upland Habitat	71,512	8,133	8,133	6,505
	<i>Subtotal</i>	<i>107,963</i>	<i>10,142</i>	<i>10,142</i>	<i>8,123</i>
	Breeding Habitat (number of ponds)	195	22	22	21
Reptile Species					
Blainville's horned lizard <i>Phrynosoma blainvillii</i>	Number of Occurrences	5	0	0	0
Giant garter snake <i>Thamnophis gigas</i>	Breeding and Movement Habitat: Rice	120,225	1,567	1,567	604
	Breeding and Movement Habitat: Managed and Emergent Wetlands, Willow Scrub	32,883	56	54	41
	Breeding and Movement Habitat: Adjoining Cropland	14,008	1,573	1,573	677
	<i>Subtotal (acreage)</i>	<i>167,116</i>	<i>3,196</i>	<i>3,194</i>	<i>1,322</i>
	Movement Habitat: Connected Waterways (linear miles)	463	18	18	14
Western pond turtle <i>Actinemys marmorata</i>	Aquatic Habitat: Emergent Wetland	4,440	81	35	35
	Nesting and Movement Habitat	55,215	4,566	4,566	3,817
	Aquatic, Nesting and Movement Habitat	25,486	5	5	5
	<i>Subtotal (acreage)</i>	<i>85,142</i>	<i>4,606</i>	<i>4,606</i>	<i>3,857</i>
	Aquatic Habitat (number of ponds)	204	24	24	21
	Aquatic Habitat-perennial streams (linear miles)	111	5	5	0

Table 6-5. Continued

Common Name <i>Scientific Name</i>	Habitats and Occurrences in Plan Area	Existing in the Plan Area ^a	Maximum Permanent Impacts Quantity ^a		
			Alternative 1	Alternative 2	Alternative 3
Bird Species					
American peregrine falcon <i>Falco peregrinus anatum</i>	Nesting Habitat	64	9	0	0
	Year-round Foraging Habitat	160,742	1,817	1,817	840
	Seasonal Foraging Habitat	34,119	1,943	1,943	1,577
	<i>Subtotal</i>	<i>194,924</i>	<i>3,759</i>	<i>3,759</i>	<i>2,417</i>
	Number of Known Nest Sites	3	1	0	0
Bald eagle <i>Haliaeetus leucocephalus</i>	Nesting Habitat	23,827	2,784	2,708	2,477
	Year-round Foraging Habitat	7,411	85	0	0
	Seasonal Foraging Habitat	182,018	3,570	3,570	2,222
	<i>Subtotal</i>	<i>213,256</i>	<i>6,439</i>	<i>6,277</i>	<i>4,699</i>
	Number of Known Nest Sites	7	0	0	0
Bank swallow <i>Riparia riparia</i>	Nesting Habitat (linear miles)	169	9	0	0
	Number of Known Nesting Colonies	27	0	0	0
California black rail <i>Laterallus jamaicensis cotuniculus</i>	Number of Occurrences	9	0	0	0
Greater sandhill crane <i>Grus canadensis tabida</i>	Winter Roosting and Foraging Habitat	147,880	1,627	1,627	665
	Traditional Upland Use Area	2,814	137	137	27
	<i>Subtotal</i>	<i>150,694</i>	<i>1,764</i>	<i>1,764</i>	<i>692</i>
Swainson's hawk <i>Buteo swainsoni</i>	Nesting Habitat	17,358	712	315	315
	Nesting and Foraging Habitat	2,565	557	557	213
	Foraging Habitat	130,239	10,441	10,441	7,782
	<i>Subtotal</i>	<i>150,163</i>	<i>11,710</i>	<i>11,312</i>	<i>8,310</i>
	Number of Known Nest Sites	19	0	0	0
Tricolored blackbird <i>Agelaius tricolor</i>	Breeding and Foraging Habitat	268,666	12,617	12,617	9,033
	Number of Known Nesting Colonies	7	1	0	0
Western burrowing owl <i>Athene cucularia</i>	Nesting and Foraging Habitat	165,511	14,496	14,496	11,347
	Number of Occurrences	7	1	1	1
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	Nesting Habitat	5,620	50	50	13
	Number of Occurrences	17	0	0	0

Table 6-5. Continued

Common Name <i>Scientific Name</i>	Habitats and Occurrences in Plan Area	Existing in the Plan Area ^a	Maximum Permanent Impacts Quantity ^a		
			Alternative 1	Alternative 2	Alternative 3
White-tailed kite <i>Elanus leucurus</i>	Nesting Habitat	32,571	3,079	2,598	2,441
	Year-round Foraging Habitat	177,224	6,599	6,599	4,136
	Breeding Season Foraging Habitat	94,526	6,986	6,986	5,757
	<i>Subtotal</i>	<i>304,321</i>	<i>16,664</i>	<i>16,183</i>	<i>12,334</i>
	Number of Occurrences	0	0	0	0
Yellow-breasted chat <i>Icteria virens</i>	Nesting and Foraging Habitat	6,972	980	278	278
	Nesting and Foraging Habitat (Known Use Area)	302	48	0	0
	<i>Subtotal</i>	<i>7,275</i>	<i>1,028</i>	<i>278</i>	<i>278</i>
Mammals					
American badger <i>Taxidea taxus</i>	Habitat - grasslands	68,124	7,776	7,776	6,416
	Number of Occurrences	1	0	0	0
Hoary bat <i>Lasiurus cinereus</i>	Habitat - tree roosting	110,191	12,737	11,659	10,278
	Number of Occurrences	4	0	0	0
Pallid bat <i>Antrozous pallidus</i>	Habitat - tree roosting	110,191	12,737	11,659	10,278
	Number of Occurrences	1	0	0	0
Silver-haired bat <i>Lasionycteris noctivagans</i>	Habitat - tree roosting and cave/crevice roosting	110,191	12,737	11,659	10,278
	Number of Occurrences	6	0	0	0
Western mastiff bat <i>Eumops perotis californicus</i>	Habitat - cave/crevice roosting	Not available	Not available	Not available	Not available
	Number of Occurrences	7	1	1	1
Western red bat <i>Lasiurus blossevillii</i>	Habitat - tree roosting	110,191	12,737	11,659	10,278
	Number of Occurrences	2	0	0	0
Yuma myotis <i>Myotis yumanensis</i>	Habitat - cave/crevice roosting	Not available	Not available	Not available	Not available
	Number of Occurrences	3	0	0	0
Plants					
Adobe lily <i>Fritillaria pluriflora</i>	Number of Occurrences	7	1	1	1
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	7	0	0	0
Ahart's paronychia <i>Paronychia ahartii</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	4	0	0	0

Table 6-5. Continued

Common Name <i>Scientific Name</i>	Habitats and Occurrences in Plan Area	Existing in the Plan Area ^a	Maximum Permanent Impacts Quantity ^a		
			Alternative 1	Alternative 2	Alternative 3
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	Number of Occurrences	1	0	0	0
Brandegee's clarkia <i>Clarkia biloba</i> subsp. <i>brandegeae</i>	Number of Occurrences	5	1	1	1
Brazilian watermeal <i>Wolffia brasiliensis</i>	Number of Occurrences	3	0	0	0
Butte County checkerbloom <i>Sidalcea robusta</i>	Habitat	36,823	2,683	2,638	2,539
	Number of Occurrences	33	8	8	8
Butte County golden clover <i>Trifolium jokerstii</i>	Habitat	14,998	236	236	202
	Number of Occurrences	11	0	0	0
Butte County meadowfoam <i>Limnanthes floccosa</i> subsp. <i>californica</i>	Primary Habitat	16,766	345	345	294
	Secondary Habitat	6,026	1,165	1,165	600
	<i>Subtotal</i>	<i>22,792</i>	<i>1,510</i>	<i>1,510</i>	<i>894</i>
	Number of Occurrences	21	5	5	5
California beaked-rush <i>Rhynchosperma californica</i>	Number of Occurrences	4	0	0	0
California satintail <i>Imperata brevifolia</i>	Number of Occurrences	2	0	0	0
Ferris' milkvetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	Habitat	2,208	176	176	129
	Number of Occurrences	7	0	0	0
Greene's tuctoria <i>Tuctoria greenei</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	5	0	0	0
Hairy Orcutt grass <i>Orcuttia pilosa</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	1	0	0	0
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	Number of Occurrences	2	0	0	0
Hoover's spurge <i>Chamaesyce hooveri</i>	Habitat	34,241	1,963	1,422	1,22
	Number of Occurrences	4	0	0	0
Lesser saltscale <i>Atriplex minuscula</i>	Number of Occurrences	2	0	0	0
Pappose tarplant <i>Centromadia parryi</i> subsp. <i>parryi</i>	Number of Occurrences	1	0	0	0

Table 6-5. Continued

Common Name <i>Scientific Name</i>	Habitats and Occurrences in Plan Area	Existing in the Plan Area ^a	Maximum Permanent Impacts Quantity ^a		
			Alternative 1	Alternative 2	Alternative 3
Pink creamsacs <i>Castilleja rubicundula</i> subsp. <i>rubicundula</i>	Number of Occurrences	4	1	1	1
Recurved larkspur <i>Delphinium recurvatum</i>	Number of Occurrences	2	1	1	0
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	19	1	1	1
Rose mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Number of Occurrences	24	0	0	0
Round-leaved filaree <i>California macrophylla</i>	Number of Occurrences	1	0	0	0
Sagittaria sanfordii <i>Sanford's arrowhead</i>	Number of Occurrences	4	0	0	0
Slender Orcutt grass <i>Orcuttia tenuis</i>	Habitat	34,241	1,963	1,422	1,422
	Number of Occurrences	2	0	0	0
Slender-leaved pondweed <i>Stuckenia filiformis</i>	Number of Occurrences	1	1	1	1
Veiny monardella <i>Monardella venosa</i>	Number of Occurrences	2	0	0	0
Watershield <i>Brasenia shreberi</i>	Number of Occurrences	1	0	0	0
White-stemmed clarkia <i>Clarkia gracilis</i> subsp. <i>albicaulis</i>	Number of Occurrences	1	0	0	0

Note: Impacts for Alternatives 1 and 4 are the same as for Alternative 2.

^a Quantities reflect acres, except as indicated in the *Habitats and Occurrences* column.

Table 6-6. Impacts on Potential Jurisdictional Wetlands and Other Waters in the Plan Area

Type of Wetland or Other Water	Total Impact Allowable under BRCP (acres or linear miles) ^a	Alternative 1	Alternative 2 ^b	Alternative 3	Total in the Plan Area
Potential Wetlands – Vernal Pools and Other Seasonal Wetlands					
Vernal Pools and Other Seasonal Wetlands in Grasslands with Swale Complexes (acres) ^c	64	88	64	64	1,549
Vernal Pools and Other Seasonal Wetlands in Grasslands (acres) ^d	60	61	60	56	525
Vernal Pools and Other Seasonal Wetlands associated with Streams (acres) ^e	178	178	178	178	1,925
Potential Wetlands – Riparian Habitats^f					
Cottonwood-Willow Riparian Forest (acres)	27	313	27	27	7,509
Valley Oak Riparian Forest (acres)	46	212	46	46	4,331
Willow Scrub (acres)	11	144	11	11	2,995
Herbaceous Riparian and River Bar (acres)	20	31	20	20	1,658
Dredger Tailings with Riparian Forest and Scrub – Stream (acres)	105	576	105	105	5,489
Dredger Tailings with Riparian Forest and Scrub – Non-Stream (acres)	136	136	136	136	167
Potential Wetlands – Perennial Emergent					
Emergent Wetland (acres)	35	81	35	35	4,440
Potential Wetlands – Artificial Types					
Managed Wetland (acres)	5	5	5	5	25,486
Managed Seasonal Wetland (acres)	7	7	7	7	2,097
Rice – jurisdictional portion (acres) ^g	79	79	79	33	6,016
Irrigated pasture, cropland – jurisdictional portion (acres) ^h	22	22	22	12	216
<i>Subtotal – wetlands (acres)</i>	796	1,911	796	735	64,403
Non-Wetland Waters					
Stock Ponds (number of ponds)	52	52	52	45	465
Open Water (acres)	0	109	0	0	8,401
Major Canal (acres)	0	27	0	0	1,897
Rivers, Streams, Agricultural Channels (linear miles)	0	141	0	0	2,506
<i>Subtotal other waters (acres)</i>	0	136	0	0	10,298
<i>Subtotal other waters (linear miles)</i>	0	141	0	0	2,506
Total Waters of U.S. (acres)	796	2,048	796	735	74,701
Total Waters of U.S. (linear miles)	0	141	0	0	2,506

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- ^a The BRCP established these limits in Table 4-11 of the Plan.
 - ^b Alternative 1 would generally have more impacts to wetlands and waters than Alternative 2 because the BRCP impact limits would not be in place. Alternative 4 would have the same impacts as Alternative 2.
 - ^c Based on BRCP's assumption of a 4.54% density of vernal pools and seasonal wetland.
 - ^d Based on BRCP's assumption of a 0.88% density of vernal pools and other seasonal wetlands.
 - ^e Based on BRCP's assumption of a 22.88% density of seasonal and perennial wetlands.
 - ^f Only portions of riparian habitats meet jurisdictional criteria under CWA Section 404, but all areas meet jurisdictional criteria under Section 1602.
 - ^g Based on BRCP's assumption that 5% of rice land would support jurisdictional wetlands after removal of artificial irrigation practices.
 - ^h Based on BRCP's assumption that 1% of irrigated pasture and cropland would support jurisdictional wetlands after removal of artificial irrigation practices.
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Table 6-7. Maximum Extent of Permanent Direct Impacts on Natural Communities and Agricultural Lands within the Plan Area

Natural Community/Land Cover Type ^a	Existing in the Plan Area ^a	Maximum Extent Removed by Covered Activities Quantity ^a		
		Alternative 1	Alternative 2	Alternative 3
Oak Woodland and Savanna				
Blue Oak Savanna	10,581	1,487	1,487	1,093
Blue Oak Woodland	34,735	3,817	3,817	3,223
Interior Live Oak Woodland	2,382	513	513	472
Mixed Oak Woodland	44,893	5,517	5,517	5,154
<i>Subtotal</i>	92,590	11,324	11,324	9,943
Grassland				
Grassland	68,124	7,776	7,776	6,416
Grassland with Vernal Swale Complex	34,110	1,939	1,409	1,409
<i>Subtotal</i>	102,234	9,715	9,185	7,825
Riparian				
Cottonwood Willow Riparian Forest	7,509	430	27	27
Valley Oak Riparian Forest	4,331	212	46	46
Willow Scrub	2,995	144	11	11
Herbaceous Riparian River Bar	1,658	31	20	20
Dredger Tailings with Riparian – Stream	5,489	576	105	105
Dredger Tailings with Riparian – Non-stream	167	136	136	136
<i>Subtotal</i>	22,148	1,529	346	346
Wetland				
Emergent Wetland	4,440	81	35	35
Managed Seasonal Wetland	2,097	7	7	7
Managed Wetland	25,486	5	5	5
<i>Subtotal</i>	32,024	93	48	48
Aquatic				
Open Water	8,401	109	0	0
Major Canal	1,897	27	0	0
<i>Subtotal</i>	10,298	140	0	0
Pond (no. of ponds)	465	52	52	45
Agriculture^b				
Rice ^c	120,316	1,615	1,615	652
Irrigated Cropland ^d	20,413	2,102	2,102	1,128
Irrigated Pasture	1,160	105	105	96
<i>Subtotal</i>	141,889	3,822	3,822	1,876
Chaparral	8,317	389	389	369
Coniferous Forest	15	9	9	9
Total	409,516	26,623	25,123	20,415

Notes: Impacts for Alternatives 1 would likely be greater than the impacts for Alternative 2 because the BRCP has established limits on take that currently adjust impacts down from the development identified in the current general plans within the Plan Area. Alternative 4 would have the same impacts as for Alternative 2.

^a Quantities reflect acres, except as indicated in the *Existing in the Plan Area* column. Some of impacts of been adjusted down to account the Plan's take limits, which are assumed to also apply to Alternative 3 but do not for Alternative 1.

^b The BRCP does not address affects to orchard/vineyard (5,216 acres removed) and non-native woodland (7 acres removed). The areas of non-native woodland are mostly dispersed within agricultural areas.

^c 40 acres of permanent direct effects due to rerouting existing canals in the Basin CAZ outside of UPAs is included.

^d 20 acres of permanent direct effects due to rerouting existing canals in the Basin CAZ outside of UPAs is included.

and wetlands, all of which would be reduced to a less-than-significant level by mitigation measures identified in the Gridley general plan EIR. The EIRs for the Oroville and the County general plans found that implementation of those general plans would result in significant and unavoidable impacts on biological resources.

Impact BIO-1: Effects on tricolored blackbird (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 12,617 acres (5%) of modeled tricolored blackbird habitat and one known colony in the Plan Area.

Permanent development within 500 feet of tricolored blackbird habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect tricolored blackbird. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting tricolored blackbirds, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 12,617 acres of tricolored blackbird habitat, together with the impacts from recurring maintenance activities within the Plan Area, would constitute a significant impact. As identified in the general plan EIRs, general plan implementation for the City of Oroville and the County would also result in the loss of one tricolored blackbird colony, which would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 12,617 acres of tricolored blackbird habitat, together with the impacts from recurring maintenance activities within the Plan Area, would constitute a significant impact. As identified in the general plan EIRs, general plan implementation for the City of Oroville and the County would also result in the loss of one colony, which would constitute a significant and unavoidable impact.

Impact BIO-2: Effects on yellow-breasted chat (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 980 acres (14%) of nesting and foraging habitat and 48 acres (16%) of known use areas in the Plan Area.

Permanent development within 500 feet of yellow-breasted chat habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect yellow-breasted chat. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting yellow-breasted chat, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 980 acres of yellow-breasted chat nesting and foraging habitat and 48 acres of known use areas in the Plan Area, together with the impacts from recurring maintenance activities under Alternative 1, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 980 acres of yellow-breasted chat nesting and foraging habitat and 48 acres of known use areas in the Plan Area, together with the impacts from recurring maintenance activities under Alternative 1, would constitute a significant and unavoidable impact.

Impact BIO-3: Effects on bank swallow (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in effects on 9 linear miles (5%) of bank swallow habitat in the Plan Area. No known colonies would be affected.

Permanent development within 500 feet of modeled bank swallow habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect bank swallows.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Implementation of Alternative 1 would result in permanent effects on 9 linear miles of bank swallow habitat in the Plan Area, as well as permanent development within 500 feet of bank swallow habitat. This could cause alterations in behavior due to noise and visual disturbances, which would constitute a significant and unavoidable impact.

CEQA Determination: Implementation of Alternative 1 would result in permanent effects on 9 linear miles of bank swallow habitat in the Plan Area, as well as permanent development within 500 feet of bank swallow habitat. This could cause alterations in behavior due to noise and visual disturbances, which would constitute a significant and unavoidable impact.

Impact BIO-4: Effects on western burrowing owl (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 14,496 acres (9%) of the modeled western burrowing owl habitat in

the Plan Area. Permanent development would affect the location of one CNDDDB record for western burrowing owl.

Permanent development within 500 feet of western burrowing owl habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect western burrowing owl. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting western burrowing owls, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 14,496 acres of western burrowing owl habitat within the Plan Area, together with the impacts from recurring maintenance activities under Alternative 1, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 14,496 acres of western burrowing owl habitat within the Plan Area, together with the impacts from recurring maintenance activities under Alternative 1, would constitute a significant and unavoidable impact.

Impact BIO-5: Effects on western yellow-billed cuckoo (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 50 acres (1%) of modeled western yellow-billed cuckoo habitat in the Plan Area. No known locations of western yellow-billed cuckoo would be lost to development, and applicable AMMs would provide for nest identification in and near permanent development projects and avoid take and minimize effects on nest locations.

Permanent development within 1,300 feet of western yellow-billed cuckoo habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect western yellow-billed cuckoo. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting yellow-billed cuckoos, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Only a small percentage (1%) of western-yellow billed cuckoo habitat in the Plan Area would be lost. However, this species and suitable habitat in the region are rare. In

addition, there is the potential for alterations in behavior due to the proximity of permanent development and impacts from recurring maintenance activities. Therefore, the loss of habitat and associated impacts would constitute a significant and unavoidable impact.

CEQA Determination: Only a small percentage (1%) of western-yellow billed cuckoo habitat in the Plan Area would be lost. However, this species and suitable habitat in the region are rare. In addition, there is the potential for alterations in behavior due to the proximity of permanent development and impacts from recurring maintenance activities. Therefore, the loss of habitat and associated impacts would constitute a significant and unavoidable impact.

Impact BIO-6: Effects on greater sandhill crane (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of up to 1,764 acres (1%) of modeled greater sandhill crane habitat in the Plan Area: 1,627 acres (1%) of winter roosting and foraging habitat and 137 acres (5%) of impact on traditional upland use areas. Permanent development projects that include new transmission lines could result in take of greater sandhill cranes because cranes are vulnerable to line collisions during periods of fog.

Permanent development within 1,300 feet of greater sandhill crane habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect greater sandhill crane.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 1,764 acres of modeled greater sandhill crane habitat and increased risk of powerline collisions would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 1,764 acres of modeled greater sandhill crane habitat and increased risk of powerline collisions would constitute a significant and unavoidable impact.

Impact BIO-7: Effects on California black rail (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would not affect any known localities for California black rail, but occurrences that have not yet been documented could be present. Permanent development could affect such occurrences.

Permanent development within 500 feet of occupied California black rail habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically affect (through noise and visual disturbance) California black rails if they occur in the vicinity. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting California black

rails, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Known localities of this species would not be lost to permanent development. However, the potential effects on currently unknown localities, together with the impacts from recurring maintenance activities, would be adverse. This impact would be significant and unavoidable.

CEQA Determination: Known localities of this species would not be lost to permanent development. However, the potential impacts on currently unknown localities, together with the impacts from recurring maintenance activities, would be significant and unavoidable.

Impact BIO-8: Effects on American peregrine falcon (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 9 acres (14%) of nesting habitat and 3,759 acres (2%) of foraging habitat in the Plan Area. This development would also affect one known nest location.

Permanent disturbance within 500 feet of modeled habitat for American peregrine falcon could disrupt normal behaviors, including nesting, through noise and visual disturbances.

Recurring maintenance activities within Plan Area may periodically affect (through noise and visual disturbance) American peregrine falcon. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, and pipeline maintenance, could result in impacts on nesting peregrine falcons; these impacts could include harm or mortality to eggs and young through nest abandonment and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: The loss of nesting habitat and effects on one known American peregrine falcon nest location, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: The loss of nesting habitat and effects on one known American peregrine falcon nest location, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-9: Effects on Swainson's hawk (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 11,710 acres (8%) of modeled Swainson's hawk habitat in the Plan Area: 712 acres (4%) of modeled nesting habitat (riparian types), 557 acres (22%) of modeled nesting and foraging habitat (blue oak savanna), and 10,411 acres (8%) of foraging habitat

(cropland, irrigated pasture, grassland, and managed wetland). No known locations of Swainson's hawk nesting would be permanently affected.

Permanent development within 1,300 feet of Swainson's hawk nesting habitat and within 500 feet of foraging habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities inside and outside UPAs may periodically indirectly (through noise and visual disturbance) affect Swainson's hawk. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting Swainson's hawks, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 11,710 acres of Swainson's hawk habitat within the Plan Area, together with the impacts from recurring maintenance activities under Alternative 1, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 11,710 acres of Swainson's hawk habitat within the Plan Area, together with the impacts from recurring maintenance activities under Alternative 1, would constitute a significant impact.

Impact BIO-10: Effects on white-tailed kite (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 16,664 acres (5%) of modeled white-tailed kite habitat in the Plan Area: 3,079 acres (9%) of nesting habitat and 13,585 acres (5%) of foraging habitat.

Permanent development within 1,300 feet of white-tailed kite nesting habitat and within 500 feet of foraging habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within the Plan Area may periodically affect (through noise and visual disturbance) white-tailed kites. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting white-tailed kites, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: The loss of 16,664 acres of modeled white-tailed kite habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: The loss of 16,664 acres of modeled white-tailed kite habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-11: Effects on bald eagle (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 2,784 acres (12%) of nesting habitat and 85 acres (1%) of year-round foraging habitat in the Plan Area. No known nest sites would be lost.

Permanent development within 1,300 feet of bald eagle nesting habitat and within 500 feet of foraging habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities inside and outside UPAs may periodically affect (through noise and visual disturbance) bald eagles. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting bald eagles, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: The loss of bald eagle nesting habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: The loss of bald eagle nesting habitat, would together with the impacts from recurring maintenance activities, constitute a significant and unavoidable impact.

Impact BIO-12: Effects on giant garter snake (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of up to 18 miles (4%) of movement habitat and 3,196 acres (2%) of other modeled giant garter snake habitat within the Plan Area. Permanent development projects would affect two locations of giant garter snake recorded in the CNDDDB (2013a), or 7% of the recorded locations in the Plan Area.

Permanent disturbance within 500 feet of modeled habitat could adversely affect giant garter snake through hydrologic alteration of aquatic habitat, water pollution, and introduction of potential predators (cats, dogs, nonnative fish, and bullfrogs). Recurring maintenance activities within the Plan Area, such as transportation facility maintenance, utility service facilities maintenance, water and irrigation canal maintenance, and vegetation management, may periodically directly and indirectly affect giant garter snake habitat; moreover, such activities could result in direct mortality. Considering the amount of habitat lost, the potential for take from recurring maintenance in agricultural lands (canal and ditch maintenance), the uncertainty of maintaining habitat on agricultural lands (rice), and the species' disjunct distribution in the Plan Area, effects on giant garter snake would be adverse.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of up to 18 miles of movement habitat and 3,196 acres of other modeled giant garter snake habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of up to 18 miles of movement habitat and 3,196 acres of other modeled giant garter snake habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-13: Effects on Blainville's horned lizard (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in impacts on 7,776 acres (11%) of grasslands, 1,478 acres (14%) of oak savanna, and 1,413 acres (6%) of riparian natural communities that contain suitable habitat elements for Blainville's horned lizard (e.g., gravelly sandy substrates). The amount of actual suitable habitat that could be affected could not be determined at the scale of this analysis.

Recurring maintenance activities within the Plan Area, such as transportation facility maintenance, utility service facilities maintenance, and vegetation management, may periodically directly and indirectly affect Blainville's horned lizard.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Though the actual amount of suitable habitat lost could not be determined, the extent of natural communities that may contain suitable habitat is considerable; consequently, potential effects on Blainville's horned lizard would be adverse. Such loss of suitable habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: Though the actual amount of suitable habitat lost could not be determined, the extent of natural communities that may contain suitable habitat is considerable; consequently, potential effects on Blainville's horned lizard would be adverse. Such loss of suitable habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-14: Effects on western pond turtle (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 24 (12%) potential breeding ponds, 5 linear miles (5%) of stream habitat, and 4,652 acres (5%) of modeled western pond turtle habitat in the Plan Area. Development could also result in injury or mortality of western pond turtles and habitat fragmentation. No known locations of western pond turtle listed in the CNDDDB (2013a) would be affected by permanent development; however, unreported populations may be affected.

Permanent development within 500 feet of modeled habitat could indirectly affect the species through increased noise and visual disturbances, introduced predators, increased traffic on nearby roads, and water pollution.

Recurring maintenance activities in the Plan Area, such as transportation facility maintenance, utility service facilities maintenance, flood control and stormwater maintenance, and vegetation management, may periodically directly (through inadvertent mortality) and indirectly (through noise, visual disturbance, and ground vibrations) affect western pond turtle.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: The loss of 24 potential breeding ponds, 5 linear miles of stream habitat, and 4,652 acres of modeled western pond turtle habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: The loss of 24 potential breeding ponds, 5 linear miles of stream habitat, and 4,652 acres of modeled western pond turtle habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-15: Effects on foothill yellow-legged frog (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 107 miles of streams (10%) and 1,189 acres of uplands surrounding these streams (11%) in the Cascades and Sierra Nevada foothills—features that provide potential habitat for foothill-yellow legged frog.

Permanent disturbance within 500 feet of modeled foothill yellow-legged frog habitat could adversely affect the species through hydrologic alteration of aquatic habitat, water pollution, and introduction of potential predators (cats, dogs, nonnative fish, and bullfrogs).

Recurring maintenance activities in the Plan Area, such as transportation facility maintenance, utility service facilities maintenance, flood control and stormwater maintenance, and vegetation management, could periodically directly (through inadvertent mortality) and indirectly (through noise, visual disturbance, and ground vibrations) affect yellow-legged frog.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 107 miles of streams and 1,189 acres of associated upland habitat suitable for foothill yellow-legged frog, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 107 miles of streams and 1,189 acres of associated upland habitat suitable for foothill yellow-legged frog, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-16: Effects on western spadefoot (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 22 (11%) potential breeding ponds and 10,142 acres (9%) of modeled western spadefoot habitat (non-pond breeding and upland) in the Plan Area. No known locations of western spadefoot listed in the CNDDB (2013a) would be affected by permanent development; however, unreported populations may be affected.

Permanent development within 500 feet of modeled habitat could indirectly affect the species through increased noise and visual disturbances, increased traffic on nearby roads, and hydrologic alteration of aquatic habitat.

Recurring maintenance activities in the Plan Area may periodically directly (through inadvertent mortality) and indirectly (through noise, visual disturbance, and ground vibrations) affect western spadefoot.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 22 potential breeding ponds and 10,142 acres of modeled western spadefoot habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 22 potential breeding ponds and 10,142 acres of modeled western spadefoot habitat, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-17: Effects on Chinook salmon (spring- and fall-/late fall-run) and Central Valley steelhead (NEPA: less than significant; CEQA: less than significant)

Alternative 1 would result in permanent direct effects on 0.61 mile (0.4% of total occupied aquatic habitat) of spring-run Chinook habitat, 0.55 mile (0.4% of total occupied aquatic habitat) of fall-run Chinook salmon habitat, and 0.77 mile (0.4% of total occupied aquatic habitat) of steelhead habitat within the Plan Area. These habitat losses would result from construction of new and replacement bridge projects both within and outside the UPAs. Bridges would be constructed as free-span structures where feasible. Permanent direct effects would result from placement of bridge structures in the channel, causing a permanent change in substrate composition and channel morphology under the bridge. Bridge structures would not create migration barriers for juvenile or adult salmonids. If riprap were installed in the vicinity of bridge projects, permanent loss of shallow water habitat, riparian vegetation, and instream woody material could result, leading to a loss of cover, shelter, and food resources.

Designated critical habitat for spring-run Chinook salmon and Central Valley steelhead is present in the Plan Area. Designated critical habitat for spring-run Chinook salmon encompasses the length of Pine Creek, Lindo Channel, Big Chico Creek, and Butte Creek, and portions of Mud Creek, Rock Creek, and the Feather River. Approximately 0.61 mile of critical habitat (0.4% of designated critical habitat within the Plan Area) for spring-run Chinook salmon could be permanently affected by construction and replacement of bridge structures. Critical habitat for steelhead occurs in the Feather River through Oroville, Little Chico, Butte, Little Butte, and Little Dry Creeks. Approximately 0.77 mile

(0.4% of designated critical habitat within the Plan Area) of designated critical habitat for steelhead could be permanently affected by construction and replacement of bridge structures.

Essential fish habitat (EFH) for Chinook salmon also occurs in the Plan Area. Construction of new and replacement bridges would result in permanent effects on EFH, as discussed above.

Temporary direct effects on spring-run Chinook salmon, fall-run Chinook salmon, and steelhead would result from construction of residential, recreational, transportation, and other facilities and maintenance activities. Temporary direct effects include noise, visual disturbances, and temporary increases in turbidity in stream channels associated with operating equipment in or near streams supporting Chinook salmon and steelhead habitat. These activities also pose a threat to water quality, fish, and other aquatic organisms from potential releases of contaminants into streams or adjacent waters. Noise and increased turbidity can cause a temporary disruption of feeding, migration, and spawning activities.

Recurring maintenance activities within and outside UPAs, such as transportation facility maintenance, utility service facilities maintenance, flood control and stormwater facility maintenance, and vegetation management, may have temporary direct effects on Chinook salmon and steelhead through the release of sediment and contaminants and the removal of in-channel woody material. Maintenance of the Sycamore Pool in Big Chico Creek, which requires weekly dewatering from May to September, can cause stranding of juvenile Chinook salmon and steelhead.

Permanent indirect effects of construction of new or replacement bridges and maintenance activities include noise, visual disturbance, and ground vibrations that could cause Chinook salmon and steelhead to avoid suitable aquatic habitat. Vehicles on bridges and equipment used for maintenance activities can increase noise levels and lead to release of petroleum-based chemicals into waterways, in turn causing decreased spawning, migratory, or rearing success. An increase in the input of contaminants (e.g., petroleum-based chemicals) to waterways could result from the presence of new impervious surfaces associated with residential development, transportation projects, and other facilities if runoff enters waterways. Contaminants can adversely affect fish directly through exposure or indirectly through adverse effects on food organisms (e.g., macroinvertebrates). Adverse effects may also occur through bioaccumulation of toxic compounds in these food organisms.

Alternative 1 could result in adverse effects on Chinook salmon and steelhead and their critical habitat. Project proponents would apply for permits on a project-by-project basis, without a coordinated effort to minimize biological impacts throughout the Plan Area. Because Alternative 1 would result in implementation on a project-by-project basis, conservation planning and implementation would not occur at a regional scale and, therefore, would not allow for more efficient and effective establishment of a system of conservation lands to meet the needs of species covered by the BRCP.

NEPA Determination: Implementation of avoidance and minimization measures would occur on a project-by-project basis. Seasonal restrictions on in-water activities, erosion and sediment control BMPs, and other measures to protect water quality would be implemented to protect fish habitat. With implementation of these measures, impacts on Chinook salmon and steelhead, spring- and fall-/late fall-run Chinook salmon and steelhead critical habitat, and EFH would be less than significant because of their limited extent and wide dispersal across the Plan Area. No mitigation is required.

CEQA Determination: Implementation of avoidance and minimization measures would occur on a project-by-project basis. Seasonal restrictions on in-water activities, erosion and sediment control BMPs, and other measures to protect water quality would be implemented to protect fish habitat. With implementation of these measures, impacts on Chinook salmon and steelhead, spring- and fall-/late fall-run Chinook salmon and steelhead critical habitat, and EFH would be less than significant because of their limited extent and wide dispersal across the Plan Area. No mitigation is required.

Impact BIO-18: Effects on Sacramento splittail (NEPA: less than significant; CEQA: less than significant)

Alternative 1 would result in the permanent alteration of 0.09 mile (0.2% of total occupied aquatic habitat) of Sacramento splittail habitat from construction of replacement bridges in the Feather River. Permanent direct effects would result from placement of bridge structures in the channel, causing a permanent change in substrate composition and channel morphology under the bridge. Bridge structures would not create migration barriers for Sacramento splittail.

Temporary direct effects on Sacramento splittail would result from construction of residential, recreational, transportation, and other facilities and maintenance activities. Temporary direct effects include noise, visual disturbances, and temporary increases in turbidity in stream channels associated with operating equipment in or near streams supporting splittail. Water quality could be affected by release of sediment, increased turbidity, and contaminants. Sacramento splittail would be more susceptible to contaminants because they are bottom feeders, feeding on macroinvertebrates that live in the substrate. Noise and disturbance from construction activities could prevent splittail from using areas of streams where they would feed or migrate if they are present during construction activities.

Permanent indirect effects from construction of new or replacement bridges and maintenance activities include noise, visual disturbance, and ground vibrations that could cause Sacramento splittail to avoid aquatic habitat. Disturbance caused by vehicles or equipment near occupied water bodies can deter splittail from using spawning, migratory, or rearing areas resulting in decreased survival. Increased runoff of petroleum-based chemicals from operation of vehicles on new bridges into waterways can cause decreased migratory or rearing success. An increase in the input of contaminants (e.g., petroleum-based chemicals) to waterways could result from the presence of new impervious surfaces associated with residential development, transportation projects, and other facilities if runoff enters waterways. Contaminants can adversely affect fish directly through exposure or indirectly through adverse effects on food organisms (e.g., macroinvertebrates). Adverse effects may also occur through bioaccumulation of toxic compounds in these food organisms.

NEPA Determination: Implementation of avoidance and minimization measures would take place on a project-by-project basis. Nevertheless, bridge construction would have a minor but permanent effect on Sacramento splittail aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

CEQA Determination: Implementation of avoidance and minimization measures would take place on a project-by-project basis. Nevertheless, bridge construction would have a minor but permanent effect on Sacramento splittail aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

Impact BIO-19: Effects on green sturgeon (NEPA: less than significant; CEQA: less than significant)

Alternative 1 would result in permanent direct effects on 0.23 mile (0.4% of total occupied aquatic habitat) of green sturgeon habitat from construction of new or replacement bridges projects in the Oroville UPA on the Feather River (this area is also designated critical habitat). Placement of bridge structures in the channel would result in alteration of substrate and channel morphology under the bridge. Bridge structures would not create migration barriers for green sturgeon.

Temporary direct effects on green sturgeon would result from construction of residential, recreational, transportation, and other facilities and maintenance activities. Temporary direct effects include noise, visual disturbances, and temporary increases in turbidity in stream channels associated with operating equipment in or near streams supporting green sturgeon. Noise and disturbance from construction activities could prevent green sturgeon from using areas of streams where they would feed or migrate if they are present during construction activities. Short-term increases in suspended sediments or turbidity are unlikely to affect green sturgeons' foraging success because the species uses olfactory rather than visual cues. While foraging success may not be affected by turbidity, green sturgeon may be more susceptible to contaminants because they are bottom feeders, feeding on fish and macroinvertebrates that live in the substrate and that are consequently susceptible to uptake of deposited contaminants.

Permanent indirect effects from construction of new or replacement bridges and maintenance activities include noise, visual disturbance, and ground vibrations that could cause green sturgeon to avoid aquatic habitat. Increased runoff of petroleum-based chemicals from operation of vehicles on new bridges into waterways can cause decreased migratory or rearing success. An increase in the input of contaminants (e.g., petroleum-based chemicals) to waterways could result from the presence of new impervious surfaces associated with residential development, transportation projects, and other facilities if runoff enters waterways. Contaminants can adversely affect fish directly through exposure or indirectly through adverse effects on food organisms (e.g., macroinvertebrates). Adverse effects may also occur through bioaccumulation of toxic compounds in these food organisms.

Alternative 1 could result in adverse effects on green sturgeon and its critical habitat. Project proponents would apply for permits on a project-by-project basis, without a coordinated effort to minimize biological impacts throughout the Plan Area. Because Alternative 1 would result in implementation on a project-by-project basis, conservation planning and implementation would not occur at a regional scale and, therefore, would not allow for more efficient and effective establishment of a system of conservation lands to meet the needs of species covered by the BRCP.

NEPA Determination: Implementation of avoidance and minimization measures would occur on a project-by-project basis. Seasonal restrictions on in-water activities, erosion and sediment control BMPs, and other measures to protect water quality would be implemented to protect fish habitat. With implementation of these measures, impacts on green sturgeon habitat would be limited in extent and widely dispersed across the Plan Area. Consequently, impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of avoidance and minimization measures would occur on a project-by-project basis. Seasonal restrictions on in-water activities, erosion and sediment control BMPs, and other measures to protect water quality would be implemented to protect fish habitat. With implementation of these measures, impacts on green sturgeon habitat would be limited in

extent and widely dispersed across the Plan Area. Consequently, impacts would be less than significant. No mitigation is required.

Impact BIO-20: Effects on river lamprey (NEPA: less than significant; CEQA: less than significant)

Alternative 1 would result in the permanent alteration of 0.23 mile (0.4% of total occupied aquatic habitat) of river lamprey habitat from construction of new and replacement bridges on the Feather River in the Oroville UPA. Permanent direct effects would result from placement of bridge structures in the channel, causing a permanent change in substrate composition and channel morphology under the bridge. Bridge structures would not create migration barriers for river lamprey.

Dewatering around the piles associated with bridge construction could also result in permanent effects on river lamprey. Dewatering causes lamprey ammocoetes to emerge from the substrate once the area is dry, resulting in mortality either through desiccation or predation by birds or mammals. Moreover, equipment operating in the water could kill ammocoetes by exposing and crushing them.

Temporary direct effects of construction activities include degradation of water quality through release of sediment and contaminants and increased turbidity. Increased turbidity and contaminant release may affect ammocoetes because they are filter feeders. Noise and disturbance from construction activities could prevent river lamprey from using areas of streams where they would feed or migrate if they are present during construction activities.

Permanent indirect effects could result from both construction and maintenance activities. An increase in the input of contaminants (e.g., petroleum-based chemicals) to waterways could result from the presence of new impervious surfaces associated with residential development, transportation projects, and other facilities if runoff enters waterways. Such an increase could result in increased toxins in sediments, having sublethal effects on ammocoetes associated with bioaccumulation of toxic compounds, as well as potentially lethal effects, depending on the contaminants.

NEPA Determination: Implementation of avoidance and minimization measures would take place on a project-by-project basis. Nevertheless, bridge construction would have a minor but permanent effect on river lamprey and its habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

CEQA Determination: Implementation of avoidance and minimization measures would take place on a project-by-project basis. Nevertheless, bridge construction would have a minor but permanent effect on river lamprey and its habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

Impact BIO-21: Effects on valley elderberry longhorn beetle (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 3,360 acres (approximately 8%) of the modeled valley elderberry longhorn beetle habitat in the Plan Area. No known locations of valley elderberry longhorn beetle listed in the CNDDB (2013a) would be affected; however, unreported populations may be affected.

Permanent disturbance within 100 feet of modeled habitat could indirectly affect valley elderberry longhorn beetle if hydrologic alterations adversely affect elderberry shrubs occupied by the species.

Recurring maintenance activities, such as transportation facility maintenance, utility service facilities maintenance, flood control and stormwater maintenance, and vegetation management, may periodically directly and indirectly affect valley elderberry longhorn beetle habitat.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

Considering the amount of habitat lost in the Plan Area, the effects on valley elderberry longhorn beetle would be adverse. This impact would be significant.

NEPA Determination: Loss of 3,360 acres of modeled valley elderberry longhorn beetle habitat and potential direct and indirect effects associated with ground disturbance and maintenance activities would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 3,360 acres of modeled valley elderberry longhorn beetle habitat and potential direct and indirect effects associated with ground disturbance and maintenance activities would constitute a significant and unavoidable impact.

Impact BIO-22: Effects on vernal pool crustaceans (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of 1,963 acres (approximately 6%) of the modeled vernal pool crustacean habitat in the Plan Area. Permanent development would potentially result in the loss of at least three vernal pool tadpole shrimp occurrences (18% of those in the Plan Area), 17 vernal pool fairy shrimp occurrences (59% of those in the Plan Area), two Conservancy fairy shrimp occurrences (66% of those in the Plan Area), and three occurrences of California linderiella (60% of those in the Plan Area), as well as unreported populations.

Permanent development within 250 feet of vernal pool complexes could result in alternation of the hydrology of vernal pools through the disruption of surface and subsurface flows across the landscape, potentially affecting the ability of these pools to support vernal pool crustaceans.

Recurring maintenance activities within 250 feet of vernal pool complexes could also result in disturbances of vernal pools through trenching and grading and could also result in the release of contaminants into vernal pools, any of which could adversely affect vernal pool crustaceans.

Alternative 1 would also result in the permanent loss of up to 288 acres (4.6%) of designated critical habitat for vernal pool fairy shrimp in the Plan Area, and up to 530 acres (2.3%) of designated critical habitat for vernal pool tadpole shrimp. Not all these areas necessarily contain the primary constituent elements (as defined in the critical habitat designations for these species) needed to support vernal pool fairy shrimp and vernal pool tadpole shrimp; consequently, the actual amount of critical habitat affected for these species may be less than the acreages reported here.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat. Considering the relative numbers of occurrences affected, the amount of habitat lost in the Plan

Area, and the potential effects of recurring maintenance activities, the effects on vernal pool crustaceans would be adverse. This impact would be significant.

NEPA Determination: Loss of 1,963 acres of modeled habitat for vernal pool crustaceans, loss of several known occurrences of four species of vernal pool crustaceans, potential loss of designated critical habitat, and adverse indirect effects on water quality and hydrology would constitute a significant and unavoidable impact.

CEQA Determination: Loss of 1,963 acres of modeled habitat for vernal pool crustaceans, loss of several known occurrences of four species of vernal pool crustaceans, potential loss of designated critical habitat, and adverse indirect effects on water quality and hydrology would constitute a significant and unavoidable impact.

Impact BIO-23: Effects on Red Bluff dwarf rush (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Alternative 1 would result in the loss of at least one occurrence of Red Bluff dwarf rush. Alternative 1 would also result in the loss of 1,313 acres of modeled habitat for Red Bluff dwarf rush and the temporary loss of habitat functions on an additional 518 acres of modeled habitat. Although Red Bluff dwarf rush is not known to be present in this habitat, undiscovered occurrences are potentially present and could be affected.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat and no potential impacts on Red Bluff dwarf rush associated with such activities. Moreover, because individual projects would assess impacts based on occupied rather than modeled habitat, no compensation for impacts on modeled habitat would be implemented. Loss of habitat would be an adverse effect on this species. This impact would be significant.

NEPA Determination: Loss of modeled habitat, as well as at least one occurrence of Red Bluff dwarf rush associated with implementation of Alternative 1, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of modeled habitat, as well as at least one occurrence of Red Bluff dwarf rush associated with implementation of Alternative 1, would constitute a significant and unavoidable impact.

Impact BIO-24: Effects on Butte County meadowfoam (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Alternative 1 would result in the loss of three occurrences of Butte County meadowfoam and the partial loss of two other occurrences and would have indirect effects on up to seven occurrences. In addition, Alternative 1 would result in the loss of 477.6 acres of critical habitat designated for Butte County meadowfoam. Alternative 1 would result in the loss of 345 acres of modeled primary habitat and 1,165 acres of modeled secondary habitat and the temporary loss of habitat functions on an additional 179 acres of primary habitat and 144 acres of secondary habitat. The effects on modeled habitat could potentially affect undiscovered occurrences of Butte County meadowfoam.

Mitigation for this impact would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be

no beneficial effects on the species from managing and enhancing preserved habitat and no potential impacts on the species associated with such activities. Under this alternative, there would be no Chico Butte County Meadowfoam Preserve, nor would preservation of all or part of five other occurrences take place. Moreover, because individual projects would assess impacts based on occupied rather than modeled habitat, no compensation for impacts on modeled habitat would be implemented. Loss of habitat would be an adverse effect on this species. This impact would be significant.

NEPA Determination: Loss of modeled habitat, critical habitat, and multiple occurrences of Butte County meadowfoam associated with implementation of Alternative 1, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of modeled habitat, critical habitat, and multiple occurrences of Butte County meadowfoam associated with implementation of Alternative 1, would constitute a significant and unavoidable impact.

Impact BIO-25: Effects on Butte County checkerbloom (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Alternative 1 would result in adverse effects on eight occurrences of Butte County checkerbloom. Alternative 1 would also result in the loss of 2,638 acres of modeled habitat for Butte County checkerbloom and the temporary loss of habitat functions on an additional 194 acres of modeled habitat. The effects on modeled habitat could potentially affect undiscovered occurrences of Butte checkerbloom.

Mitigation for this impact would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat and no potential impacts on the species associated with such activities. Moreover, because individual projects would assess impacts based on occupied rather than modeled habitat, no compensation for impacts on modeled habitat would be implemented. Loss of habitat would result in an adverse effect on this species.

NEPA Determination: Loss of modeled habitat, as well as adverse effects on eight occurrences of Butte County checkerbloom associated with implementation of Alternative 1, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of modeled habitat, as well as adverse effects on eight occurrences of Butte County checkerbloom associated with implementation of Alternative 1, would constitute a significant and unavoidable impact.

Impact BIO-26: Effects on other special-status plants (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Alternative 1 would not result in the loss of or damage to any known occurrences of the other 11 covered plant species or 13 noncovered special-status plant species that occur in the Plan Area. However, it would result in the loss of habitat for eight covered plant species (beyond those discussed in the preceding three impacts), as well as five noncovered special-status plant species. No occurrences of or habitat for lesser saltscale, veiny monardella, or California beaked rush would be affected.

Alternative 1 would result in the loss of 1,313 acres of modeled habitat and temporary loss of habitat functions on an additional 518 acres of modeled habitat for Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, and Greene's tuctoria. In addition, Alternative 1 would result in the loss of 1.7 acres of critical habitat designated for Hoover's spurge, hairy Orcutt grass, and Greene's tuctoria. Alternative 1 would result in the loss of 176 acres of modeled habitat and temporary loss of habitat functions on an additional 18 acres of modeled habitat for Ferris' milkvetch. It would result in the loss of 236 acres of modeled habitat and temporary loss of habitat functions on an additional 184 acres of modeled habitat for Butte County golden clover. Mitigation for this impact would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat and no potential impacts on these species associated with such activities. Moreover, because individual projects would assess impacts based on occupied rather than modeled habitat, no compensation for impacts on modeled habitat would be implemented. Loss of habitat would be an adverse effect on these species.

Alternative 1 could also result in the loss of habitat and the temporary loss of habitat functions for five noncovered species with known occurrences: Brandegees' clarkia, white-stemmed clarkia, adobe lily, rose mallow, and California satintail. Undiscovered occurrences of these species occurring in the affected habitats could also be affected. Existing regulatory processes may provide a way to mitigate impacts to these plant species. Impacts are expected to occur as a result of activities that are subject to discretionary authorization by Local Agencies, BCAG, and other permittees (e.g., Caltrans) and therefore would be subject to environmental review under CEQA. Avoidance and minimization measures and compensatory mitigation could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Therefore, it is anticipated these actions would mitigate for the loss of noncovered plant species. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

NEPA Determination: Loss of critical habitat, modeled habitat and temporary loss of habitat functions for other covered special-status plant species would constitute a significant and unavoidable impact.

CEQA Determination: Loss of critical habitat, modeled habitat and temporary loss of habitat functions for other covered special-status plant species would constitute a significant and unavoidable impact.

Impact BIO-27: Effects on Antioch Dunes and Sacramento anthicid beetles (NEPA: less than significant; CEQA: less than significant)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of approximately 31 acres of herbaceous riparian river bar (1% of this community in the Plan Area) that could be used by Antioch Dunes and Sacramento anthicid beetles. Recurring maintenance activities in the Plan Area could result in temporary disturbances of anthicid beetle habitat. Considering the small amount of habitat loss in the Plan Area (1%), impacts on Antioch Dunes and Sacramento anthicid beetles would be less than significant.

NEPA Determination: Loss of approximately 31 acres of habitat (1% of this community in the Plan Area) that could be used by Antioch Dunes and Sacramento anthonid beetles would be a minimal adverse effect. However, because of the limited extent of this loss, the impact would be less than significant. No mitigation is necessary.

CEQA Determination: Loss of approximately 31 acres of habitat (1% of this community in the Plan Area) that could be used by Antioch Dunes and Sacramento anthonid beetles would be a minimal adverse effect. However, because of the limited extent of this loss, the impact would be less than significant. No mitigation is necessary.

Impact BIO-28: Effects on hardhead (NEPA: less than significant; CEQA: less than significant)

Hardhead was not addressed in the BRCP analysis, but uses similar habitat to Sacramento splittail. The analysis of effects on Sacramento splittail during preparation of the BRCP was used to determine the effects on hardhead (the effects on Sacramento splittail were analyzed but the species did not end up being included as a covered species in the BRCP).

Alternative 1 would result in permanent alteration of 0.09 mile of hardhead habitat from construction of new and replacement bridges in the Feather River. Permanent direct effects would result from placement of bridge structures in the channel, causing a permanent change in substrate composition and channel morphology under the bridge. Bridge structures would not create migration barriers for hardhead.

Temporary direct effects on hardhead would result from construction of residential, recreational, transportation, and other facilities and maintenance activities. Water quality could be affected by release of sediment and increased turbidity and contaminants. Noise and disturbance from construction activities could prevent hardhead from using areas of streams where they would spawn, feed, or migrate if they are present during construction activities. Maintenance of the Sycamore Pool in Big Chico Creek from May to September entails requires weekly dewatering, potentially stranding adult and juvenile hardhead and causing direct mortality.

Permanent indirect effects on hardhead would result from both construction and maintenance activities. An increase of toxic contaminant release could occur from new impervious surfaces from residential development, transportation projects, and other facilities if runoff enters waterways. An increase in the input of contaminants (e.g., petroleum-based chemicals) to waterways could result from the presence of new impervious surfaces associated with residential development, transportation projects, and other facilities if runoff enters waterways. Contaminants can adversely affect fish directly through exposure or indirectly through adverse effects on food organisms (e.g., macroinvertebrates). Adverse effects may also occur through bioaccumulation of toxic compounds in these food organisms.

Alternative 1 could result in adverse effects on hardhead. Project proponents would apply for permits on a project-by-project basis, without a coordinated effort to minimize biological impacts throughout the Plan Area. Because Alternative 1 would result in implementation on a project-by-project basis, conservation planning and implementation would not occur at a regional scale and, therefore, would not allow for more efficient and effective establishment of a system of conservation lands to meet the needs of species covered by the BRCP. However, with implementation of avoidance and minimization measures on a project-by-project basis, Alternative 1 would have a less-than-significant impact on hardhead.

NEPA Determination: Implementation of avoidance and minimization measures would take place on a project-by-project basis. Nevertheless, bridge construction would have a minor but permanent effect on hardhead aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

CEQA Determination: Implementation of avoidance and minimization measures would take place on a project-by-project basis. Nevertheless, bridge construction would have a minor but permanent effect on hardhead aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

Impact BIO-29: Effects on noncovered special-status birds and migratory birds (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in substantial losses of natural communities that provide habitat for noncovered special-status birds as well as nesting habitat for migratory birds. Permanent development would remove 11,324 acres (12%) of oak woodland and savanna, 1,529 acres (6%) of riparian, and 93 acres (0.2%) of wetland natural communities within the Plan Area; these community types support the highest quality nesting habitats for noncovered bird species. This habitat loss would be addressed on a project-by-project basis through mitigation and compensation under the existing regulatory framework and would likely result in a pattern of conservation that is geographically fragmented and managed in a piecemeal fashion. There would be no mechanism to comprehensively provide for species recovery. In addition, there would be no comprehensive adaptive management and monitoring program to ensure successful conservation at a landscape scale. Therefore it is anticipated that this habitat loss would significantly affect noncovered special status birds and migratory birds.

Permanent development within 500 feet of nesting and foraging habitat for noncovered birds can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities. Recurring maintenance activities within the Plan Area such as transportation facility maintenance, utility service facilities maintenance, water and irrigation canal maintenance, and vegetation management, may periodically indirectly affect noncovered bird behavior, including nesting. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting birds, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults. Permanent development and recurring maintenance activities effecting noncovered special status birds and migratory birds would comply with the provisions of the MBTA and the California Fish and Game Code on a project-by-project basis. The USFWS and CDFW enforce the MBTA and California Fish and Game Code and typically require actions to protect and reduce impacts to migratory birds such as:

- Avoid removing or disturbing any active noncovered raptor nests or other noncovered special-status birds' nests occurring within a designated buffer (i.e., 250 feet) of areas that support large trees or other natural habitats, or remnants there of (e.g., grasslands, chaparral, riparian, oak woodland).
- Conduct nest and bird surveys during the nonbreeding season (generally between September 1 and January 31) or after a qualified biologist determines that fledglings have left any active nests.

- Limit activities during nonbreeding season (generally September 1 through January 31).
- If activities need to occur during the breeding season (February 1 through August 31), then a wildlife biologist with experience in conducting nesting bird surveys would be retained to conduct surveys for noncovered nesting birds in all tree, shrub, and ground-nesting habitat within a designated buffer (i.e., 250 feet) of construction activities, including areas subject to grading.
- Consult with CDFW/USFWS to establish a suitable buffer zone if active nests are identified within designated buffer (i.e., 250 feet) of the work area. The minimum buffer area requirements are 250 feet for any active noncovered raptor nest and 100 feet for any noncovered migratory bird nest unless otherwise specified by CDFW and/or USFWS.
- Monitor active nests to determine when the young have fledged.
- Reference to specific requirements and the MBTA would be included in the construction specifications

Compliance with the MBTA and California Fish and Game Code is mandatory and the actions described above would be applied on a project-by-project basis depending on the project characteristics and the timeframe of potential disturbance; therefore, it is expected disturbances to noncovered special status birds and migratory birds would be reduced or avoided.

NEPA Determination: Substantial losses of natural communities that provide habitat for noncovered special-status birds and losses of nesting habitat for migratory birds, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: Substantial losses of natural communities that provide habitat for noncovered special-status birds and losses of nesting habitat for migratory birds, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-30: Effects on bats (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Bats that are known to or could occur in the Plan Area (pallid bat, silver-haired bat, western red-bat, hoary bat, western mastiff bat, and Yuma myotis) employ varied roost strategies, from solitary roosting in foliage of trees to colonial roosting in trees, caves, mines, and artificial structures such as tunnels, buildings, and bridges. Various roost strategies include night roosts, maternity roosts, migration stopover, and hibernation. The natural community/land cover types used to assess effects on bat roosting habitat comprise oak woodland and savanna (all types) and riparian (all types except willow scrub); all undeveloped portions of the Plan Area would be suitable for foraging.

Under Alternative 1, permanent development projects associated with the Local Agencies' general plans would result in the loss of up to 12,737 acres (11%) of potential tree roosting habitat in the Plan Area. In addition, bridge replacement and improvements could affect bats that utilize bridge weep holes and crevices for roosting.

Permanent development within 500 feet of bat roosting habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities if bats are present.

Recurring maintenance activities may periodically indirectly (through noise and visual disturbance) affect roosting bats. Recurring maintenance activities, such as vegetation management and bridge maintenance could result in impacts on bats, which could include harm or mortality to young and adults, and reduced reproductive success.

Mitigation for these impacts would be developed and implemented on a project-specific basis. Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of up to 12,737 acres of potential bat roosting habitat in the Plan Area under Alternative 1, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

CEQA Determination: Loss of up to 12,737 acres of potential bat roosting habitat in the Plan Area under Alternative 1, together with the impacts from recurring maintenance activities, would constitute a significant and unavoidable impact.

Impact BIO-31: Effects on American badger (NEPA: less than significant; CEQA: less than significant)

Under Alternative 1, permanent development projects associated with implementation of the Local Agencies' general plans would result in the loss of 7,776 acres (11%) of grasslands that are potential habitat for American badger in the Plan Area. No American badger records listed in the CNDDDB are in areas that would be directly affected by development projects and therefore, Alternative 1 is not expected to result in direct impacts on known occurrences; however, impacts on unreported individuals may occur. Permanent development within 500 feet of American badger habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities. Recurring maintenance activities within the Plan Area may periodically indirectly (through noise and visual disturbance) affect American badger. Impacts associated with discretionary approvals would be mitigated on a project-specific basis. Badgers are considered to have secure populations in California (NatureServe rank of S4); therefore, potential indirect impacts are not anticipated to significantly affect existing badger populations.

Because no regional conservation strategy or conservation measures would be implemented, there would be no beneficial effects on the species from managing and enhancing preserved habitat.

NEPA Determination: Loss of 7,776 acres of potential American badger habitat in the Plan Area under Alternative 1 would remove a substantial amount of potential habitat for the species, but because badgers are considered to have secure populations in California (NatureServe rank of S4), this impact would be less than significant. No mitigation is required.

CEQA Determination: Loss of 7,776 acres of potential American badger habitat in the Plan Area under Alternative 1 would remove a substantial amount of potential habitat for the species, but because badgers are considered to have secure populations in California (NatureServe rank of S4), this impact would be less than significant. No mitigation is required.

Impact BIO-32: Effects on migratory deer (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Effects on migratory black-tailed deer in the Plan Area were conducted qualitatively and are based primarily on a review of BRCP Figure 3-20 (Deer Herds and Habitat Ranges in the Plan Area) and

various maps in the BRCP depicting the UPAs and transportation improvement projects. The information on deer herds presented here and in the BRCP comes from the 2005 County general plan.

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would allow some development within winter deer herd range and critical winter deer herd range but would require that development be planned according to the Deer Herd Migration Area Overlay in the County general plan (see Figure LU-4 in the County general plan). This overlay, which the County general plan defines as a more specific regulation to the underlying planning designations, states that development in the winter deer herd migration area requires a minimum lot size of 20 acres and that development in the critical winter deer herd migration area requires a minimum lot size of 40 acres; however, development in these areas may be clustered at smaller lot sizes than these minimums in order to protect the deer herd areas, provided that the nondevelopment areas are protected under permanent conservation easements.

Residential development is proposed within a small amount of critical winter deer habitat in the northeast portion of the Chico UPA, and scattered residential development is proposed within winter deer range along the eastern limits of the Chico UPA—in particular, a large area along the south side of Butte Creek and in the Foothill UPA north of SR 191.

A substantial amount of residential development is proposed within critical winter deer range for the Buck Mountain herd from buildout of the area west of Lake Oroville; a small amount of development is proposed within the lower elevation winter deer range.

For the Mooretown deer herd, a small amount of residential development is proposed within critical winter habitat for the Mooretown herd east of Oroville, and a large amount is proposed in lower elevation winter habitat in the Bangor UPA and the southeastern corner of the Oroville UPA.

NEPA Determination: Despite the minimum lot sizes proposed by the County's general plan, considering the current state of critical winter deer habitat in the Plan Area, the large loss of critical winter habitat for the Bucks Mountain deer herd, and the lower elevation winter habitat for the East Tehama and Mooretown deer herds, development under Alternative 1 would result in a significant and unavoidable impact.

CEQA Determination: Despite the minimum lot sizes proposed by the County's general plan, considering the current state of critical winter deer habitat in the Plan Area, the large loss of critical winter habitat for the Bucks Mountain deer herd, and the lower elevation winter habitat for the East Tehama and Mooretown deer herds, development under Alternative 1 would result in a significant and unavoidable impact.

Impact BIO-33: Effects on wildlife migration corridors (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The potential effects of Alternative 1 on wildlife corridors in the Plan Area were evaluated qualitatively using map data from the California Essential Habitat Connectivity (CEHC) Project (Spencer et al. 2010). This information was used to determine if buildout of any of the UPAs would result in barriers across natural lands that serve as known or potential wildlife corridors. The CEHC identified natural blocks of habitat across California and areas that potentially provide linkages—or Essential Connectivity Areas (ECAs)—between these blocks. ECAs are defined as lands likely to be important to wildlife movement between large, mostly natural areas at the statewide level. The

ECAs form a functional network of wildlands that are considered important to the continued support of California's diverse natural communities.

Two ECAs occur within the Plan Area. The Orland Buttes/ Stone Valley/ Julian Rocks–Ishi Wilderness ECA crosses the Plan Area at its northwest corner. This ECA connects the Sierra foothills to the north of, and including a portion of, the Plan to the rolling grasslands west of the Plan Area and ultimately to the Coast Ranges. The North Table Mountain–Ishi Wilderness ECA originates northeast of the Plan Area, enters the Plan Area just east of Chico, and continues south through the foothills to the outskirts of Oroville. This ECA connects the higher elevation Cascades to the northeast to the foothills along the Plan Area's eastern boundary.

Under Alternative 1, permanent development projects associated with implementation of the Local Agencies' general plans would occupy a large portion of the North Table Mountain–Ishi Wilderness ECA and would consequently adversely affect wildlife corridors, including the movement of migratory deer. Capacity enhancements on SR 99 would likely create additional barriers to east-west wildlife movements through the northern portion of the Plan Area.

NEPA Determination: Under Alternative 1, permanent development projects associated with Local Agencies' general plans would result in a significant and unavoidable impact on wildlife corridors in the Plan Area.

CEQA Determination: Under Alternative 1, permanent development projects associated with Local Agencies' general plans would result in a significant and unavoidable impact on wildlife corridors in the Plan Area.

Impact BIO-34: Effects on wetlands and waters of the United States (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans could result in impacts on up to 1,911 acres (3%) of potentially jurisdictional wetlands, 136 acres (0.2%) of other waters, and 141 linear miles (6%) of other waters in the Plan Area.

Permanent development adjacent to wetlands and waters of the United States could result in alterations in local ground and surface waters and the introduction of pollutants that could adversely affect the functions and values of wetlands and waters.

Recurring maintenance activities adjacent to wetlands and waters of the United States could result in the inadvertent introduction of invasive plant species, the accidental release of chemical pollutants into wetlands and waters, and sedimentation resulting from ground-disturbing activities that could adversely affect the functions and values of wetlands and waters.

Mitigation for these impacts would be developed and implemented on a project-specific basis.

NEPA Determination: Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans could adversely affect the functions and values of wetlands and waters in the Plan Area. This is considered a significant and unavoidable impact.

CEQA Determination: Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans could adversely affect the functions and values of wetlands and waters in the Plan Area. This is considered a significant and unavoidable impact.

Impact BIO-35: Effects on chaparral (NEPA: less than significant; CEQA: less than significant)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in impacts on 389 acres (5%) of chaparral in the Plan Area.

Permanent development adjacent to chaparral could result in the introduction of invasive plant species that would affect species composition in this natural community.

Recurring maintenance activities within and adjacent to chaparral could result in the inadvertent introduction of invasive plant species, removal and trimming of vegetation for utility and transportation maintenance, ground disturbance associated with utility maintenance and the establishment of seasonal fire breaks, and the accidental release of vehicle oils and fuels that could alter the species composition of this natural community.

NEPA Determination: Because the relative amount (5%) of chaparral affected in the Plan area is small, and this natural community is not considered to be rare in the region, permanent development associated with implementation of the Local Agencies' general plans under Alternative 1 would result in a less-than-significant impact. No mitigation is required.

CEQA Determination: Because the relative amount (5%) of chaparral affected in the Plan area is small, and this natural community is not considered to be rare in the region, permanent development associated with implementation of the Local Agencies' general plans under Alternative 1 would result in a less-than-significant impact. No mitigation is required.

Impact BIO-36: Effects on coniferous forest (NEPA: less than significant; CEQA: less than significant)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in effects on 9 acres (60%) of coniferous forest in the Plan Area.

Permanent development adjacent to coniferous forest could result in the introduction of invasive plant species that would affect species composition in this natural community.

Recurring maintenance activities within and adjacent to coniferous forest could result in the inadvertent introduction of invasive plant species, removal and trimming of vegetation for utility and transportation maintenance, ground disturbance associated with utility maintenance and the establishment of seasonal fire breaks, and the accidental release of vehicle oils and fuels, all of which could alter the species composition of this natural community.

NEPA Determination: The amount of coniferous forest affected in the Plan Area is small (9 acres), this natural community is common in the region, and coniferous forest is managed and protected in eastern Butte County in the Plumas National Forest. Therefore, this would be a less-than-significant impact. No mitigation is required.

CEQA Determination: The amount of coniferous forest affected in the Plan Area is small (9 acres), this natural community is common in the region, and coniferous forest is managed and protected in eastern Butte County in the Plumas National Forest. Therefore, this would be a less-than-significant impact. No mitigation is required.

Impact BIO-37: Effects on oak woodland and savanna natural communities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in impacts on 11,324 acres (12%) of oak woodland in the Plan Area.

Permanent development adjacent to oak woodland and savanna could result in the introduction of invasive plant species and alterations in local ground and surface waters that could affect species composition in these natural communities.

Recurring maintenance activities within and adjacent to oak woodland and savanna could result in the inadvertent introduction of invasive plant species, removal and trimming of trees for utility and transportation maintenance, ground disturbance associated with utility maintenance and the establishment of seasonal fire breaks, and the accidental release of vehicle oils and fuels, any of which could directly affect individual oak trees and could alter the species composition of these natural communities.

NEPA Determination: Although foothill oak woodlands are common in the state and region, past and current grazing activities have suppressed natural recruitment of oak trees; this change could result in the decline of these communities in the state and region. Consequently, the loss of 12% of the oak woodland and savanna in the Plan Area would be a significant and unavoidable impact.

CEQA Determination: Although foothill oak woodlands are common in the state and region, past and current grazing activities have suppressed natural recruitment of oak trees; this change could result in the decline of these communities in the state and region. Consequently, the loss of 12% of the oak woodland and savanna in the Plan Area would be a significant and unavoidable impact.

Impact BIO-38: Effects on grassland natural communities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in effects on 9,715 acres (10%) of grassland natural communities in the Plan Area: 7,776 acres (13%) of grasslands and 1,939 acres (6%) of grassland with vernal swale complex. The grasslands in the Plan Area also support a highly variable density of vernal pools.

Permanent development adjacent to grassland could result in the introduction of invasive plant species and alterations in local ground and surface waters that could affect species composition of these natural communities as well as vernal pools and seasonal wetlands within grasslands.

Recurring maintenance activities in and adjacent to grasslands could result in the inadvertent introduction of invasive plant species, ground disturbance associated with utility maintenance and the establishment of fire breaks that could alter surface and subsurface hydrology, and the accidental release of vehicle oils and fuels, any of which could alter the species composition of these natural communities and water quality in vernal pools and other seasonal wetlands found in grasslands.

Mitigation for these impacts would be developed and implemented on a project-specific basis.

NEPA Determination: Grasslands are generally not considered to be rare; however, vernal swale complexes and individual vernal pools within the Plan Area are considered sensitive natural communities. Consequently, the loss of these features due to permanent development associated

with implementation of the Local Agencies' general plans under Alternative 1 would be a significant and unavoidable impact.

CEQA Determination: Grasslands are generally not considered to be rare; however, vernal swale complexes and individual vernal pools within the Plan Area are considered sensitive natural communities. Consequently, the loss of these features due to permanent development associated with implementation of the Local Agencies' general plans under Alternative 1 would be a significant and unavoidable impact.

Impact BIO-39: Effects on riparian natural communities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in impacts on 1,413 acres (6%) of riparian natural communities in the Plan Area.

Permanent development adjacent to riparian habitat could result in the introduction of invasive plant species and alterations in local ground and surface waters that could affect species composition in these natural communities.

Recurring maintenance activities within and adjacent to riparian natural communities could result in the inadvertent introduction of invasive plant species, removal and trimming of trees for utility and transportation maintenance, ground disturbance associated with utility maintenance, and the accidental release of vehicle oils and fuels, any of which could directly affect riparian vegetation.

Mitigation for these impacts would be developed and implemented on a project-specific basis.

NEPA Determination: Riparian habitats in the state and region have become increasingly rare. Therefore, the loss of 6% of riparian natural communities within the Plan Area as a result of permanent development associated with implementation of the Local Agencies' general plans would be a significant and unavoidable impact.

CEQA Determination: Riparian habitats in the state and region have become increasingly rare. Therefore, the loss of 6% of riparian natural communities within the Plan Area as a result of permanent development associated with implementation of the Local Agencies' general plans would have a significant and unavoidable impact.

Impact BIO-40: Effects on wetland natural communities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in impacts on 93 acres (0.2%) of wetland natural communities within the Plan Area.

Permanent development adjacent to wetlands could result in alterations in local ground and surface waters and the introduction of pollutants that could adversely affect wetland function and values.

Recurring maintenance activities adjacent to wetland natural communities could result in the inadvertent introduction of invasive plant species, the accidental release of chemical pollutants into wetlands, and sedimentation resulting from ground disturbing activities, any of which could adversely affect wetland functions and values.

Mitigation for these impacts would be developed and implemented on a project-specific basis.

NEPA Determination: Wetlands natural communities within the state and region have become increasingly rare. Therefore, the loss of 93 acres of wetland natural communities within the Plan Area as a result of permanent development associated with implementation of the Local Agencies' general plans would be a significant and unavoidable impact.

CEQA Determination: Wetlands natural communities within the state and region have become increasingly rare. Therefore, the loss of 93 acres of wetland natural communities within the Plan Area as a result of permanent development associated with implementation of the Local Agencies' general plans would be a significant and unavoidable impact.

Impact BIO-41: Effects on aquatic natural communities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in impacts on 140 acres (1%) of aquatic natural communities and 52 ponds (11%) within the Plan Area.

Permanent development adjacent to aquatic natural communities could result in alterations in local ground and surface waters and the introduction of pollutants that could adversely affect aquatic function and values.

Recurring maintenance activities in and adjacent to aquatic natural communities could result in the accidental release of chemical pollutants into waters and sedimentation resulting from ground-disturbing activities; such releases could adversely affect aquatic functions and values.

Mitigation for these impacts would be developed and implemented on a project-specific basis.

NEPA Determination: Aquatic natural communities are rare and sensitive in the state and region. Therefore, the loss of 140 acres of aquatic communities and 52 ponds in the Plan Area as a result of permanent development associated with implementation of the Local Agencies' general plans would be a significant and unavoidable impact.

CEQA Determination: Aquatic natural communities are rare and sensitive in the state and region. Therefore, the loss of 140 acres of aquatic communities and 52 ponds in the Plan Area as a result of permanent development associated with implementation of the Local Agencies' general plans would be a significant and unavoidable impact.

Impact BIO-42: Effects on agricultural land cover for native wildlife (NEPA: less than significant; CEQA: less than significant)

Under Alternative 1, permanent development associated with implementation of the Local Agencies' general plans would result in the loss of 3,822 acres (3%) of agricultural lands used by native wildlife in the Plan Area.

Permanent development adjacent to agricultural lands could result in alterations in local ground and surface waters that could affect agricultural practices and the land's value for use by covered and other native wildlife species.

Recurring maintenance activities adjacent to agricultural lands could result in the inadvertent introduction of invasive plant species that could degrade the habitat value of agricultural crops for native wildlife species.

NEPA Determination: Agricultural lands within the Plan Area that provide habitat for native wildlife are relatively common in the region. Therefore, the conversion of 3% of these agricultural lands would constitute a less-than-significant impact. No mitigation is required.

CEQA Determination: Agricultural lands within the Plan Area that provide habitat for native wildlife are relatively common in the region. Therefore, the conversion of 3% of these agricultural lands would constitute a less-than-significant impact. No mitigation is required.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Covered activities relevant to biological resources are generally those that involve construction or those that involve earthmoving activities or those that would permanently remove habitat (i.e., permanent development projects). Covered activities that would involve construction and removing habitat are all development activities consistent with the Local Agencies' general plans, state and local transportation projects, and water district canal installation. Certain restoration actions under the conservation strategy (CM4–CM11, CM14, and Activities to Improve Urban Stormwater Quality) would involve construction. Most covered activities (mainly permanent development projects) would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operations-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics, including small projects or infill projects.

Impact BIO-1: Effects on tricolored blackbird (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 48,411 acres (18%) of modeled habitat for tricolored blackbird and the protection of three colonies (CM1 and SPEC1.2). Habitat would be protected in at least 40-acre patches. Protected habitat would be a mosaic of grassland, emergent wetland, managed wetland, and agricultural land that include patches of suitable nesting habitat. Objective SPEC1.2 calls for the protection of three tricolored blackbird nesting sites that have been active within the previous 5 years. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands would convert up to 178 acres of modeled tricolored blackbird habitat into riparian habitat.

Covered activities on conservation lands could also indirectly affect tricolored blackbird during implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter tricolored blackbird behavior.

Alternative 2 would result in the permanent loss of at most 12,617 acres—or roughly 5%—of the modeled tricolored blackbird habitat in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. Permanent development would avoid directly affecting known nesting colonies.

Permanent development within 500 feet of tricolored blackbird habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

As specified in Table 5-25 of the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects; AMM3 provides for designing projects to avoid take and minimize effects on nest locations. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites within and adjacent to permanent development projects.

Recurring maintenance activities within and outside UPAs may periodically affect (through noise and visual disturbance) tricolored blackbird. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting tricolored blackbirds, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the species distribution outside of the Plan Area, amount of modeled habitat affected (5%) relative to the amount protected (18%), the commitment to avoid removing habitat at nest locations associated with permanent development projects that have been active within the previous 5 years, the protection of at least three nest sites, relevant AMMs to be implemented during permanent development projects, and long-term management of 48,411 acres of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the tricolored blackbird.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled tricolored blackbird habitat in the Plan Area. Covered activities on conservation lands would convert modeled tricolored blackbird habitat into riparian habitat and would indirectly affect the species through visual and noise disturbances. Similarly, recurring maintenance activities within and outside UPAs could periodically indirectly affect the species. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of tricolored blackbird habitat and three colonies of the species and management and enhancement of protected habitat in the Plan Area. AMMs would provide for nest identification in and near permanent development projects and avoidance of take and minimization of effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled tricolored blackbird habitat in the Plan Area. Covered activities on conservation lands would convert modeled tricolored blackbird habitat into riparian habitat, and would also indirectly affect the species through visual and noise disturbances. Similarly, recurring maintenance activities within and outside UPAs could periodically indirectly affect the species. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of tricolored blackbird habitat and three colonies of the species and management and enhancement of protected habitat in the Plan

Area. AMMs would provide for nest identification in and near permanent development projects and avoidance of take and minimization of effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-2: Effects on yellow-breasted chat (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 3,020 acres (42%) of modeled nesting habitat for yellow-breasted chat in the Plan Area (CM1). To compensate for effects on habitat, the conservation strategy would entail restoration of up to 144 acres of habitat suitable for yellow-breasted chat. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands could also indirectly affect yellow-breasted chat during implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter yellow-breasted chat behavior.

Alternative 2 would result in the permanent loss of at most 278 acres—or roughly 4%—of the modeled yellow-breasted chat habitat in the Plan Area. These losses would result from permanent development projects within and outside the UPAs.

Permanent development within 500 feet of yellow-breasted chat habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within and outside UPAs may periodically affect (through noise and visual disturbance) yellow-breasted chat. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting yellow-breasted chat, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the amount of impacts on modeled habitat (4%) relative to the amount protected (42%) in the Plan Area, the commitment to restoration, and long-term management of 3,164 acres of yellow-breasted chat habitat in the Plan Area, Alternative 2 would not significantly impact the yellow-breasted chat.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled yellow-breasted chat habitat in the Plan Area. Covered activities on conservation lands and recurring maintenance activities within and outside UPAs would indirectly affect the species through visual and noise disturbances. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of nesting habitat, restoration of habitat suitable for yellow-breasted chat, and management and enhancement of protected habitat in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled yellow-breasted chat habitat in the Plan Area. Covered activities on conservation lands and recurring maintenance activities within and outside UPAs would indirectly affect the species through visual and noise disturbances. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these

impacts through the protection of nesting habitat, restoration of habitat suitable for yellow-breasted chat, and management and enhancement of protected habitat in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-3: Effects on bank swallow (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of natural communities in floodplain locations such that at least 20 linear miles of potentially erodible bank along Big Chico and Butte Creeks potentially supporting bank swallow nesting habitat are protected (CM1). In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area. Under CM6, permanent agreements will be sought to protect habitat for bank swallow and protect existing colonies from adverse effects of management actions in these habitats.

Covered activities on conservation lands to restore riparian habitat would not result in the loss of modeled bank swallow habitat; however, temporary disturbances could affect bank swallow foraging and nesting behavior if riparian restoration activities are undertaken within 500 feet of nesting and foraging habitat.

Development projects in the Plan Area would not result in a permanent or temporary loss of bank swallow habitat.

Permanent development within 500 feet of modeled habitat for bank swallow can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

In the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects; AMM3 provides for designing projects to avoid take and minimize effects on nest locations. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects outside areas with active nests.

Recurring maintenance activities within and outside UPAs may periodically indirectly (through noise and visual disturbances) affect bank swallows.

Considering the lack of permanent impacts on bank swallow habitat, the amount of protection, relevant AMMs to be implemented during permanent development projects, and long-term management of 20 miles of potential habitat in the Plan Area, Alternative 2 would not significantly impact the bank swallow.

NEPA Determination: Although permanent development projects in the Plan Area and covered activities on conservation lands would not result in the permanent loss of bank swallow habitat, temporary disturbances on conservation lands and permanent development within 500 feet of nesting and foraging habitat could affect foraging and nesting behavior. In addition, recurring maintenance activities within and outside the UPAs could periodically affect the species. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection, management, and enhancement of bank swallow habitat in the Plan Area. Further, AMMs would provide for identification of nests in and near permanent development projects and ensure project designs that would avoid take and minimize effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Although permanent development projects in the Plan Area and covered activities on conservation lands would not result in the permanent loss of bank swallow habitat, temporary disturbances on conservation lands and permanent development within 500 feet of nesting and foraging habitat could affect foraging and nesting behavior. In addition, recurring maintenance activities within and outside the UPAs could periodically affect the species. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection, management, and enhancement of bank swallow habitat in the Plan Area. Further, AMMs would provide for identification of nests in and near permanent development projects and ensure project designs that would avoid take and minimize effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-4: Effects on western burrowing owl (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 36,388 acres (22%) of modeled habitat for western burrowing owl (CM1). In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area. Objective SPEC4.2 calls for the enhancement or maintenance of functions of protected modeled western burrowing owl habitat to maintain or increase the abundance of native fossorial rodents.

Covered activities on conservation lands to restore riparian habitat would convert up to 178 acres of modeled habitat for western burrowing owl.

Covered activities on conservation lands could also indirectly affect western burrowing owls during implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter burrowing owl behavior.

Alternative 2 would result in the permanent loss of at most 14,496 acres—or roughly 9%—of the modeled habitat for western burrowing owl in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. Permanent development would affect the location of one CNDDDB record for western burrowing owl. As specified in Table 5-25 of the BRCP, AMM9 calls for the development of exclusion zones around nesting birds within or adjacent to permanent development project footprints. AMM22 calls for development of an exclusion plan to passively relocate wintering burrowing owls identified in permanent development project areas.

Permanent development within 500 feet of western burrowing owl habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

In the BRCP, AMM2 would identify occupied western burrowing owl burrows within permanent development footprints and temporary work areas. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects outside areas with occupied burrows.

Recurring maintenance activities within and outside UPAs, may periodically affect (primarily through noise and visual disturbance) western burrowing owls. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting western burrowing

owls, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the species' broad distribution beyond the Plan Area, the amount of modeled habitat affected (9%) relative to the amount of protection (22%) in the Plan Area, relevant AMMs to be implemented during permanent development projects, and long-term management of 36,388 acres of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the western burrowing owl.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled habitat for western burrowing owl and would affect the location of one CNDDDB record for the species in the Plan Area. Recurring maintenance activities within and outside UPAs, as well as covered activities on conservation lands, could periodically affect the species and could include impacts on nesting western burrowing owls. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection, management, and enhancement of western burrowing owl habitat in the Plan Area. In addition, AMMs would provide for identification of occupied western burrowing owl burrows and passive relocation of wintering burrowing owls in permanent development project footprints. Therefore, this impact is less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled habitat for western burrowing owl and would affect the location of one CNDDDB record for the species in the Plan Area. Recurring maintenance activities within and outside UPAs, as well as covered activities on conservation lands, could periodically affect the species and could include impacts on nesting western burrowing owls. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection, management, and enhancement of western burrowing owl habitat in the Plan Area. In addition, AMMs would provide for identification of occupied western burrowing owl burrows and passive relocation of wintering burrowing owls in permanent development project footprints. Therefore, this impact is less than significant. No mitigation is required.

Impact BIO-5: Effects on western yellow-billed cuckoo (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 1,785 acres (32%) of modeled nesting habitat for western yellow-billed cuckoo in the Plan Area (CM1). In general, the BRCP's riparian protection of cottonwood riparian forest and valley oak riparian forest would be in minimum patch sizes of 25 acres (BRCP Table 5-16); this protection would maintain and expand on potential cuckoo habitat as well as maintain long-term habitat connectivity. To compensate for effects on habitat, the conservation strategy would entail restoration of up to 50 acres of habitat suitable for western yellow-billed cuckoo. Objective SPEC2.5 would result in the protection of currently unknown and unprotected western-yellow billed cuckoo nest sites within 5 years of being discovered. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands could indirectly affect western yellow-billed cuckoo during implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter western yellow-billed cuckoo behavior.

Alternative 2 would result in the permanent loss of at most 50 acres—or roughly 1%—of the modeled habitat for western yellow-billed cuckoo in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. No locations of recorded western-yellow billed cuckoo would be removed by permanent development projects.

Permanent development within 1,300 feet of western yellow-billed cuckoo habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

As specified in Table 5-25 of the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects; AMM3 provides for designing projects to avoid take and minimize effects on nest locations. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites within and adjacent to permanent development projects.

Recurring maintenance activities within and outside UPAs may periodically affect (through noise and visual disturbance) western yellow-billed cuckoo. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting yellow-billed cuckoos, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the amount of modeled habitat affected (1%) relative to the amount of protected habitat (32%), the commitment to restoration, the protection of all new nest sites, relevant AMMs to be implemented during permanent development projects, and long-term management of at least 1,785 acres of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the yellow-billed cuckoo.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled habitat for the yellow-billed cuckoo in the Plan Area. Covered activities on conservation lands and permanent development within 1,300 feet of western yellow-billed cuckoo habitat could indirectly affect the species through visual and noise disturbances. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of nesting habitat and restoration of habitat suitable for western yellow-billed cuckoo, as well as through management and enhancement protected habitat in the Plan Area. AMMs would provide for nest identification in and near permanent development projects and would help avoidance of take and minimize effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled habitat for the yellow-billed cuckoo in the Plan Area. Covered activities on conservation lands and permanent development within 1,300 feet of western yellow-billed cuckoo habitat could indirectly affect the species through visual and noise disturbances. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of nesting habitat and restoration of habitat suitable for western yellow-billed cuckoo, as well as through management and enhancement protected habitat in the Plan Area. AMMs would provide for nest identification in and near permanent development projects and would help avoidance of take and minimize effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-6: Effects on greater sandhill crane (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 21,660 acres (15%) of modeled winter roosting and foraging habitat for greater sandhill crane and 500 acres (18%) of traditional upland use areas (CM1). In addition, the BRCP calls for the creation and management of 160 acres of seasonal managed wetland as winter roosting habitat for greater sandhill crane (SPEC5.2 and CM7). BRCP conservation measures CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands to restore emergent wetland habitat may alter the composition and structure of up to 2,000 acres of existing ricelands, which can be used as foraging habitat by wintering cranes.

Covered activities on conservation lands could also indirectly affect greater sandhill crane during the implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter greater sandhill crane behavior.

Alternative 2 would result in the permanent loss of up to 1,764 acres—or roughly 1%—of the modeled habitat for greater sandhill crane in the Plan Area: 1,627 acres (1%) of winter roosting and foraging habitat and 137 acres (5%) of traditional upland use areas. These losses would result from permanent development projects within and outside the UPAs. Permanent development projects that include new transmission lines could result in take of greater sandhill cranes because cranes are vulnerable to power line collisions during periods of fog. The BRCP includes AMM23, which states that wire markers will be installed to increase visibility on new or modified transmission lines in greater sandhill crane habitat.

Permanent development within 1,300 feet of greater sandhill crane habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within and outside UPAs may periodically indirectly (through noise and visual disturbance) affect greater sandhill crane.

Considering the amount of winter roosting and traditional upland use areas affected (1% and 5%, respectively) relative to the amount of protection (15% and 18%, respectively) in the Plan Area; the commitment to restoration; relevant AMMs to be implemented during permanent development projects including AMM3, which calls for avoiding winter roost sites occupied within the previous 5 years (see BRCP Table 5-23); the installation of wire markers on new and modified transmission lines in modeled habitat (AMM23); and long-term management of 22,160 acres (15%) of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the greater sandhill crane.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of winter roosting and foraging habitat for greater sandhill crane, and traditional upland use areas in the Plan Area. Permanent development projects that include new transmission lines could also result in take of greater sandhill cranes. Further, recurring maintenance activities could periodically indirectly affect greater sandhill crane. Implementation of covered activities on conservation lands could indirectly affect greater sandhill crane through visual and noise disturbances. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of winter roosting and foraging habitat and upland use areas, as well as through the management

and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of winter roosting and foraging habitat for greater sandhill crane, and traditional upland use areas in the Plan Area. Permanent development projects that include new transmission lines could also result in take of greater sandhill cranes. Further, recurring maintenance activities could periodically indirectly affect greater sandhill crane. Implementation of covered activities on conservation lands could indirectly affect greater sandhill crane through visual and noise disturbances. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of winter roosting and foraging habitat and upland use areas, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-7: Effects on California black rail (NEPA: less than significant; CEQA: less than significant)

As stated in Objective SPEC6.2, implementation of the BRCP would ensure that no occupied California black rail habitat is removed. Implementation of CM1 would result in at least five patches of California black rail habitat protected within the species' known Plan Area range that are either occupied by rails or are adjacent to occupied habitat. In addition, CM6 provides for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands could affect California black rail behavior if restoration and enhancement activities occur within 500 feet of occupied habitat.

Development projects in the Plan Area would not result in a permanent or temporary loss of occupied California black rail habitat.

Permanent development within 500 feet of occupied California black rail habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

As specified in Table 5-25 of the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects; AMM3 provides for designing projects to avoid take and minimize effects on nest locations as specified in Table 5-23 of the BRCP. AMM5 provides for relocating staging and temporary work associated with permanent development areas outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites within and adjacent to permanent development projects.

Recurring maintenance activities within and outside UPAs may periodically affect (through noise and visual disturbance) California black rails if they occur in the vicinity. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting California black

rails, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the BRCP's commitment to protect five patches of occupied habitat, its commitment to avoid removing occupied habitat, and relevant AMMs to be implemented during permanent development projects, Alternative 2 would not significantly impact California black rail.

NEPA Determination: Covered activities on conservation lands and activities associated with permanent development could affect California black rail behavior if it occurred within 500 feet of occupied habitat. In addition, recurring maintenance activities within and outside the UPAs could result in impacts on nesting California black rails and thus reduced reproductive success. However, implementation of the BRCP under Alternative 2 would result in the protection of five patches of occupied habitat and would ensure that there is no loss of occupied habitat for the California black rail. Further, AMMs implemented under this alternative would help minimize potential impacts on the species. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Covered activities on conservation lands and activities associated with permanent development could affect California black rail behavior if it occurred within 500 feet of occupied habitat. In addition, recurring maintenance activities within and outside the UPAs could result in impacts on nesting California black rails and thus reduced reproductive success. However, implementation of the BRCP under Alternative 2 would result in the protection of five patches of occupied habitat and would ensure that there is no loss of occupied habitat for the California black rail. Further, AMMs implemented under this alternative would help minimize potential impacts on the species. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-8: Effects on American peregrine falcon (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 29,192 acres of modeled habitat (CM1): 29,157 acres (15%) of protected foraging habitat and 35 acres (55%) of protected nesting habitat. Objective SPEC7.2 also calls for the protection of all peregrine nest sites within 5 years of being discovered. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

The BRCP's restoration of riparian habitats would result in the conversion of 614 acres of modeled foraging habitat for peregrine falcon; however, this effect would be minimal compared to the 194,860 acres of foraging habitat in the Plan Area. Enhancement and management actions could result in indirect effects, such as noise and visual disturbances, on American peregrine falcons.

Alternative 2 would result in the permanent loss of up to 3,759 acres (2%) of the modeled habitat for American peregrine falcon in the Plan Area. These impacts would result from permanent development projects both within and outside the UPAs. The BRCP would avoid affecting known nest sites from permanent development projects that have been active within the previous 5 years.

Permanent disturbance within 500 feet of modeled habitat for American peregrine falcon could disrupt normal behaviors, including nesting, through noise and visual disturbances.

As specified in Table 5-25 of the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects and AMM3 provides for designing projects to avoid take and minimize effects on nest locations as specified in Table 5-23 of the BRCP. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects

outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites in and adjacent to permanent development projects.

Recurring maintenance activities within and outside UPAs may periodically affect (through noise and visual disturbance) American peregrine falcons. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting peregrine falcons, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the amount modeled foraging habitat affected (2%) relative to the amount protected (15%); the avoidance of effects on nesting habitat and the protection of 55% of this habitat in the Plan Area; relevant AMMs to be implemented during permanent development projects; and long-term management of covered species habitats in the Plan Area, Alternative 2 would not significantly impact the American peregrine falcon.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the loss of modeled habitat for peregrine falcon in the Plan Area. Recurring maintenance activities could result in impacts on nesting peregrine falcons and thus reduced reproductive success. However, implementation of the BRCP conservation strategy under Alternative 2 would help offset these impacts through the protection of foraging and nesting habitat, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the loss of modeled habitat for peregrine falcon in the Plan Area. Recurring maintenance activities could result in impacts on nesting peregrine falcons and thus reduced reproductive success. However, implementation of the BRCP conservation strategy under Alternative 2 would help offset these impacts through the protection of foraging and nesting habitat, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-9: Effects on Swainson's hawk (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 4,325 acres (25%) of modeled nesting habitat (riparian) for Swainson's hawk, 800 acres (31%) of modeled nesting and foraging habitat (blue oak savanna), and 17,880 acres (14%) of foraging habitat (CM1). Riparian habitat restoration (CM4) would restore 178 acres of habitat that in the future would provide suitable nesting and roosting habitat. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands would convert up to 178 acres of modeled foraging habitat for Swainson's hawk into riparian habitat that could in the future support nesting habitat. An additional 621 acres of modeled foraging habitat could be removed if all of the BRCP restored giant garter snake habitat and emergent wetland restoration is located on managed wetlands. This impact

is expected to be less because a portion of the restored giant garter snake habitat would include uplands, which would support Swainson's hawk foraging habitat.

Covered activities on conservation lands could also indirectly affect Swainson's hawk during the implementation of habitat restoration, enhancement, and management actions that create visual and noise disturbances that may alter Swainson's hawk behavior.

Alternative 2 would result in the permanent loss of at most 11,312 acres—or roughly 7%—of the modeled Swainson's hawk habitat in the Plan Area: 315 acres (2%) of modeled nesting habitat (riparian types), 557 acres (22%) of modeled nesting and foraging habitat (blue oak savanna), and 10,411 acres (8%) of foraging habitat (cropland, irrigated pasture, grassland, and managed wetland). These losses would result from permanent development projects within and outside the UPAs. No known Swainson's hawk nest sites would be permanently affected.

Permanent development within 1,300 feet of Swainson's hawk nesting habitat and within 500 feet of foraging habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

In the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects; AMM3 provides for designing projects to avoid take and minimize effects on nest locations. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites within and adjacent to permanent development projects as specified in Table 5-25 of the BRCP.

Recurring maintenance activities within and outside UPAs may periodically indirectly (through noise and visual disturbance) affect Swainson's hawks, including nesting Swainson's hawks. AMM30 would avoid affecting Swainson's hawks that may be nesting in trees planned for trimming or removal; however other recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management (other than trees), pipeline maintenance, and flood control maintenance, could result in impacts on nesting Swainson's hawks, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the amount of modeled habitat affected (7%) relative to the amount protected (15%) in the Plan Area, the commitment to restoration, relevant AMMs to be implemented during permanent development projects, AMM30 for recurring maintenance activities, and long-term management of 23,183 acres of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the Swainson's hawk.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled nesting and foraging habitat for Swainson's hawk in the Plan Area. Recurring maintenance activities within and outside UPAs, as well as covered activities on conservation lands, could periodically affect the species and could include impacts on nesting Swainson's hawk. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of foraging habitat and the protection and restoration of suitable nesting and roosting habitat. Further, protected habitat in the Plan Area would be managed and enhanced, AMMs would provide for nest identification in and near permanent development projects and help avoid take and minimize effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of modeled nesting and foraging habitat for Swainson's hawk in the Plan Area. Recurring maintenance activities within and outside UPAs, as well as covered activities on conservation lands, could periodically affect the species, and could include impacts on nesting Swainson's hawk. However, implementation of the BRCP conservation strategy and conservation measures under Alternative 2 would help offset these impacts through the protection of foraging habitat and the protection and restoration of suitable nesting and roosting habitat. Further, protected habitat in the Plan Area would be managed and enhanced, AMMs would provide for nest identification in and near permanent development projects and help avoid take and minimize effects on nest locations. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-10: Effects on white-tailed kite (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 5,725 acres (18%) of modeled nesting habitat for white-tailed kite, 24,880 acres (14%) of year-round foraging habitat, and 25,636 acres of breeding season foraging habitat (27%) (note the year-round and breeding season foraging habitats largely overlap) (CM1). Riparian habitat restoration (CM4) would restore 178 acres habitat that in the future would provide suitable white-tailed kite nesting and roosting habitat. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands would convert up to 579 acres of modeled foraging habitat for white-tailed kite into riparian habitat that could in the future support nesting habitat. Up to 34 acres of foraging habitat would be converted to willow scrub, which is not modeled foraging habitat. An additional 2,121 acres of modeled foraging habitat could be removed if all the BRCP giant garter snake habitat and emergent wetland restoration is located on managed wetlands, ricelands, or irrigated agricultural land. This impact is expected to be less than this amount because a portion of the restored giant garter snake habitat would include uplands that support foraging habitat for white-tailed kite.

Covered activities on conservation lands could also indirectly affect white-tailed kites during the implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that could alter white-tailed kite behavior.

Alternative 2 would result in the permanent loss of at most 16,183 acres—or roughly 5%—of the modeled white-tailed kite habitat in the Plan Area: 2,598 acres (8%) of modeled nesting habitat, and 6,599 acres (8%) of year-round foraging habitat and 6,986 acres of breeding season foraging habitat (7%) (note the year round and breeding season habitat largely overlap). These losses would result from permanent development projects within and outside the UPAs. Although no white-tailed kite nests that are included in the CNDDDB would be affected, unreported nests or new nests may be affected.

Permanent development within 1,300 feet of white-tailed kite nesting habitat and within 500 feet of foraging habitat can cause alterations in behavior through noise and visual disturbance associated with construction and normal ongoing activities.

In the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects, and AMM3 provides for designing projects to avoid take and minimize effects on nest locations as specified in Table 5-23 of the BRCP. AMM5 provides for relocating staging and

temporary work areas associated with permanent development projects outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites within and adjacent to permanent development projects as specified in Table 5-25 of the BRCP.

Recurring maintenance activities within and outside UPAs may periodically indirectly (through noise and visual disturbance) affect white-tailed kites. AMM30 would avoid affecting white-tailed kites that may be nesting in trees planned for trimming or removal; however other recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management (other than trees), pipeline maintenance, and flood control maintenance, could result in impacts on nesting white-tailed kites, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the species' distribution outside of the Plan Area; the amount of nesting and foraging (year-round and breeding) habitats affected (8%, 8%, and 7%, respectively) relative to the amount of protection (18%, 14 and 27%, respectively) in the Plan Area; restoration and enhancement of modeled habitats; relevant AMMs to be implemented during permanent development projects; and long-term management of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the white-tailed kite.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of nesting habitat and seasonal and year-round foraging habitat for white-tailed kites due to permanent development, as well as covered activities on conservation lands, in the Plan Area. Further, recurring maintenance activities could result in impacts on nesting white-tailed kites and, thus, reduced reproductive success. However, implementation of the BRCP conservation strategy under Alternative 2 would help offset these impacts through the protection of seasonal and breeding season foraging habitat and nesting habitat, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Accordingly, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of nesting habitat and seasonal and year-round foraging habitat for white-tailed kites due to permanent development, as well as covered activities on conservation lands, in the Plan Area. Further, recurring maintenance activities could result in impacts on nesting white-tailed kites and, thus, reduced reproductive success. However, implementation of the BRCP conservation strategy under Alternative 2 would help offset these impacts through the protection of seasonal and breeding season foraging habitat and nesting habitat, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Accordingly, this impact would be less than significant. No mitigation is required.

Impact BIO-11: Effects on bald eagle (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 4,435 acres (19%) of modeled bald eagle nesting habitat and 21,195 acres (12%) of seasonal foraging habitat (CM1). Riparian habitat restoration (CM4) would restore trees that in the future would provide suitable bald eagle nesting and roosting habitat. The implementation of fish habitat improvements under CM9 would support a primary food source (salmonids) for bald eagles. In addition, CM5 and

CM6 provide for the management and enhancement of protected habitat in the Plan Area. As stated in Section 5.8 of the BRCP, active nest sites in BRCP conservation lands would be monitored to assess nesting success.

Covered activities on conservation lands would convert up to 579 acres of modeled seasonal foraging habitat for bald eagle into riparian habitat that could in the future support bald eagle nesting habitat. Emergent wetland restoration and giant garter snake habitat restoration could convert up to 121 acres and up to 2,000 acres, respectively, of bald eagle seasonal foraging habitat into habitat that is not suitable for foraging. The actual amount of seasonal foraging habitat converted into giant garter snake habitat would likely be less than this amount, because portions of this acreage will have open water and uplands that could still be used for foraging.

Covered activities on conservation lands could also indirectly affect bald eagles during the implementation of habitat restoration, enhancement, and management actions that create visual and noise disturbances that may alter bald eagle behavior.

Alternative 2 would result in the permanent loss of at most 6,277—or roughly 3%—of the modeled bald eagle habitat in the Plan Area: 2,708 acres (11%) of modeled nesting habitat, though no known nest sites would be affected, and 3,570 acres (2%) of seasonal foraging habitat. These losses would result from permanent development projects within and outside the UPAs.

Permanent development within 1,300 feet of bald eagle nesting habitat and within 500 feet of foraging habitat can cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

In the BRCP, AMM1 and AMM2 provide for the identification of nests in and near permanent development projects, and AMM3 provides for designing projects to avoid take and minimize effects on nest locations as specified in Table 5-23 of the BRCP. AMM5 provides for relocating staging and temporary work areas associated with permanent development projects outside areas with active nests. AMM9 provides for the establishment of exclusion zones around active nest sites within and adjacent to permanent development projects as specified in Table 5-25 of the BRCP.

Recurring maintenance activities within and outside UPAs, may periodically indirectly (through noise and visual disturbance) affect bald eagles. Recurring maintenance activities, such as reconductoring of electrical distribution lines, vegetation management, pipeline maintenance, and flood control maintenance, could result in impacts on nesting bald eagles, which could include harm or mortality to eggs and young from nest abandonment, and reduced reproductive success for adults.

Considering the species' broad distribution beyond the Plan Area; the amount of nesting and seasonal foraging habitat affected (11% and 2%, respectively) relative to the amount of protection of these habitats (19% and 12%, respectively) in the Plan Area; the restoration and enhancement of riparian habitat; relevant AMMs to be implemented during permanent development projects; and long-term management of 25,630 acres (12%) of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the bald eagle.

NEPA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of nesting and seasonal foraging habitat for bald eagles due to permanent development as well as covered activities on conservation lands in the Plan Area. Further, recurring maintenance activities could result in impacts on nesting bald eagles and, thus, reduced reproductive success. However, implementation of the BRCP conservation strategy under

Alternative 2 would help offset these impacts through the protection of seasonal foraging and nesting habitat, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Permanent development projects within and outside the UPAs would result in the permanent loss of nesting and seasonal foraging habitat for bald eagles due to permanent development as well as covered activities on conservation lands in the Plan Area. Further, recurring maintenance activities could result in impacts on nesting bald eagles and, thus, reduced reproductive success. However, implementation of the BRCP conservation strategy under Alternative 2 would help offset these impacts through the protection of seasonal foraging and nesting habitat, as well as through the management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects to help minimize direct and indirect impacts due to development projects. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-12: Effects on giant garter snake (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 27,547 acres of modeled habitat (CM1) and the restoration of 500 acres of giant garter snake habitat (CM4). The protected habitat includes 23,182 acres of riceland, 585 acres of managed and emergent wetland and willow scrub, and 3,780 acres of adjoining cropland. CM3 will help identify opportunities for improving wildlife movement through the landscape and across roads, railroads, and utility corridors. In addition, CM56 and CM6 provide for the management and enhancement of protected habitat in the Plan Area. The BRCP also includes Objective SPEC9.3, which calls for the protection of a north-south corridor at least 0.6 mile wide along the west boundary of the Plan Area consisting of riparian, wetland, aquatic, and agricultural natural communities. This objective is designed to maintain connectivity between occupied patches of habitat (see BRCP Figure 5-4); however, there are no specifications as to what agricultural lands would be within this corridor and whether these areas would include connected canals and ditches; moreover, it is unlikely that riparian habitat would benefit movement of giant garter snakes because they typically avoid this habitat.

The BRCP's restoration, enhancement, and management actions could result in injury or mortality of giant garter snakes and temporarily reduce the function of those rielands and managed wetlands converted to emergent wetlands.

Alternative 2 would result in the permanent loss of up to 18 miles of movement habitat (4%) and 3,194 acres (2%) of other giant garter snake modeled habitat within the Plan Area. These impacts would result from permanent development projects both within and outside the UPAs. Development activities could also result in injury or mortality of giant garter snakes. Permanent development projects would affect two locations of giant garter snake recorded in the CNDDDB (2013a), representing 7% of the records in the Plan Area.

Permanent disturbance within 500 feet of modeled habitat could adversely affect giant garter snake through hydrologic alteration of aquatic habitat, water pollution, and the introduction of potential predators (cats, dogs, nonnative fish, and bullfrogs).

Recurring maintenance activities within and outside UPAs, such as transportation facility maintenance, utility service facilities maintenance, water and irrigation canal maintenance, and vegetation management, may periodically directly and indirectly affect giant garter snake. Effects of water and irrigation canal maintenance will be minimized through implementation of AMM30 from the BRCP. This AMM sets specific limits for bank clearing during each maintenance year to 80% of the linear distance along one side of the bank per year and no more than 20% of the linear distance if both banks are cleared. This activity would involve the removal of vegetation, debris, and sediment from canals and ditches as well as the re-sloping of banks that are comprised of heavy clay soils that are subject to collapses if both sides are not maintained during the same year. As mentioned above, in these cases only 20% of the linear distance of banks in the Plan Area would be re-sloped in a given year. This type of canal and ditch maintenance can only occur when the canals are not in service, which is typically from mid-January through April. These activities could result in the mortality and injury of giant garter snakes that may be inactive and occupying burrows or other cover on canal and ditch banks at this time (the snakes inactive periods is generally early October to late April).

Considering the impacts on modeled habitat (2%) relative to the amount of protection (16%) in the Plan Area; the commitment to restoration; relevant AMMs to be implemented during permanent development activities and recurring channel maintenance (AMM30); and long-term management of 28,047 acres (17%) giant garter snake habitat in the Plan Area, Alternative 2 would not significantly impact the giant garter snake.

NEPA Determination: Implementation of permanent development projects under Alternative 2 would result in the loss of up to 18 miles of movement habitat and 3,194 acres of other modeled giant garter snake habitat in the Plan Area. Development and recurring maintenance activities, as well as BRCP's restoration, enhancement, and management actions, could also result in injury or mortality of giant garter snakes and habitat disruption. However, the BRCP conservation strategy would result in the protection and long-term management of 27,547 acres of modeled habitat and the restoration of 500 acres of giant garter snake habitat in the Plan Area. Additionally, relevant AMMs to be would be implemented during permanent development activities and recurring channel maintenance to help minimize impacts on the species. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of permanent development projects under Alternative 2 would result in the loss of up to 18 miles of movement habitat and 3,194 acres of other modeled giant garter snake habitat in the Plan Area. Development and recurring maintenance activities, as well as BRCP's restoration, enhancement, and management actions, could also result in injury or mortality of giant garter snakes and habitat disruption. However, the BRCP conservation strategy would result in the protection and long-term management of 27,547 acres of modeled habitat and the restoration of 500 acres of giant garter snake habitat in the Plan Area. Additionally, relevant AMMs to be would be implemented during permanent development activities and recurring channel maintenance to help minimize impacts on the species. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-13: Effects on Blainville's horned lizard (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of at least 5 patches of occupied Blainville's horned lizard habitat. Protection and enhancement of grasslands, oak woodland and savanna, and riparian natural communities are expected to maintain the existing distribution and abundance of Blainville's horned lizard in the Plan Area (CM1). In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

The BRCP's restoration, enhancement, and management actions could result in injury or mortality of Blainville's horned lizards through operation of equipment in their habitat. Alternative 2 could result in the permanent loss of habitat from development in the Plan Area and/or direct mortality of Blainville's horned lizards through operation of equipment in their habitat. The BRCP did not develop a habitat model for this species because it was determined that there was insufficient information regarding the distribution of the physical attributes that support the species in the Plan Area (e.g., gravelly sandy substrates). Therefore, no acreages of permanent or indirect impacts are known at this time.

Recurring maintenance activities within and outside UPAs, such as transportation facility maintenance, utility service facilities maintenance, and vegetation management, may periodically directly and indirectly affect Blainville's horned lizard.

Considering the amount of protection; relevant AMMs to be implemented during permanent development projects; and long-term management of riparian habitats in the Plan Area, Alternative 2 would not significantly impact the Blainville's horned lizard.

NEPA Determination: Implementation of Alternative 2 could result in the permanent loss of habitat and direct mortality of Blainville's horned lizards. Implementation of the BRCP conservation strategy would result in the protection of at least five patches of occupied Blainville's horned lizard habitat, as well as the protection and enhancement of grasslands, oak woodland and savanna, and riparian natural communities, which would benefit the species. Additionally, implementation of relevant AMMs during permanent development projects would help minimize direct and indirect impacts on Blainville's horned lizard. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 could result in the permanent loss of habitat and direct mortality of Blainville's horned lizards. Implementation of the BRCP conservation strategy would result in the protection of at least five patches of occupied Blainville's horned lizard habitat, as well as the protection and enhancement of grasslands, oak woodland and savanna, and riparian natural communities, which would benefit the species. Additionally, implementation of relevant AMMs during permanent development projects would help minimize direct and indirect impacts on Blainville's horned lizard. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-14: Effects on western pond turtle (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 10,965 acres (13%) of modeled habitat for western pond turtle in the Plan Area, the protection of 20 linear miles (18%) of stream habitat, and the protection of 43 ponds identified as suitable for western pond

turtle (21%) (CM1). In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

The BRCP's restoration, enhancement, and management actions could result in inadvertent mortality, the release of contaminants (e.g., fuels, lubricants) into aquatic habitat that could affect survivorship, and erosion that could affect water quality in aquatic habitat.

Alternative 2 would result in the permanent loss of 24 potential breeding ponds (12%), 5 linear miles of stream habitat (5%), and 4,606 acres (5%) of modeled habitat for western pond turtle in the Plan Area. This loss would result from permanent development projects within and outside the UPAs. Covered activities could also result in injury or mortality of western pond turtles and the fragmentation of habitat. No known locations of western pond turtle listed in the CNDDDB (2013a) would be affected by permanent development; however, unreported populations may be affected. Permanent development within 500 feet of modeled habitat could indirectly affect the species through increased noise and visual disturbances, introduced predators, increased traffic on nearby roads, and water pollution.

Considering the wide distribution of this species beyond the Plan Area; impacts on modeled habitat, miles of stream habitat, and ponds (5%, 5%, and 12%, respectively) relative to the amount of protection (13%, 18%, and 21%, respectively); relevant AMMs to be implemented during permanent development projects; and long-term management of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the western pond turtle.

NEPA Determination: There would be a loss of 24 potential breeding ponds, 5 linear miles of stream habitat, and 4,606 acres of modeled western pond turtle habitat as part of the permanent development that would occur in the Plan Area under Alternative 2. The BRCP's restoration, enhancement, and management actions could result in direct and indirect impacts on western pond turtle. Implementation of the BRCP conservation strategy would result in the protection of 10,965 acres of modeled habitat for western pond turtle in the Plan Area, the protection of stream habitat, and the protection of 43 ponds, and would also provide for the management and enhancement of protected habitat in the Plan Area, which would help offset other potential impacts on the species and its habitat. Additionally, implementation of relevant AMMs during permanent development projects would help minimize direct and indirect impacts on western pond turtle. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: There would be a loss of 24 potential breeding ponds, 5 linear miles of stream habitat, and 4,606 acres of modeled western pond turtle habitat as part of the permanent development that would occur in the Plan Area under Alternative 2. The BRCP's restoration, enhancement, and management actions could result in direct and indirect impacts on western pond turtle. Implementation of the BRCP conservation strategy would result in the protection of 10,965 acres of modeled habitat for western pond turtle in the Plan Area, the protection of stream habitat, and the protection of 43 ponds, and would also provide for the management and enhancement of protected habitat in the Plan Area, which would help offset other potential impacts on the species and its habitat. Additionally, implementation of relevant AMMs during permanent development projects would help minimize direct and indirect impacts on western pond turtle. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-15: Effects on foothill yellow-legged frog (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 2,025 acres (18%) of modeled habitat in the Plan Area (CM1). In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area. The BRCP's restoration, enhancement, and management actions could result in injury or mortality of foothill yellow-legged frog and indirect effects on occupied habitat.

Alternative 2 would result in the permanent loss of up to 1,189 acres (11%) of the modeled habitat for foothill yellow-legged frog within the Plan Area. These impacts would result from permanent development projects both within and outside the UPAs. No known locations of foothill yellow-legged frog listed in the CNDDB (2013a) would be affected by permanent development; however, currently unreported populations could be affected.

Permanent disturbance within 500 feet of modeled foothill yellow-legged frog habitat in the Plan Area could adversely affect foothill yellow-legged frog through hydrologic alteration of aquatic habitat, water pollution, and the introduction of potential predators (cats, dogs, nonnative fish, and bullfrogs).

Recurring maintenance activities within and outside UPAs, such as transportation facility maintenance, utility service facilities maintenance, flood control and stormwater maintenance, and vegetation management, may periodically directly (inadvertent mortality) and indirectly (noise, visual, and ground vibrations) affect yellow-legged frog.

Considering the wide distribution of this species beyond the Plan Area; the amount of modeled habitat affected (11%) and the amount protected (18%) in the Plan Area; relevant AMMs to be implemented during permanent development projects; and long-term management of covered species habitats in the Plan Area, Alternative 2 would not significantly impact the foothill yellow-legged frog.

NEPA Determination: Implementation of Alternative 2 could result in the loss and alteration of habitat in the Plan Area for foothill yellow-legged frog. However, given the wide distribution of this species in the Plan Area, the protection of 18% of yellow-legged frog habitat in the Plan Area, implementation of relevant AMMs during permanent development projects, and the long-term management of covered species habitats, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 could result in the loss and alteration of habitat in the Plan Area for foothill yellow-legged frog. However, given the wide distribution of this species in the Plan Area, the protection of 18% of yellow-legged frog habitat in the Plan Area, implementation of relevant AMMs during permanent development projects, and the long-term management of covered species habitats, this impact would be less than significant. No mitigation is required.

Impact BIO-16: Effects on western spadefoot (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 30,675 acres (28%) of modeled western spadefoot habitat and the protection of 31 ponds (CM1). In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

The BRCP's restoration, enhancement, and management actions could result in inadvertent mortality and result in the release of contaminants (e.g., fuels, lubricants) into habitat that could affect survival and cause erosion that could affect habitat.

Alternative 2 would result in the permanent loss of 22 (11%) potential breeding ponds and 10,142 acres—or roughly 9%—of the modeled western spadefoot habitat (non-pond breeding and upland) in the Plan Area. This loss would result from permanent development projects within and outside the UPAs. No known locations of western spadefoot listed in the CNDDDB (2013a) would be affected by permanent development; however, currently unreported populations could be affected.

Permanent development within 500 feet of modeled habitat could indirectly affect the species through increased noise and visual disturbances, increased traffic on nearby roads, and hydrologic alteration of aquatic habitat.

Recurring maintenance activities within and outside UPAs may periodically directly (inadvertent mortality) and indirectly (noise, visual, and ground vibrations) affect western spadefoot.

Considering the wide distribution of this species beyond the Plan Area; impacts on breeding ponds and modeled habitat (9% and 11%, respectively) and the amount of protection (16% and 28%, respectively) in the Plan Area; relevant AMMs to be implemented during permanent development projects; and long-term management of up to 30,675 acres of modeled habitat in the Plan Area, Alternative 2 would not significantly impact the western spadefoot.

NEPA Determination: Implementation of permanent development projects under Alternative 2 would result in the loss of 22 potential breeding ponds and 10,142 acres of modeled western spadefoot habitat in the Plan Area. There would be 30,675 acres of western spadefoot habitat and 31 ponds protected and managed in the Plan Area with implementation of the conservation strategy and conservation measures. In addition, relevant AMMs would be implemented during permanent development projects to minimize impacts on the species. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of permanent development projects under Alternative 2 would result in the loss of 22 potential breeding ponds and 10,142 acres of modeled western spadefoot habitat in the Plan Area. There would be 30,675 acres of western spadefoot habitat and 31 ponds protected and managed in the Plan Area with implementation of the conservation strategy and conservation measures. In addition, relevant AMMs would be implemented during permanent development projects to minimize impacts on the species. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-17: Effects on Chinook salmon (spring- and fall-/late fall-run) and Central Valley steelhead (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, the effects of new and replacement bridge projects would be the same as under Alternative 1.

Covered activities outside the Local Agencies' jurisdiction (i.e., conservation strategy and measures, water and irrigation district actions, road projects) could result in injury or mortality of Chinook salmon and steelhead, as well as permanent and temporary direct effects on occupied habitat. Impact mechanisms associated with habitat restoration and enhancement activities include conversion of cultivated lands, dredger tailings, and lands dominated by herbaceous vegetation to riparian habitat and the operation of equipment to carry out such activities. Operation of equipment

could result in injury or mortality of covered and other native fish species that cannot avoid operating equipment. Accidental introduction of contaminants on project construction sites (e.g., fuel spills) could also result in mortality or inhibit normal behaviors of covered and other native fish species that are sensitive to and come into contact with these contaminants. Permanent direct effects from aquatic habitat improvement activities include removal of in-channel debris to improve fish passage, and placement of spawning gravels. Placement of spawning gravels in stream channels may remove riparian vegetation from channel banks (e.g., vegetation removed for equipment access) and would alter the existing in-channel habitat structure for covered fish and other native aquatic organisms. Also, these activities may result in localized alterations in channel form and patterns of erosion and sedimentation that over time change aquatic habitat structure and function from existing conditions.

Temporary direct effects result from operation of restoration- and enhancement-related equipment. Noise and visual disturbances associated with operation of equipment can result in temporary abandonment or reduction in use of habitat areas by covered and other native fish species adjacent to restoration sites. Erosion, dust, and sedimentation associated with construction-related disturbance of soils during construction periods may also reduce the function of receiving waters as habitat for covered and other native species (e.g., increased turbidity, reduced dissolved oxygen). Operation of equipment in and adjacent to channels and placement of spawning gravels could result in temporary degradation of water quality conditions (e.g., turbidity), which could lead to temporary abandonment of habitat and increased risk of predation downstream of habitat enhancement sites.

Implementation of the conservation strategy and conservation measures would protect up to 6,370 acres of riparian habitat and 57 miles of open water habitat (CM1) and restore up to 613 acres of riparian land cover types (CM4). In addition, CM5 and CM9–CM11 provide for the management and enhancement of protected riparian habitat and fish habitat. These measures would provide for the protection and expansion of habitat for Chinook salmon and steelhead within the Plan Area. Accordingly, the effects of restoration, enhancement, and management actions would be avoided or minimized through implementation of the relevant AMMs identified in Table 4-7 of the Plan; in the long term, these species would likely benefit from these actions.

NEPA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance Chinook salmon and steelhead habitat. A small proportion of overall habitat would be affected by construction and maintenance activities, but restoration activities are expected to result in an overall gain in fish habitat. Therefore, implementation of Alternative 2 would result in a less-than-significant impact on Chinook salmon and steelhead habitat, critical habitat, and EFH in the Plan Area. No mitigation is required.

CEQA Determination: The incorporation of relevant AMMs and the BRCP's protection and conservation measures would protect 57 miles of open water habitat and enhance Chinook salmon and steelhead habitat. A small proportion of overall habitat would be affected by construction and maintenance activities, but management and enhancement activities are expected to result in an overall gain in fish habitat. Therefore, implementation of Alternative 2 would result in an overall beneficial effect on Chinook salmon and steelhead habitat, critical habitat, and EFH. This impact would be less than significant. No mitigation is required.

Impact BIO-18: Effects on Sacramento splittail (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, the effects of construction of replacement bridges in the Feather River would be the same as under Alternative 1.

The BRCP does not contain conservation measures that would be implemented in waterways used by Sacramento splittail. However, incorporation of relevant AMMs identified in Table 4-7 of the Plan would prevent potential indirect effects associated with implementation of the conservation strategy and conservation measures.

NEPA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance Sacramento splittail habitat. Nevertheless, bridge construction would have a minor but permanent effect on Sacramento splittail aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

CEQA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance Sacramento splittail habitat. Nevertheless, bridge construction would have a minor but permanent effect on Sacramento splittail aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

Impact BIO-19: Effects on green sturgeon (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, the effects of new and replacement bridge projects would be the same as under Alternative 1.

Covered activities outside the Local Agencies' jurisdiction (i.e., conservation strategy and measures, water and irrigation district actions, road projects) could result in effects similar to those discussed for Chinook salmon and steelhead in Impact BIO-17. In addition, construction-related activities that create sediment or contaminant discharge could result in effects associated with the species' bottom-feeding characteristics. However, implementation of the BRCP conservation strategy and conservation measures would result in the protection of aquatic habitats (CM1) and would restore approximately 620 acres of riparian habitat (CM4). In addition, CM5 and CM9–CM11 provide for the management and enhancement of protected fish habitat in the Plan Area. These measures would provide for the protection and possible expansion of potential habitat for green sturgeon within the Plan Area. In the long term, this species would likely benefit from these actions.

NEPA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance green sturgeon habitat. A small proportion of overall habitat would be affected by construction and maintenance activities, but restoration activities are expected to result in an overall gain in fish habitat. Therefore, the implementation of Alternative 2 would result in a less-than-significant impact on green sturgeon and its habitat. No mitigation is required.

CEQA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance green sturgeon habitat. A small proportion of overall habitat would be affected by construction and maintenance activities, but restoration

activities are expected to result in an overall gain in fish habitat. This impact would be less than significant. No mitigation is required.

Impact BIO-20: Effects on river lamprey (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, the effects of new and replacement bridge projects would be the same as under Alternative 1.

The BRCP does not contain conservation measures that would be implemented in waterways used by river lamprey. However, incorporation of relevant AMMs identified in Table 4-7 of the Plan would prevent potential indirect effects associated with implementation of the conservation strategy and conservation measures.

NEPA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance river lamprey habitat. Nevertheless, bridge construction would have a minor but permanent effect on river lamprey aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

CEQA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance river lamprey habitat. Nevertheless, bridge construction would have a minor but permanent effect on river lamprey aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

Impact BIO-21: Effects on valley elderberry longhorn beetle (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 8,282 acres of modeled habitat (CM1) and the restoration of 189 acres of riparian habitat under CM4, which states that elderberry shrubs will be planted to replace shrubs and as shown in BRCP Table 5-11, three shrubs will be planted for every shrub supporting species habitat removed. The BRCP's restoration, enhancement, and management actions (such as weed control, planting and seeding of native vegetation, and installation of irrigation features) could result in injury or mortality of valley elderberry longhorn beetle and indirect effects on occupied habitat.

Alternative 2 would result in the permanent loss of up to 2,280 acres (5%) of the modeled valley elderberry longhorn beetle habitat within the Plan Area. These impacts would result from permanent development projects both within and outside the UPAs. No known locations of valley elderberry longhorn beetle in the CNDDDB (2013a) would be affected; however, currently unreported populations could be affected.

Permanent disturbance within 100 feet of modeled habitat could indirectly affect valley elderberry longhorn beetle if hydrologic alterations adversely affect elderberry shrubs occupied by the species.

Recurring maintenance activities within and outside UPAs, such as transportation facility maintenance, utility service facilities maintenance, flood control and stormwater maintenance, and vegetation management, may periodically directly and indirectly affect valley elderberry longhorn beetle habitat.

Considering the species-wide distribution beyond the Plan Area; the amount of modeled habitat affected (5%), the amount protected (19%), and the commitment to replacing affected elderberry shrubs (those with stems more than one inch in diameter) at a 3:1 ratio in riparian restoration sites in the Plan Area; relevant AMMs to be implemented during permanent development projects; and long-term management of riparian habitats in the Plan Area, Alternative 2 would not significantly impact the valley elderberry longhorn beetle.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 2,280 acres of valley elderberry longhorn beetle habitat within the Plan Area due to development projects within and outside the UPAs. Recurring maintenance activities (e.g., transportation facility maintenance, vegetation management) may also affect valley elderberry longhorn beetle habitat. However, implementation of the BRCP conservation strategy would result in the protection and restoration of valley elderberry longhorn beetle habitat and long-term management of riparian habitats in the Plan Area. Additionally, relevant AMMs would be implemented during permanent development projects to minimize impacts on this species. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 2,280 acres of valley elderberry longhorn beetle habitat within the Plan Area due to development projects within and outside the UPAs. Recurring maintenance activities (e.g., transportation facility maintenance, vegetation management) may also affect valley elderberry longhorn beetle habitat. However, implementation of the BRCP conservation strategy would result in the protection and restoration of valley elderberry longhorn beetle habitat and long-term management of riparian habitats in the Plan Area. Additionally, relevant AMMs would be implemented during permanent development projects to minimize impacts on this species. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-22: Effects on vernal pool crustaceans (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of 21,400 acres (62%) of modeled habitat for vernal pool crustaceans (CM1) and in the restoration of at least 38 acres of habitat (CM4) in the Plan Area. At least 14,850 acres of habitat would be protected in core recovery areas. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area. CM14 would result in the implementation of actions to reestablish occurrences of Conservancy fairy shrimp as part of the BRCP's contribution to recovery of the species. The conservation strategy also proposes to protect up to eight occurrences and 150 acres in the Vina Plains Core Recovery Area and to avoid take of Conservancy fairy shrimp within the Plan Area (see BRCP Table 5-23). Presence or absence of Conservancy fairy shrimp will be determined during the planning-level surveys (AMM1) conducted for permanent development projects.

The BRCP's restoration, enhancement, and management actions that occur within approximately 250 feet of vernal pool crustacean habitat could result in the release of contaminants (e.g., fuels, lubricants) into habitat that could affect survival and cause erosion that could affect habitat.

Alternative 2 would result in the permanent loss of approximately 303 acres of vernal pools and other seasonal wetlands associated with grasslands in the Plan Area. This loss would result from permanent development projects within and outside the UPAs.

Alternative 2 would also result in the loss of three known vernal pool tadpole shrimp occurrences (18% of those in the Plan Area), 17 vernal pool fairy shrimp occurrences (59% of those in the Plan Area), and three occurrences of California linderiella (60% of those in the Plan Area). Additional unreported populations may also be affected.

Permanent development within 250 feet of vernal pool complexes can result in alteration of the hydrology of vernal pools through the disruption of surface and subsurface flows across the landscape.

Alternative 2 would also result in the permanent loss of up to 288 acres (4.6%) of designated critical habitat for vernal pool fairy shrimp in the Plan Area, and up to 530 acres (2.3%) of designated critical habitat for vernal pool tadpole shrimp. Not all these areas necessarily contain the primary constituent elements (as defined in the critical habitat designations for these species) needed to support vernal pool fairy shrimp and vernal pool tadpole shrimp; consequently, the actual amount of critical habitat affected for these species may be less than the acreages reported here.

Considering the impacts on modeled habitat (4%), the amount of protection (62%) and restoration in the Plan Area; the commitment to avoid take of Conservancy fairy shrimp and to preserve up to eight occurrences for this species; relevant AMMs to be implemented during permanent development projects; and long-term management of 21,400 acres of modeled habitat in the Plan Area, Alternative 2 would not significantly impact vernal pool crustaceans.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of approximately 303 acres of vernal pool crustacean habitat in the Plan Area due to permanent development projects within and outside the UPAs; the loss of several known occurrences vernal pool tadpole shrimp, vernal pool fairy shrimp, and California linderiella; and the loss of up to 288 acres of designated critical habitat for vernal pool fairy shrimp and up to 530 acres of designated critical habitat for vernal pool tadpole shrimp. However, implementation of the conservation measures and AMMs as part of the BRCP conservation strategy would protect and restore vernal pool crustacean habitat in the Plan Area, help reestablish occurrences of Conservancy fairy shrimp and protect up to eight occurrences of the species, and minimize other potential impacts on vernal pool crustaceans. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of approximately 303 acres of vernal pool crustacean habitat in the Plan Area due to permanent development projects within and outside the UPAs; the loss of several known occurrences vernal pool tadpole shrimp, vernal pool fairy shrimp, and California linderiella; and the loss of up to 288 acres of designated critical habitat for vernal pool fairy shrimp and up to 530 acres of designated critical habitat for vernal pool tadpole shrimp. However, implementation of the conservation measures and AMMs as part of the BRCP conservation strategy would protect and restore vernal pool crustacean habitat in the Plan Area, help reestablish occurrences of Conservancy fairy shrimp and protect up to eight occurrences of the species, and minimize other potential impacts on vernal pool crustaceans. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-23: Effects on Red Bluff dwarf rush (NEPA: less than significant; CEQA: less than significant)

Alternative 2 would result in the loss of at least one occurrence of Red Bluff dwarf rush. AMM3 from the BRCP permits the removal of all Red Bluff dwarf rush plants within covered activity footprints and up to eight currently undiscovered occurrences unless USFWS and CDFW determine that

avoiding the occurrence is necessary to maintain the genetic diversity or regional distribution of the species. The BRCP would compensate for the loss of this occurrence by preserving 10 other known occurrences³ of Red Bluff dwarf rush. The effect of preserving 10 occurrences of Red Bluff dwarf rush would be beneficial, because these occurrences would be protected from future habitat conversion; however, the net effect would be the loss of at least one occurrence.

Alternative 2 would also result in the loss of 1,313 acres of modeled habitat for Red Bluff dwarf rush and the temporary loss of habitat functions on an additional 518 acres of modeled habitat. Although Red Bluff dwarf rush is not known to be present in this habitat, the effects on modeled habitat could potentially affect undiscovered occurrences. Some potential effects on undiscovered occurrences of Red Bluff dwarf rush would be avoided through implementation of AMM1 and AMM10 from the BRCP. AMM10 requires exclusion zones be established around occurrences to prevent any direct or indirect impacts. However, it is unlikely that an occurrence would continue to persist in such a small, isolated habitat fragment. Should such an occurrence fail to persist, the BRCP would not require compensation for its loss.

The loss of 1,313 acres of modeled habitat for Red Bluff dwarf rush would be compensated for by the acquisition, protection, and enhancement of 2,133 acres of modeled habitat with the same or greater habitat function. In addition, another 19,267 acres of modeled habitat would be acquired, protected, and enhanced, and 307 acres of vernal swales and pools would be restored within the historical distribution of Red Bluff dwarf rush. Preserving 21,400 acres of habitat may compensate for the habitat loss because the affected habitat is not known to be occupied by the species. However, if undiscovered occurrences of Red Bluff dwarf rush are present in the affected modeled habitat, then this impact could result in a loss of habitat and habitat functions.

Under CM5, the preserved habitat would be managed specifically for the benefit of Red Bluff dwarf rush. Habitat enhancement and management is expected to compensate for the loss of Red Bluff dwarf rush individuals and habitat functions resulting from the loss of one or more occurrences. Monitoring will be conducted to verify that the actions carried out under CM5 fully compensate for these adverse effects. If monitoring determines that the effects are not fully compensated, then adaptive management will be implemented to ensure that there is no net loss of individuals or habitat functions.

NEPA Determination: Implementation of Alternative 2 would result in the loss of at least one occurrence of Red Bluff dwarf rush and 1,313 acres of Red Bluff dwarf rush habitat in the Plan Area. However, habitat loss would be compensated for, and preserved habitat would be managed for the benefit of Red Bluff dwarf rush under CM5. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the loss of at least one occurrence of Red Bluff dwarf rush and 1,313 acres of Red Bluff dwarf rush habitat in the Plan Area. However, habitat loss would be compensated for, and preserved habitat would be managed for the benefit of Red Bluff dwarf rush under CM5. Therefore, this impact would be less than significant. No mitigation is required.

³ Because the BRCP does not use the term *occurrence* in accordance with accepted practice (California Natural Diversity Database 2001; NatureServe 2002), it is unclear whether the 10 occurrences represent populations or simply 10 locations where Red Bluff dwarf rush has been observed.

Impact BIO-24: Effects on Butte County meadowfoam (NEPA: less than significant; CEQA: less than significant)

Alternative 2 would result in the loss of three occurrences of Butte County meadowfoam and partial loss of two other occurrences. AMM3 from the BRCP permits the removal of all Butte County meadowfoam plants within the specified covered activity footprints the loss of up to six currently undiscovered Butte County meadowfoam occurrences unless USFWS and CDFW determine that avoiding the occurrence is necessary to maintain the genetic diversity or regional distribution of the species. The BRCP would compensate for the loss of these occurrences by preserving 10 occurrences of Butte County meadowfoam within the Chico Butte County Meadowfoam Preserve and preserving all or part of five other Butte County meadowfoam occurrences.

Alternative 2 would have indirect effects on up to seven occurrences. These indirect effects would be avoided or minimized through implementation of AMMs.

Alternative 2 would result in the loss of 345 acres of modeled primary habitat and 1,165 acres of modeled secondary habitat and the temporary loss of habitat functions on an additional 179 acres of primary habitat and 144 acres of secondary habitat. In addition, Alternative 2 would result in the loss of 478 acres of critical habitat designated for Butte County meadowfoam. The effects on modeled habitat could potentially affect undiscovered occurrences of Butte County meadowfoam. Some potential effects on undiscovered occurrences of Butte County meadowfoam would be avoided through implementation of AMM1 and AMM10 from the BRCP. AMM10 requires exclusion zones be established around occurrences to prevent any direct or indirect impacts. However, it is unlikely that an occurrence would continue to persist in such a small, isolated habitat fragment. Should such an occurrence fail to persist, BRCP would not require compensation for its loss.

The loss of 345 acres of modeled primary habitat and 1,165 acres of secondary habitat would be compensated for by the acquisition, protection, enhancement, and management of 2,441 acres of primary modeled habitat and 326 acres of secondary modeled habitat with the same or greater habitat function. In addition, another 3,600 acres of primary modeled habitat and 892 acres of secondary modeled habitat would be acquired, protected, enhanced, and managed for the benefit of Butte County meadowfoam. In addition, 285 acres of vernal pool habitat would be restored within the historic distribution of Butte County meadowfoam, financed by habitat fees for removal of primary habitat.

The preservation of 6,041 acres of primary habitat and 1,218 acres of secondary habitat, in conjunction with the preservation of all or parts of 15 occurrences, would be beneficial because it would preserve all the remaining occurrences and primary habitat that would be necessary to ensure the survival and recovery of the species. The restoration of 285 acres of vernal pool habitat, together with enhancement of the preserved habitat and management for the benefit of Butte County meadowfoam, are likely to offset the adverse effects of the loss of occurrences and primary and secondary habitat that would be permitted under the BRCP.

NEPA Determination: Implementation of Alternative 2 would result in the loss of three occurrences of Butte County meadowfoam and partial loss of two other occurrences, primary and secondary modeled Butte County meadowfoam habitat, and critical habitat for Butte County meadowfoam in the Plan Area. AMMS implemented as part of Alternative 2, as well as the acquisition, protection, enhancement, and management of primary and secondary habitat with equal or greater habitat function, would minimize impacts on Butte County meadowfoam. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the loss of three occurrences of Butte County meadowfoam and partial loss of two other occurrences, primary and secondary modeled Butte County meadowfoam habitat, and critical habitat for Butte County meadowfoam in the Plan Area. AMMS implemented as part of Alternative 2, as well as the acquisition, protection, enhancement, and management of primary and secondary habitat with equal or greater habitat function, would minimize impacts on Butte County meadowfoam. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-25: Effects on Butte County checkerbloom (NEPA: less than significant; CEQA: less than significant)

Alternative 2 would result in adverse effects on eight occurrences of Butte checkerbloom.⁴ AMM3 from the BRCP permits the removal of all Butte County checkerbloom plants within covered activity footprints and up to 20 currently unknown occurrences unless USFWS and CDFW determine that avoiding the occurrence is necessary to maintain the genetic diversity or regional distribution of the species. The BRCP would compensate for the loss of these occurrences by preserving 65 other known occurrences of Butte County checkerbloom. The effect of preserving 65 occurrences would be beneficial because these occurrences would be protected from future habitat conversion, but the net effect would be the loss of at least eight occurrences.

Alternative 2 would result in the loss of 2,638 acres of modeled habitat for Butte County checkerbloom and the temporary loss of habitat functions on an additional 194 acres of modeled habitat. The effects on modeled habitat could potentially affect undiscovered occurrences of Butte checkerbloom. Some potential effects on undiscovered occurrences of Butte checkerbloom would be avoided through implementation of AMM1 and AMM10 from the BRCP. AMM10 requires that exclusion zones be established around occurrences to prevent any direct or indirect impacts. However, it is unlikely that an occurrence would continue to persist in such a small, isolated habitat fragment. Should such an occurrence fail to persist, the BRCP would not require compensation for its loss.

The loss of 2,638 acres of modeled habitat for Butte County checkerbloom would be compensated for by the acquisition, protection, and enhancement of 2,638 acres of modeled habitat with the same or greater habitat function. Preserving 2,638 acres of habitat does not fully compensate for this impact because it allows a net loss of habitat and habitat functions.

Under CM5, the preserved habitat would be managed specifically for the benefit of Butte County checkerbloom. Habitat enhancement and management is expected to compensate for the loss of Butte County checkerbloom individuals and habitat functions resulting from the loss of eight occurrences. Monitoring will be conducted to verify that the measures carried out under CM5 fully compensate for these adverse effects. If monitoring determines that the effects are not fully compensated for, then adaptive management will be implemented to ensure that there is no net loss of individuals or habitat functions.

NEPA Determination: Implementation of Alternative 2 would result in the loss of eight occurrences of Butte County checkerbloom, as well as 2,638 acres of habitat and the temporary loss of habitat functions on 194 acres of habitat for the species in the Plan Area. Implementation of CM5 and AMMS as part of Alternative 2, as well as the acquisition, protection, and enhancement of habitat with equal

⁴ See footnote 3 regarding the BRCP's use of the term *occurrence*.

or greater habitat function would minimize impacts on Butte County checkerbloom. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the loss of eight occurrences of Butte County checkerbloom, as well as 2,638 acres of habitat and the temporary loss of habitat functions on 194 acres of habitat for the species in the Plan Area. Implementation of CM5 and AMMS as part of Alternative 2, as well as the acquisition, protection, and enhancement of habitat with equal or greater habitat function would minimize impacts on Butte County checkerbloom. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-26: Effects on other special-status plants (NEPA: less than significant; CEQA: less than significant)

Alternative 2 would not result in the loss of or damage to any known occurrences of 11 other covered plant species or 13 noncovered special-status plant species that occur in the Plan Area. The BRCP does not protect or compensate for the loss of noncovered species occurrences. It would result in the loss of habitat for eight covered plant species (beyond those discussed in the preceding three impacts), as well as five noncovered special-status plant species. No occurrences or habitat for lesser saltscale, veiny monardella, or California beaked rush would be affected.

Alternative 2 would result in the loss of habitat for eight other covered plants. Covered activities would result in the loss of 1,313 acres of modeled habitat and temporary loss of habitat functions on an additional 518 acres of modeled habitat for Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, and Greene's tuctoria. In addition, Alternative 2 would result in the loss of 1.7 acres of critical habitat designated for Hoover's spurge, hairy Orcutt grass, and Greene's tuctoria. Alternative 2 would result in the loss of 176 acres of modeled habitat and temporary loss of habitat functions on an additional 18 acres of modeled habitat for Ferris' milkvetch. It would result in the loss of 236 acres of modeled habitat and temporary loss of habitat functions on an additional 184 acres of modeled habitat for Butte County golden clover.

The loss of 1,313 acres of modeled habitat for Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, and Greene's tuctoria would be compensated for by the acquisition, protection, and enhancement of 2,133 acres of modeled habitat with the same or greater habitat function. In addition, another 19,267 acres of modeled habitat would be acquired, protected, and enhanced, and 307 acres of vernal swales and pools would be restored within the historical distribution of these species. Preserving 21,400 acres of habitat may compensate for this impact because the affected habitat is not known to be occupied by these species. However, if undiscovered occurrences of these species are present in the affected modeled habitat, then this impact could result in a loss of habitat and habitat functions.

Under CM5, the preserved habitat would be managed specifically for the benefit of Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, and Greene's tuctoria. Habitat enhancement and management is expected to compensate for the loss of individuals of these species and habitat functions resulting from the loss of one or more occurrences. Monitoring will be conducted to verify that the actions carried out under CM5 fully compensate for these adverse effects. If monitoring determines that the effects are not fully compensated for, then adaptive management will be implemented to ensure that there is no net loss of individuals or habitat functions.

Alternative 2 could also result in the loss of habitat and the temporary loss of habitat functions for five noncovered species that have occurrences in UPAs: Brandegees' clarkia, white-stemmed clarkia, adobe lily, rose mallow, and California satintail. Covered activities could potentially affect undiscovered occurrences of these species. Although the conservation measures and AMMs in the BRCP do not apply to noncovered special-status species, as described in Alternative 1, covered activities that affect occurrences and habitat of noncovered special status plants would be mitigated on a project-by-project basis for discretionary projects. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review. In addition, ancillary benefits are expected to occur to these plant species as a result of the BRCP because it would establish a comprehensive reserve management program that would enhance habitat conditions in a variety of natural communities that may support these types of noncovered special-status plants.

NEPA Determination: Implementation of Alternative 2 would result in the loss of habitat and habitat functions for the following covered plants in the Plan Area: Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, Greene's tuctoria, Ferris' milkvetch, and Butte County golden clover. Implementation of CM5 and AMMS as part of Alternative 2, as well as the acquisition, protection, and enhancement of habitat with equal or greater habitat function would minimize impacts covered plant species and impacts would be less than significant. Effects on noncovered species are expected to also be less than significant through project-specific mitigation and the ancillary benefits associated with the BRCP. This impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the loss of habitat and habitat functions for the following covered plants in the Plan Area: Hoover's spurge, Ahart's dwarf rush, hairy Orcutt grass, slender Orcutt grass, Ahart's paronychia, Greene's tuctoria, Ferris' milkvetch, and Butte County golden clover. Implementation of CM5 and AMMS as part of Alternative 2, as well as the acquisition, protection, and enhancement of habitat with equal or greater habitat function would minimize impacts covered plant species and impacts would be less than significant. Effects on noncovered species are expected to also be less than significant through project-specific mitigation and the ancillary benefits associated with the BRCP. This impact would be less than significant. No mitigation is required.

Impact BIO-27: Effects on Antioch Dunes and Sacramento anthicid beetles (NEPA: less than significant; CEQA: less than significant)

The effects on Antioch Dunes and Sacramento anthicid beetles were analyzed using the BRCP impact acreages on the herbaceous riparian river bar habitat natural community because these species are found on sand bars associated with this habitat.

Implementation of the BRCP conservation strategy could result in impacts on Antioch Dunes and Sacramento anthicid beetles if, as stated in CM4, riparian restoration that involves site clearing and grading takes place in gaps between existing riparian habitat. Such areas could contain habitat for anthicid beetles. The BRCP would protect up to 6,370 acres (CM1) and restore approximately 620 acres of riparian land cover types (CM4). Protected and restored areas would likely include areas of sandy banks and sandbars. In addition, CM4 provides for the management and enhancement of protected riparian habitat. These measures would provide for the protection and possible expansion of potential habitat for anthicid beetles in the Plan Area. Effects on riparian habitat would also be avoided and minimized with implementation of AMMs identified in Section 5.4.4 of the BRCP.

Alternative 2 would result in the permanent loss of 20 acres (1%) of potential habitat for anthicid beetle species within the Plan Area. These losses would result from permanent development projects within and outside the UPAs. No occurrences of anthicid beetles listed in the CNDDDB (2013a) would be directly affected by development projects; however, unreported occurrences may be affected.

Recurring maintenance activities and work in conservation lands could result in temporary disturbances of anthicid beetle habitat.

Considering the small amount of potential habitat lost, incorporation of relevant AMMs for permanent development projects, and the BRCP's protection and restoration measures for riparian habitats that will benefit the species, the implementation of Alternative 2 would not significantly impact the Antioch Dunes and Sacramento anthicid beetles.

NEPA Determination: Implementation of Alternative 2 could result in habitat impacts on Antioch Dunes and Sacramento anthicid beetles, as well as the permanent loss of 20 acres of potential anthicid beetle habitat. Implementation of AMMs, and protection and restoration measures for riparian habitat that would benefit the species, would minimize these impacts. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 could result in habitat impacts on Antioch Dunes and Sacramento anthicid beetles, as well as the permanent loss of 20 acres of potential anthicid beetle habitat. Implementation of AMMs, and protection and restoration measures for riparian habitat that will benefit the species, would minimize these impacts. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-28: Effects on hardhead (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, the effects of new and replacement bridge projects would be the same as under Alternative 1.

The BRCP does not contain conservation measures that would be implemented in waterways used by hardhead. However, incorporation of relevant AMMs identified in Table 4-7 of the Plan would prevent potential significant indirect effects associated with implementation of the conservation strategy and conservation measures.

NEPA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance hardhead habitat. Nevertheless, bridge construction would have a minor but permanent effect on hardhead aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

CEQA Determination: The incorporation of relevant AMMs and the BRCP's protection and restoration measures would protect and enhance hardhead habitat. Nevertheless, bridge construction would have a minor but permanent effect on hardhead aquatic habitat. However, because of the limited extent of this impact, it would be less than significant. No mitigation is required.

Impact BIO-29: Effects on noncovered special-status and migratory birds (NEPA: less than significant; CEQA: less than significant)

The effects on noncovered birds were evaluated by summing the impacts on those natural communities identified in Table 6-4 as providing suitable habitat for the species. The areal extent of impacts on potential habitats for these species is presented in Table 6-7. As seen in Table 6-7, Alternative 2 would result in some amount of permanent habitat loss of natural communities that provide some element of habitat (nesting or foraging) for noncovered special-status birds. Implementation of the BRCP would protect up to 89,601 acres (CM1) and restore up to 815 acres (CM4) of natural communities in the Plan Area that could benefit noncovered birds. In addition, CM5 and CM6 provide for the management and enhancement of protected habitats over the life of the Plan. Considering the amount of potential habitat lost and the BRCP's protection and restoration measures, the implementation of Alternative 2 would not result in substantial adverse effects on noncovered special-status bird from habitat loss

Recurring maintenance activities within the Plan Area, such as transportation facility maintenance, utility service facilities maintenance, water and irrigation canal maintenance, and vegetation management, may periodically affect noncovered bird and migratory bird behavior, including nesting as described under Alternative 1. As described under Alternative 1 permittees would assume responsibility for and comply with California Fish and Game Code and the MBTA for all activities that have a potential to result in the take of active bird nests and would be required to implement pre-construction surveys, agency designated avoidance and minimization measures, and the other generally required activities as described under Alternative 1. Compliance with the MBTA is mandatory; therefore, it is expected disturbances to noncovered special status birds and migratory birds would be reduced or avoided.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of natural communities that provide elements of nesting and foraging habitat for noncovered special-status birds. In addition, the BRCP's restoration, enhancement, and management actions, as well as recurring maintenance and construction activities within the Plan Area, could result in the disturbance of nesting noncovered birds and other nesting birds protected under the MBTA. Implementation of the BRCP under Alternative 2 would protect 89,601 acres and restore natural communities in the Plan Area, as well as provide for the management and enhancement of protected habitats in the Plan Area, which would reduce the severity of the impact. Furthermore, mandatory compliance with the MTBA and California Fish and Game Code would reduce this impact to a less-than-significant level. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of natural communities that provide elements of nesting and foraging habitat for noncovered special-status birds. In addition, the BRCP's restoration, enhancement, and management actions, as well as recurring maintenance and construction activities within the Plan Area, could result in the disturbance of nesting noncovered birds and other nesting birds protected under the MBTA. Implementation of the BRCP under Alternative 2 would protect 89,601 acres and restore natural communities in the Plan Area, as well as provide for the management and enhancement of protected habitats in the Plan Area, which would reduce the severity of the impact. Furthermore, mandatory compliance with the MTBA and California Fish and Game Code would reduce this impact to a less-than-significant level. No mitigation is required.

Impact BIO-30: Effects on bats (NEPA: less than significant; CEQA: less than significant)

Bats that are known to or that could occur within the Plan Area (pallid bat, silver-haired bat, western red-bat, hoary bat, western mastiff bat, and Yuma myotis) employ varied roost strategies, from solitary roosting in foliage of trees to colonial roosting in trees, caves, mines, and artificial structures such as tunnels, buildings, and bridges. Various roost strategies could include night roosts, maternity roosts, migration stopover, or hibernation. The natural community/land cover types used to assess effects on bat roosting habitat include oak woodland and savanna (all types) and riparian (all types except willow scrub). All undeveloped portions of the Plan Area would be suitable for foraging. There are no bat species covered by the BRCP.

Alternative 2 would result in the permanent loss of up to 11,659 acres of potential tree-roosting habitat in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. In addition, bridge replacement and improvements could affect bats that utilize bridge weep holes and crevices for roosting.

Permanent development within 500 feet of bat roosting habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities if bats are present.

Recurring maintenance activities within and outside UPAs may periodically indirectly (through noise and visual disturbance) affect roosting bats. Bridge maintenance work and tree trimming and removal associated with recurring maintenance activities could directly impact roosting bats, including maternal roosts.

Covered activities on conservation lands could also indirectly affect bats during implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter bat behavior.

Implementation of the BRCP conservation strategy would result in the protection of 26,141 acres (25%) of potential bat tree-roosting habitat under natural community protections (CM1). The protection of 35 acres of cliff habitat for American peregrine falcon may also benefit cave- and crevice roosting bat species. Also, the 178 acres of riparian restoration (CM4) would provide future benefits to tree-roosting bats. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

The management of up to 26,354 acres of potential bat roosting habitat in the Plan Area would be a benefit to bats in the long term. Implementation of AMM28 from the BRCP, which would require surveying for bats prior to conducting bridge replacement projects, would avoid affecting bridge roosting bats. Considering the long-term protection and management of natural communities in the Plan Area that would provide suitable roosting and foraging habitat for bats, significant impacts to bats would not occur.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of potential bat tree-roosting habitat in the Plan Area as a result of permanent development within and outside the UPAs, and bridge replacement and improvement projects could affect bats that use holes and crevices for roosting. In addition, permanent development within 500 feet of bat roosting habitat, as well as recurring maintenance activities within and outside UPAs, could affect roosting bats through visual and noise disturbances. The protection and management of potential bat roosting habitat under the BRCP conservation strategy would benefit bats in the Plan Area in the long term. Therefore, impacts on bats would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of potential bat tree-roosting habitat in the Plan Area as a result of permanent development within and outside the UPAs, and bridge replacement and improvement projects could affect bats that use week holes and crevices for roosting. In addition, permanent development within 500 feet of bat roosting habitat, as well as recurring maintenance activities within and outside UPAs could affect roosting bats through visual and noise disturbances. The protection and management of potential bat roosting habitat under the BRCP conservation strategy would benefit bats in the Plan Area in the long term. Therefore, impacts on bats would be less than significant. No mitigation is required.

Impact BIO-31: Effects on American badger (NEPA: less than significant; CEQA: less than significant)

The effects on American badger were analyzed using the BRCP analysis of effects on the grassland (except grassland with vernal swale complex) natural community type.

Alternative 2 would result in the permanent loss of at least 7,776 acres (11%) of potential habitat for American badger in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. No known American badger records listed in the CNDDDB would be directly affected by development projects; however, unreported occurrences of this species could be affected by permanent development.

Permanent development within 500 feet of American badger habitat could cause alterations in behavior through visual and noise disturbances associated with construction and normal ongoing activities.

Recurring maintenance activities within and outside UPAs may periodically indirectly (through noise and visual disturbance) affect American badgers.

Covered activities on conservation lands could also indirectly affect American badgers during the implementation of habitat restoration, enhancement, and management actions through visual and noise disturbances that may alter American badger behavior.

Implementation of the BRCP conservation strategy would result in the protection of 20,705 acres (30%) of potential American badger habitat in the Plan Area under natural community protections identified in CM1. In addition, CM5 and CM6 provide for the management and enhancement of protected habitat in the Plan Area.

The management of at least 20,705 acres (30%) of potential American badger habitat in the Plan Area under Alternative 2 would benefit American badger in the long term.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of potential American badger habitat in the Plan Area as a result of permanent development within and outside the UPAs. In addition, permanent development within 500 feet of American badger habitat, recurring maintenance activities within and outside UPAs, and covered activities on conservation lands could indirectly affect the species through visual and noise disturbances. The protection and management of potential American badger habitat under the BRCP conservation strategy would benefit American badger in the Plan Area in the long term. Impacts on American badger would be less than significant when considering the level of grassland conservation in the Plan Area. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of potential American badger habitat in the Plan Area as a result of permanent development within and outside the UPAs. In addition, permanent development within 500 feet of American badger habitat, recurring maintenance activities within and outside UPAs, and covered activities on conservation lands could indirectly affect the species through visual and noise disturbances. The protection and management of potential American badger habitat under the BRCP conservation strategy would benefit American badger in the Plan Area. Impacts on American badger would be less than significant when considering the level of grassland conservation in the Plan Area. No mitigation is required.

Impact BIO-32: Effects on migratory deer (NEPA: less than significant; CEQA: less than significant)

Effects on migratory deer in the Plan Area [Columbian black-tailed deer (*Odocoileus hemionus columbianus*)] were evaluated qualitatively and are included in a review of BRCP Figure 3-20 (Deer Herds and Habitat Ranges in the Plan Area) and various maps in the BRCP depicting the UPAs and transportation improvement projects. The information on deer herds presented here is adapted from the *Butte County General Plan 2030*. The County general plan identifies two types of migratory deer habitat: critical winter range areas are those that are critical to the survival of migratory deer herds during severe winter conditions; winter range areas are those that provide habitat suitable for winter conditions but are not critical during severe winter conditions.

The full buildout of the UPAs under Alternative 2 would allow some development within winter deer herd range and critical winter deer herd range but would require that development be planned according to the Deer Herd Migration Area Overlay in the County general plan (see Figure LU-4 in the County general plan). This overlay, which the general plan defines as a more specific regulation to the underlying planning designations, states that development in the winter deer herd migration area requires a minimum lot size of 20 acres and that development in the critical winter deer herd migration area requires a minimum lot size of 40 acres; however, development in these areas may be clustered at smaller lot sizes than these minimums in order to protect the deer herd areas, provided that the nondevelopment areas are protected under permanent conservation easements.

A review of BRCP Figure 2-2 in comparison to BRCP Figure 3-20 for the East Tehama deer herd shows that residential development is proposed within a small amount of critical winter deer habitat in the northeast portion of the Chico UPA, and scattered residential development is proposed within winter deer range along the eastern limits of the Chico UPA—in particular, a large area along the south side of Butte Creek and in the Foothill UPA north of SR 191.

A substantial amount of residential development is proposed within critical winter deer range for the Buck Mountain herd from buildout of the area west of Lake Oroville; a small amount of development is proposed within the lower elevation winter deer range.

For the Mooretown deer herd, a small amount of residential development is proposed within critical winter habitat for the Mooretown herd east of Oroville, and a large amount is proposed in lower elevation winter habitat in the Bangor UPA and the southeastern corner of the Oroville UPA.

The BRCP has established objectives to protect at least 40% of the critical winter range habitat and 20% of winter range habitat for the East Tehama, Bucks Mountain, and Mooretown deer herds, comprising blue oak savanna, blue oak woodland, live oak woodland, and mixed oak woodland, within 45 years. The BRCP states that these protected areas will primarily be large patches of oak

woodlands that have sufficient interior habitat and are adjacent or connected to other large parcels of native habitats.

The County general plan limits development within wintering deer habitat. This provision, along with the BRCP's commitment to protect large amounts of wintering deer habitat and the amount of wintering deer habitat east of the Plan Area, ensures that implementation of the BRCP would not result in significant adverse effects on migratory deer.

NEPA Determination: Implementation of Alternative 2 would allow some development within winter deer herd range and critical winter deer herd range but would require that development be planned according to the Deer Herd Migration Area Overlay in the County general plan. In addition, the BRCP has established objectives to protect at least 40% of the critical winter range habitat and 20% of winter range habitat for the East Tehama, Bucks Mountain, and Mooretown deer herds. Therefore, it is unlikely that there would be significant impacts on migratory deer in the Plan Area resulting from implementation of Alternative 2. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would allow some development within winter deer herd range and critical winter deer herd range, but would require that development be planned according to the Deer Herd Migration Area Overlay in the County general plan. In addition, the BRCP has established objectives to protect at least 40% of the critical winter range habitat and 20% of winter range habitat for the East Tehama, Bucks Mountain, and Mooretown deer herds. Therefore, it is unlikely that there would be significant impacts on migratory deer in the Plan Area resulting from implementation of Alternative 2. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-33: Effects on wildlife migration corridors (NEPA: less than significant; CEQA: less than significant)

The potential effects of Alternative 2 on wildlife corridors in the Plan Area were evaluated qualitatively using map data from the California Essential Habitat Connectivity (CEHC) Project (Spencer et al. 2010). This information was used to determine if buildout of any of the UPAs would result in barriers across natural lands that serve as known or potential wildlife corridors. The CEHC identified natural blocks of habitat across California and areas that potentially provide linkages—or Essential Connectivity Areas (ECAs)—between these blocks. ECAs are defined as lands likely to be important to wildlife movement between large, mostly natural areas at the statewide level. The ECAs form a functional network of wildlands that are considered important to the continued support of California's diverse natural communities.

Two ECAs occur within the Plan Area. The Orland Buttes/ Stone Valley/ Julian Rocks–Ishi Wilderness ECA crosses the Plan Area at its northwest corner. This ECA connects the Sierra Nevada foothills to the north of, and including a portion of, the Plan Area to the rolling grasslands west of the Plan Area and ultimately to the Coast Ranges. The North Table Mountain–Ishi Wilderness ECA originates northeast of the Plan Area, enters the Plan Area just east of Chico, and continues south through the foothills to the outskirts of Oroville. This ECA connects the higher elevation Cascades to the northeast to the foothills along the Plan Area's eastern boundary.

Full buildout of the UPAs within the Cascade and Sierra CAZs would occupy a large portion of the North Table Mountain–Ishi Wilderness ECA and would consequently adversely affect wildlife corridors, including the movement of migratory deer. Capacity enhancements on SR 99 would likely

create additional barriers to east-west wildlife movements through the northern portion of the Plan Area.

The BRCP's criteria for selecting lands for preservation include the following measures that contribute to maintaining wildlife corridors.

- Level of contribution for maintaining local and regional ecological processes.
- Level of connectivity provided between and among existing conserved habitat areas.
- Level of contribution for preserving natural environmental gradients.
- Level of contribution toward establishment of large units of conserved lands.

The BRCP also commits to establishing five ecological corridors that link natural habitat and agricultural lands that provide some wildlife value. Three of these corridors generally cross the Plan Area from east to west and would be at least 1.2 miles wide. The other two link areas from north to south along the western edge of the Plan Area. One, specifically designed for giant garter snake, would be 0.6 mile wide. The other, along the Sacramento River, would serve to maintain and enhance the connectivity of riparian and wetland habitats along the river. The BRCP commits to undertake enhancements to minimize the effects of barriers and habitat gaps that adversely affect the movement of covered and other native wildlife species when establishing and maintaining these corridors.

The BRCP's effects on wildlife corridors in general would be offset by the establishment of the five ecological corridors.

NEPA Determination: Full buildout of the UPAs under Alternative 2 could affect wildlife corridors within the Plan Area and could create barriers to wildlife movement. Implementation of the BRCP under this alternative would establish five ecological corridors linking natural habitat and agricultural lands that provide some wildlife value. BRCP implementation would also provide other area enhancements to minimize barriers and habitat gaps that affect the movement of covered and other native wildlife species. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Full buildout of the UPAs under Alternative 2 could affect wildlife corridors within the Plan Area and could create barriers to wildlife movement. Implementation of the BRCP under this alternative would establish five ecological corridors linking natural habitat and agricultural lands that provide some wildlife value. BRCP implementation would also provide other area enhancements to minimize barriers and habitat gaps that affect the movement of covered and other native wildlife species. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-34: Effects on wetlands and waters of the United States (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP would result in the protection of up to approximately 9,622 acres of wetlands (includes riparian habitat, agricultural wetlands, and wetlands within grasslands using the assumptions in BRCP Table 3-16), 38 acres (17% of pond acreage) of other waters (equivalent of 80 ponds), and 52 linear miles (2%) of streams in the Plan Area (CM1). Approximately 626 acres of wetlands and 189 acres of riparian that could be considered wetland would be restored under the conservation strategy and conservation measures (CM4). Activities to Improve Urban Stormwater

Quality (BRCP 5.4.4) would provide funding for existing and future programs to improve the quality of stormwater runoff entering waters of the United States. CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Alternative 2 would result in the permanent loss of at most 796 acres (1%) of wetlands and 25 acres (11% of pond acreage) of other waters (equivalent of 52 ponds) in the Plan Area (Table 6-6). There would be no permanent loss of linear miles of stream because the BRCP includes a commitment to avoid impacts on streams.

Permanent development adjacent to wetlands and waters of the United States could result in alterations in local ground and surface waters and the introductions of pollutants that could adversely affect the functions and values of wetlands and waters.

Covered activities on conservation lands would generally avoid and minimize disturbances of wetlands and waters. AMM1 from the BRCP requires the identification of wetlands and waters within permanent development project footprints through conducting a wetland delineation according to the most recent version of U.S. Army Corps of Engineers *1987 Wetland Delineation Manual*, applicable regional supplement, and mapping standards guidelines. AMM4 requires that projects be designed to avoid and minimize impacts on wetlands and waters, and AMM6 requires the establishment of permanent habitat buffers along stream and riparian corridors within permanent development projects.

Recurring maintenance activities adjacent to wetland and waters of the United States could result in the inadvertent introduction of invasive plant species, the accidental release of chemical pollutants into wetlands and waters, and sedimentation resulting from ground disturbing activities that could adversely affect the functions and values of wetlands and waters.

Considering the amount of protection and restoration; relevant AMMs to be implemented during permanent development projects; and long-term management of wetland and waters of the United States in the Plan Area, Alternative 2 would not significantly impact wetlands and waters of the United States in the Plan Area.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 796 acres of wetlands and 25 acres of other waters in the Plan Area. In addition, permanent development and recurring maintenance activities occurring adjacent to wetlands and waters of the United States could result in alterations in local ground and surface waters and the introduction of pollutants and invasive plant species that could adversely affect the function of these waters. Covered activities on conservation lands would generally avoid and minimize disturbances of wetlands and waters. In addition, AMMs implemented under this alternative would help avoid and minimize impacts to wetlands and waters of the United States in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 796 acres of wetlands and 25 acres of other waters in the Plan Area. In addition, permanent development and recurring maintenance activities occurring adjacent to wetlands and waters of the United States could result in alterations in local ground and surface waters and introduction of pollutants and invasive plant species that could adversely affect the function of these waters. Covered activities on conservation lands would generally avoid and minimize disturbances of wetlands and waters. In addition, AMMs implemented under this alternative would help avoid and

minimize impacts to wetlands and waters of the United States in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-35: Effects on chaparral (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy could result in the protection of small patches of chaparral that occur adjacent to oak woodlands. In addition, CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Alternative 2 would result in the permanent loss of at most 389 acres (5%) of chaparral in the Plan Area (Table 6-7), most of which (295 acres) would be in the Sierra Foothills CAZ. This natural community represents potential habitat for several wildlife and rare plant species.

Permanent development adjacent to chaparral could result in the introduction of invasive plant species that would be affect species composition in this natural community.

Recurring maintenance activities within and adjacent to chaparral could result in the inadvertent introduction of invasive plant species, removal and trimming of vegetation for utility and transportation maintenance, ground disturbance associated with utility maintenance and the establishment of seasonal fire breaks, and the accidental release of vehicle oils and fuels that could alter the species composition of this natural community.

The relative amount of chaparral affected in the Plan area is small (5%) and this natural community is not considered to be rare within the region. Therefore, Alternative 2 would not significantly impact this natural community.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 389 acres of chaparral in the Plan Area. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb this natural community through the introduction of invasive plant species, ground disturbance, and trimming and removal of vegetation. However, implementation of the BRCP conservation strategy could result in the protection of small patches of chaparral and would provide for the long-term management and enhancement of protected habitat in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 389 acres of chaparral in the Plan Area. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb this natural community through the introduction of invasive plant species, ground disturbance, and trimming and removal of vegetation. However, implementation of the BRCP conservation strategy could result in the protection of small patches of chaparral and would provide for the long-term management and enhancement of protected habitat in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-36: Effects on coniferous forest (NEPA: less than significant; CEQA: less than significant)

Alternative 2 would result in the permanent loss of at most 9 acres (60%) of coniferous forest in the Plan Area (Table 6-7), all of which would be in the Sierra Foothills CAZ.

Permanent development adjacent to coniferous forest could result in the introduction of invasive plant species that would affect species composition of native plant within this natural community.

Recurring maintenance activities within and adjacent to coniferous forest could result in the inadvertent introduction of invasive plant species, removal and trimming of vegetation for utility and transportation maintenance, ground disturbance associated with utility maintenance and the establishment of seasonal fire breaks, and the accidental release of vehicle oils and fuels, all of which could alter the species composition of this natural community.

The amount of coniferous forest affected in the Plan area is small (9 acres) and this natural community is common within the region and managed and protected in eastern Butte County in the Plumas National Forest. Therefore, Alternative 2 would not significantly impact this natural community.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 9 acres of coniferous forest in the Plan Area. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb this natural community through the introduction of invasive plant species, ground disturbance, and trimming and removal of vegetation. However, coniferous forest is common within the region and protected in eastern Butte County. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 9 acres of coniferous forest in the Plan Area. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb this natural community through the introduction of invasive plant species, ground disturbance, and trimming and removal of vegetation. However, coniferous forest is common within the region and protected in eastern Butte County. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-37: Effects on oak woodland and savanna natural communities (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of up to 20,491 acres (22%) of oak woodland and savanna in the Plan Area (CM1). In addition, CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands could result in effects on individual oak trees. The restoration of vernal pools and other seasonal wetlands in oak savanna could indirectly affect oak trees through alterations in surface and subsurface hydrology; however, this affect would likely be minimal, would only affect individual trees, and would not likely alter the community structure substantially.

Alternative 2 would result in the permanent loss of at most 11,324 acres (12%) of oak woodland and savanna in the Plan Area (Table 6-7). These losses would result from permanent development projects within and outside the UPAs.

Permanent development adjacent to oak woodland and savanna could result in the introduction of invasive plant species and alterations in local ground and surface waters that could affect species composition of these natural communities.

Recurring maintenance activities within and adjacent to oak woodland and savanna could result in the inadvertent introduction of invasive plant species, removal and trimming of trees for utility and

transportation maintenance, ground disturbance associated with utility maintenance and the establishment of seasonal fire breaks, and the accidental release of vehicle oils and fuels, any of which could directly affect individual oak trees and could alter the species composition of these natural communities.

Considering the amount of protection, relevant AMMs to be implemented during permanent development projects, and long-term management of 20,491 acres (22%) of oak woodland and savanna in the Plan Area, Alternative 2 would not significantly impact the oak woodland and savanna natural community.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 11,324 acres of oak woodland and savanna in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of invasive plant species, ground disturbance, and trimming and removal of vegetation. However, implementation of the BRCP conservation strategy would protect up to 20,491 acres of oak woodland and savanna in the Plan Area and would also provide for the long-term management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 11,324 acres of oak woodland and savanna in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of invasive plant species, ground disturbance, and trimming and removal of vegetation. However, implementation of the BRCP conservation strategy would protect up to 20,491 acres of oak woodland and savanna in the Plan Area and would also provide for the long-term management and enhancement of protected habitat in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-38: Effects on grassland natural communities (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of up to 34,841 acres (34%) of grassland in the Plan Area (CM1). In addition, CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands to restore riparian habitat could remove up to 613 acres of grassland if all riparian restoration takes place in this community. The restoration of vernal pool and other seasonal wetlands would permanently alter 307 acres of grassland. Also, habitat enhancement and management activities in conservation lands could result in periodic disturbances of grasslands.

Alternative 2 would result in the permanent loss of at most 9,185 acres (9%) of grassland in the Plan Area. These losses would result from permanent development projects within and outside the UPAs.

Permanent development adjacent to grassland could result in the introduction of invasive plant species and alterations in local ground and surface waters that could affect species composition of these natural communities and affect vernal pools and seasonal wetlands within grasslands.

Recurring maintenance activities in and adjacent to grasslands could result in the inadvertent introduction of invasive plant species, ground disturbance associated with utility maintenance and the establishment of fire breaks that could alter surface and subsurface hydrology, and the accidental release of vehicle oils and fuels, any of which could alter the species composition of these natural communities and water quality in vernal pools and other seasonal wetlands found in grasslands.

Considering the amount of protection, relevant AMMs to be implemented during permanent development projects, and long-term management of 34,841 acres (34%) of grassland in the Plan Area, Alternative 2 would not significantly impact the grassland natural community.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 9,185 acres of grassland in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb this natural community through the introduction of invasive plant species and water pollutants, ground disturbance, and establishment of fire breaks. Further, covered activities on conservation lands to restore riparian habitat could remove up to 613 acres of grassland if all riparian restoration takes place in this community. The restoration of vernal pool and other seasonal wetlands would permanently alter 307 acres of grassland. Also, habitat enhancement and management activities in conservation lands could result in periodic disturbances of grasslands. However, implementation of the BRCP conservation strategy would protect and provide for the long-term management of up to 34,841 acres of grassland in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 9,185 acres of grassland in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb this natural community through the introduction of invasive plant species and water pollutants, ground disturbance, and establishment of fire breaks. Further, covered activities on conservation lands to restore riparian habitat could remove up to 613 acres of grassland if all riparian restoration takes place in this community. The restoration of vernal pool and other seasonal wetlands would permanently alter 307 acres of grassland. Also, habitat enhancement and management activities in conservation lands could result in periodic disturbances of grasslands. However, implementation of the BRCP conservation strategy would protect and provide for the long-term management of up to 34,841 acres of grassland in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-39: Effects on riparian natural communities (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of up to 6,370 acres (29%) and restoration of up to 189 acres of riparian natural communities in the Plan Area (CM1 and CM4). In addition, CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Alternative 2 would result in the permanent loss of at most 346 acres (1.5%) of riparian natural communities in the Plan Area. These losses would result from permanent development projects within and outside the UPAs.

Permanent development adjacent to riparian habitat could result in the introduction of invasive plant species and alterations in local ground and surface waters that could affect species composition of these natural communities.

Recurring maintenance activities within and adjacent to riparian natural communities could result in the inadvertent introduction of invasive plant species, removal and trimming of trees for utility and transportation maintenance, ground disturbance associated with utility maintenance, and the accidental release of vehicle oils and fuels, any of which could directly affect riparian vegetation.

Considering the amount of protection and restoration, relevant AMMs to be implemented during permanent development projects, and long-term management of 6,559 acres of riparian natural communities in the Plan Area, Alternative 2 would not significantly impact the riparian natural community in the Plan Area.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 346 acres of riparian natural communities in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of invasive plant species and water pollutants, ground disturbance, and tree trimming. However, implementation of the BRCP conservation strategy would protect up to 6,370 acres and restore up to 189 acres of riparian natural communities in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 346 acres of riparian natural communities in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of invasive plant species and water pollutants, ground disturbance, and tree trimming. However, implementation of the BRCP conservation strategy would protect up to 6,370 acres and restore up to 189 acres of riparian natural communities in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-40: Effects on wetland natural communities (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of up to 695 acres (2%) and restoration of up to 126 acres of wetland natural communities in the Plan Area (CM1 and CM4). In addition, CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands would generally avoid and minimize any disturbances of wetland natural communities through implementation of the BRCP's applicable AMMs. CM5 is the only conservation measure that could potentially affect the BRCP wetland natural communities.

Alternative 2 would result in the permanent loss of at most 48 acres (0.1%) of wetland natural communities in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. Effects on wetlands that are under USACE jurisdiction are addressed in Impact BIO-34.

Permanent development adjacent to wetlands could result in alterations in local ground and surface waters and the introduction of pollutants that could adversely affect wetland function and values.

Recurring maintenance activities adjacent to wetland natural communities could result in the inadvertent introduction of invasive plant species, the accidental release of chemical pollutants into wetlands, and sedimentation resulting from ground disturbing activities, any of which could adversely affect wetland functions and values.

Considering the amount of protection and restoration, relevant AMMs to be implemented during permanent development projects, and long-term management of 821 acres of wetland natural communities in the Plan Area, Alternative 2 would not significantly impact the wetland natural communities in the Plan Area.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 48 acres of wetland natural communities in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of invasive plant species and water pollutants and through ground disturbance. However, implementation of the BRCP conservation strategy would protect up to 695 acres and restore up to 126 acres of wetland natural communities in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 48 acres of wetland natural communities in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of invasive plant species and water pollutants and through ground disturbance. However, implementation of the BRCP conservation strategy would protect up to 695 acres and restore up to 126 acres of wetland natural communities in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-41: Effects on aquatic natural communities (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of up to 52 linear miles (15%) of stream channel and 80 ponds (27%) in the Plan Area (CM1). The conservation strategy would provide funding support for existing stormwater management programs to reduce the load and concentrations of pollutants in urban runoff entering streams and rivers in the Plan Area. In addition, CM5 would provide for the long-term management and enhancement of protected habitat in the Plan Area.

Covered activities on conservation lands would entail installation of fish screens on water diversions, removal of barriers from channels that impede upstream and downstream movement of covered fish species, and placement of gravel in channel to replenish the supply of salmonid spawning gravels; these activities would permanently alter the structure of some aquatic habitats.

Alternative 2 would result in the permanent loss of at most 52 ponds (11%) in the Plan Area. These losses would result from permanent development projects within and outside the UPAs. Effects on waters of the United States are addressed in Impact BIO-34.

Permanent development adjacent to aquatic natural communities could result in alterations in local ground and surface waters and the introduction of pollutants that could adversely affect aquatic function and values.

Recurring maintenance activities in and adjacent to aquatic natural communities could result in the accidental release of chemical pollutants into waters and sedimentation resulting from ground-disturbing activities; such releases could adversely affect aquatic functions and values.

Considering the amount of protection, relevant AMMs to be implemented during permanent development projects, and long-term management of aquatic natural communities in the Plan Area, Alternative 2 would not significantly impact the aquatic natural communities in the Plan Area.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 52 ponds in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of water pollutants. Covered activities on conservation land could permanently alter the structure of some aquatic habitats. However, implementation of the BRCP conservation strategy would protect up to 52 linear miles stream channel and 80 ponds in the Plan Area, would provide for the long-term management and enhancement of aquatic natural communities in the Plan Area, and would provide funding support for existing stormwater management programs to reduce the load and concentrations of pollutants in urban runoff entering streams and rivers in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 52 ponds in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could disturb these natural communities through the introduction of water pollutants. Covered activities on conservation land could permanently alter the structure of some aquatic habitats. However, implementation of the BRCP conservation strategy would protect up to 52 linear miles stream channel and 80 ponds in the Plan Area, would provide for the long-term management and enhancement of aquatic natural communities in the Plan Area, and would provide funding support for existing stormwater management programs to reduce the load and concentrations of pollutants in urban runoff entering streams and rivers in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-42: Effects on agricultural land cover for native wildlife (NEPA: less than significant; CEQA: less than significant)

Implementation of the BRCP conservation strategy would result in the protection of up to 26,962 acres of agricultural lands (23,182 acres of riceland and 3,780 acres of irrigated pasture/irrigated cropland) in the Plan Area (19%). In addition, CM5 would provide for the long-term management and enhancement of protected agricultural lands in the Plan Area.

Covered activities on conservation lands could temporarily disturb agricultural lands but would ultimately improve these lands for use by covered wildlife species.

Alternative 2 would result in the permanent loss of at most 3,822 acres (3%) of agricultural lands in the Plan Area. These losses would result from permanent development projects within and outside the UPAs.

Permanent development adjacent to agricultural lands could result in alterations in local ground and surface waters that could affect agricultural practices and the land's value for use by covered and other native wildlife species.

Recurring maintenance activities adjacent to agricultural lands could result in the inadvertent introduction of invasive plant species that could degrade the habitat value of agricultural crops for native wildlife species.

Considering the amount of protection, relevant AMMs to be implemented during permanent development projects, and long-term management of 26,962 acres of agricultural lands, Alternative 2 would not significantly impact agricultural lands that provide habitat for native wildlife species.

NEPA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 3,822 acres of agricultural land in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could result in alterations in local ground and surface waters that could affect agricultural practices and the land's value for use by covered and other native wildlife species, as well as degrade the habitat value of agricultural land due to the introduction of invasive plant species. However, implementation of the BRCP conservation strategy would protect up to 26,962 acres of agricultural lands in the Plan Area, and would provide for the long-term management and enhancement of protected agricultural lands in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 2 would result in the permanent loss of up to 3,822 acres of agricultural land in the Plan Area as a result of permanent development projects within and outside the UPAs. In addition, permanent development and recurring maintenance activities in the Plan Area could result in alterations in local ground and surface waters that could affect agricultural practices and the land's value for use by covered and other native wildlife species, as well as degrade the habitat value of agricultural land due to the introduction of invasive plant species. However, implementation of the BRCP conservation strategy would protect up to 26,962 acres of agricultural lands in the Plan Area, and would provide for the long-term management and enhancement of protected agricultural lands in the Plan Area. In addition, relevant AMMs would be implemented during permanent development projects in the Plan Area. Therefore, this impact would be less than significant. No mitigation is required.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a

reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact BIO-1: Effects on tricolored blackbird (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on tricolored blackbird would be similar to those under Alternative 2 but would result in permanent impacts on 9,033 acres (compared to 12,617 acres under Alternative 2) of modeled habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for tricolored blackbird under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for tricolored blackbird under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-2: Effects on yellow-breasted chat (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on yellow-breasted chat would be similar to those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-3: Effects on bank swallow (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on bank swallow would be similar to those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-4: Effects on western burrowing owl (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on western burrowing owl would be similar to those under Alternative 2 but would result in permanent impacts on 11,347 acres (compared to 14,496 acres under Alternative 2) of modeled habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for western burrowing owl under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for western burrowing owl under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-5: Effects on western yellow-billed cuckoo (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on western yellow-billed cuckoo would be similar to those under Alternative 2 but would result in permanent impacts on 13 acres (compared to 50 acres under Alternative 2) of modeled habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for western yellow-billed cuckoo under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for western yellow-billed cuckoo under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-6: Effects on greater sandhill crane (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on greater sandhill crane would be similar to those under Alternative 2 but would result in permanent impacts on 691 acres (compared to 1,764 acres under Alternative 2) of modeled habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for greater sandhill crane under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for greater sandhill crane under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-7: Effects on California black rail (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on California black rail would be similar to those under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-8: Effects on American peregrine falcon (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on American peregrine would be similar to those under Alternative 2 but would result in permanent impacts on 2,398 acres (compared to 3,759 acres under Alternative 2) of modeled foraging habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled foraging habitat for American peregrine under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled foraging habitat for American peregrine under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-9: Effects on Swainson's hawk (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Swainson's hawk would be similar to those under Alternative 2 but would result in permanent impacts on 8,310 acres (compared to 11,312 acres under Alternative 2) of modeled habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for Swainson's hawk under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for Swainson's hawk under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-10: Effects on white-tailed kite (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on white-tailed kite would be similar to those under Alternative 2 but would result in permanent impacts on 12,334 acres (compared to 16,183 acres under Alternative 2) of modeled habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for white-tailed kite under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for white-tailed kite under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-11: Effects on bald eagle (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on bald eagle would be similar to those under Alternative 2 but would result in permanent impacts on 4,699 acres (compared to 6,277 acres under Alternative 2) of modeled nesting and seasonal foraging habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled nesting and seasonal foraging habitat for bald eagle under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled nesting and seasonal foraging habitat for bald eagle under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-12: Effects on giant garter snake (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on giant garter snake would be similar to those under Alternative 2 but would result in permanent impacts on 14 miles of movement habitat and 1,322 acres of modeled habitat (compared to 18 miles and 3,194 acres, respectively, under Alternative 2) in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of habitat for giant garter snake under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of habitat for giant garter snake under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-13: Effects on Blainville's horned lizard (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Blainville's horned lizard would be the same as under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-14: Effects on western pond turtle (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on western pond turtle would be similar to those under Alternative 2 but would result in permanent impacts on 3,857 acres of modeled habitat, 5 linear miles of perennial stream habitat, and 21 ponds (compared to 4,606 acres, 5 linear miles, and 24 ponds, respectively, under Alternative 2) in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of habitat for western pond turtle under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of habitat for western pond turtle under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-15: Effects on foothill yellow-legged frog (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on foothill yellow-legged frog would be similar to those under Alternative 2 but would result in the loss of 1,069 acres of modeled habitat (compared to 1,189 acres under Alternative 2) in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for foothill yellow-legged frog under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for foothill yellow-legged frog under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-16: Effects on western spadefoot (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on western spadefoot would be similar to those under Alternative 2 but would result in the loss of 21 potential breeding ponds and 8,123 acres of the modeled western spadefoot habitat (non-pond breeding and upland) (compared to 22 ponds and 10,142 acres, respectively, under Alternative 2) in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of modeled habitat for western spadefoot under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for western spadefoot under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-17: Effects on Chinook salmon (spring- and fall-/late fall-run) and Central Valley steelhead (NEPA: less than significant; CEQA: less than significant)

Alternative 3 would result in the permanent alteration of 0.40 mile (0.3%) of spring-run Chinook habitat, 0.34 mile (0.2%) of fall-run Chinook salmon habitat, and 0.57 mile (0.3%) of steelhead habitat—slightly less than under Alternative 2. The same amount of critical habitat would be lost as under Alternative 1. All other effects would be the same as under Alternative 2. Overall, this would be a beneficial effect.

NEPA Determination: The resulting loss of habitat for Chinook salmon and Central Valley Steelhead under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of habitat for Chinook salmon and Central Valley Steelhead under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-18: Effects on Sacramento splittail (NEPA: less than significant; CEQA: less than significant)

The effects under Alternative 3 would be the same as those under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-19: Effects on green sturgeon (NEPA: less than significant; CEQA: less than significant)

Alternative 3 would result in the permanent alteration of 0.02 mile (0.04%) of green sturgeon habitat from construction of new or replacement bridges—less than under Alternative 2. All other effects would be similar to those under Alternative 2. Overall, effects on green sturgeon would be beneficial.

NEPA Determination: The resulting loss of habitat for green sturgeon under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of habitat for green sturgeon under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-20: Effects on river lamprey (NEPA: less than significant; CEQA: less than significant)

Alternative 3 would result in the permanent alteration of 0.02 mile (0.04%) of river lamprey habitat associated with construction of new and replacement bridges—less than under Alternative 2. All other effects would be the same as under Alternative 2.

NEPA Determination: The resulting loss of habitat for river lamprey under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of habitat for river lamprey under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-21: Effects on valley elderberry longhorn beetle (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on valley elderberry longhorn beetle would be similar to those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-22: Effects on vernal pool crustaceans (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on modeled vernal pool crustacean habitat would be the same as under Alternative 2.

Alternative 3 would result in loss of three vernal pool tadpole shrimp occurrences (18% of those in the Plan Area), three vernal pool fairy shrimp occurrences (10% of those in the Plan Area), and three occurrences of California linderiella (60% of those in the Plan Area). The Plan includes a commitment to avoid affecting known occurrences of Conservancy fairy shrimp.

Alternative 3 would also result in the permanent loss of up to 313 acres (5%) of designated critical habitat for vernal pool fairy shrimp in the Plan Area, and up to 474 acres (2%) of designated critical habitat for vernal pool tadpole shrimp.

The effects of other covered activities on vernal pool crustaceans would be similar to those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2 because not all mitigation and conservation actions for all vernal pool crustaceans would be implemented. Additionally, those mitigation actions that would be implemented would be on a case-by-case basis and would not be part of a large, interconnected regional conservation strategy; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-23: Effects on Red Bluff dwarf rush (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Red Bluff dwarf rush would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-24: Effects on Butte County meadowfoam (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Butte County meadowfoam would be similar to those under Alternative 2, but less modeled habitat would be affected. Alternative 3 would result in the loss of 294 acres of modeled primary habitat and 600 acres of modeled secondary habitat. Slightly less critical habitat for Butte County meadowfoam, 372.6 acres, would be affected under Alternative 3 than under Alternative 2.

NEPA Determination: The resulting loss of critical habitat and modeled primary and secondary habitat for Butte County meadowfoam under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of critical habitat and modeled primary and secondary habitat for Butte County meadowfoam under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-25: Effects on Butte County checkerbloom (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Butte checkerbloom would be similar to those under Alternative 2, but less modeled habitat would be affected. Alternative 3 would result in the loss of 2,539 acres of modeled habitat.

NEPA Determination: The resulting loss of modeled habitat for Butte County checkerbloom under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for Butte County checkerbloom under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-26: Effects on other special-status plants (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on other special-status plants would be similar to those under Alternative 2, but less modeled habitat for Ferris' milkvetch and Butte County golden clover would be affected. Covered activities would result in the loss of 129 acres of modeled habitat for Ferris' milkvetch and the loss of 202 acres of modeled habitat for Butte County golden clover.

As described under Alternative 2, the conservation and avoidance and minimization measures in the BRCP do not apply to noncovered special-status species; however covered activities that affect occurrences and habitat of noncovered special status plants would be mitigated on a project-by-project basis for discretionary projects. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review. In addition, ancillary benefits are expected to occur to these plant species as a result of the conservation strategy because it would establish a comprehensive reserve management program that would enhance habitat conditions in a variety of natural communities that may support these types of noncovered special-status plants.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant.

Impact BIO-27: Effects on Antioch Dunes and Sacramento anthicid beetles (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Antioch Dunes and Sacramento anthicid beetles would be the same as under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-28: Effects on hardhead (NEPA: less than significant; CEQA: less than significant)

The effects under Alternative 3 would be the same as those under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-29: Effects on noncovered special-status and migratory birds (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on noncovered birds would be similar to those under Alternative 2 but would affecting less habitat because the development footprint is expected to be smaller under this alternative when compared to Alternative 2. The impact acreages associated with the natural communities that provide the various habitats for these species are presented in Table 6-4.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

Construction activities; recurring maintenance activities; and BRCP restoration, enhancement, and management actions could adversely affect noncovered special-status nesting birds, as well as other birds protected under the MBTA. However, as described under Alternative 2 compliance with the MBTA and California Fish and Game Code would be required and pre-construction surveys, avoidance and minimization measures, and other actions to reduce disturbance to these species would be implemented.

NEPA Determination: The impact determination would be the same as Alternative 2; this impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; this impact would be less than significant. No mitigation is required.

Impact BIO-30: Effects on bats (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on bats would be similar to those under Alternative 2 but would result in permanent impacts on 10,278 acres (compared to 11,659 acres under Alternative 2) of potential tree roosting habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The impact determination would be the same as Alternative 2. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-31: Effects on American badger (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on American badger would be similar to those under Alternative 2 but would result in permanent impacts on 6,416 acres (compared to 7,776 acres under Alternative 2) of potential habitat in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The impact determination would be the same as Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2. The impact would be less than significant. No mitigation is required?

Impact BIO-32: Effects on migratory deer (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on migratory deer would be greatly reduced relative to those under Alternative 2. Alternative 3 would not affect critical winter deer habitat the Chico UPA and would reduce by approximately half the impacts on critical winter deer habitat for the Bucks Mountain deer herd west of Lake Oroville compared to Alternative 2. Impacts on the lower elevation winter deer habitat would also be reduced.

The conservation strategy under Alternative 3 would generally result in less protection than under Alternative 2; however, it is assumed that protection acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting impacts on habitat for migratory deer under this alternative is less than those under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting impacts on habitat for migratory deer under this alternative is less than those under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-33: Effects on wildlife migration corridors (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on wildlife migration corridors would be generally similar to those under Alternative 2, but Alternative 3 would result in less widespread development and consequently in less disruption of natural lands and wildlife corridors.

The conservation strategy for the development of ecological corridors is assumed to be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-34: Effects on wetlands and waters of the United States (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on wetlands and waters of the United States would be same as those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2 because not all mitigation and conservation actions for all wetlands would be implemented. Additionally, those mitigation actions that would be implemented would be on a case-by-case basis and would not be part of a large, interconnected regional conservation strategy; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-35: Effects on chaparral (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on chaparral would be similar to those under Alternative 2 but would result in the loss of 369 acres (compared to 389 acres under Alternative 2) of chaparral in the Plan Area (Table 6-7).

NEPA Determination: The resulting loss of chaparral acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of chaparral acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-36: Effects on coniferous forest (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on coniferous forest would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-37: Effects on oak woodland and savanna natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on oak woodland and savanna would be similar to those under Alternative 2 but would result in the loss of 9,943 acres (compared to 11,324 acres under Alternative 2) of oak woodland and savanna in the Plan Area (Table 6-7).

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of oak woodland and savanna acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of oak woodland and savanna acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-38: Effects on grassland natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on grasslands would be similar to those under Alternative 2 but would result in the loss of 7,825 acres or 7.6% (compared to 9,185 acres or 8.9% under Alternative 2) of grasslands in the Plan Area (Table 6-7), a difference of less than 2%.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of grasslands acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of grasslands acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-39: Effects on riparian natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on riparian would be same as those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-40: Effects on wetland natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on wetland natural communities would be same as those under Alternative 2.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that those resources subject to the same effects as under Alternative 2 would receive the same protection and restoration acreages.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-41: Effects on aquatic natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on aquatic natural communities would be similar to those under Alternative 2 but would result in the loss of 45 ponds (compared to 52 ponds under Alternative 2) in the Plan Area.

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of grasslands acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of grasslands acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-42: Effects on agricultural land cover for native wildlife (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on agricultural land cover would be similar to those under Alternative 2 but would result in the loss of 1,876 acres (compared to 3,822 acres under Alternative 2) of agricultural lands in the Plan Area (Table 6-7).

The conservation strategy under Alternative 3 would generally result in less protection and restoration than under Alternative 2; however, it is assumed that protection and restoration acreages for Alternative 3 would be scaled accordingly to the impact acreages.

NEPA Determination: The resulting loss of agricultural land cover acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of agricultural land cover acreage under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. Therefore, impact mechanisms for agricultural resources would be similar to those described for Alternative 2.

Impact BIO-1: Effects on tricolored blackbird (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on tricolored blackbird would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grasslands and an additional 3,920 acres of irrigated pasture and irrigated cropland that would increase the amount of protected foraging habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-2: Effects on yellow-breasted chat (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on yellow-breasted chat would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-3: Effects on bank swallow (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on bank swallow would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-4: Effects on western burrowing owl (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on western burrowing owl would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grassland, increasing the amount of protected foraging habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-5: Effects on western yellow-billed cuckoo (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on western yellow-billed cuckoo would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-6: Effects on greater sandhill crane (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on greater sandhill crane would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-7: Effects on California black rail (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on California black rail would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-8: Effects on American peregrine falcon (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on American peregrine falcon would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grassland, increasing the amount of protected foraging habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-9: Effects on Swainson's hawk (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on Swainson's hawk would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grassland, increasing the amount of protected foraging habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-10: Effects on white-tailed kite (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on white-tailed kite would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grassland, increasing the amount of protected foraging habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-11: Effects on bald eagle (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on bald eagle would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-12: Effects on giant garter snake (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on giant garter snake would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would increase protection of riceland by up to 35,310 acres, greatly increasing the amount of modeled giant garter snake habitat conserved in the Plan Area. This could constitute a beneficial effect.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-13: Effects on Blainville's horned lizard (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on Blainville's horned lizard would be the same as under Alternative 2.

The conservation strategy under Alternative 4 could potentially increase the amount of protected habitat for Blainville's horned lizard through the protection of an additional 9,850 acres of grasslands that could contain specific habitat elements for this species (e.g., bare and/or sandy soils).

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-14: Effects on western pond turtle (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on western pond turtle would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grassland that could contain ponds and suitable upland habitat for pond turtles.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-15: Effects on foothill yellow-legged frog (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on foothill yellow-legged frog would be the same as under Alternative 2.

The increased protection of grassland in the Cascade and Sierra Foothill CAZs under Alternative 4 could provide additional buffers to protect foothill yellow-legged frogs from disturbance and indirect effects.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-16: Effects on western spadefoot (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on modeled western spadefoot habitat would be the same as under Alternative 2.

The conservation strategy under Alternative 4 could potentially increase the amount of aquatic and upland habitat protected through the protection of an additional 9,850 acres of grasslands that could contain small vernal pools and ponds.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-17: Effects on Chinook salmon (spring- and fall-/late fall-run) and Central Valley steelhead (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-18: Effects on Sacramento splittail (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-19: Effects on green sturgeon (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-20: Effects on river lamprey (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-21: Effects on valley elderberry longhorn beetle (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on valley elderberry longhorn beetle would be the same as under Alternative 2.

The increased protection of grassland under Alternative 4 could increase protection of modeled valley elderberry longhorn beetle if protected areas are within 0.25 mile of riparian habitats and perennial streams, as defined in the BRCP valley elderberry longhorn beetle species model.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-22: Effects on vernal pool crustaceans (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on modeled vernal pool crustacean habitat would be the same as under Alternative 2.

The conservation strategy under Alternative 4 could potentially increase the amount of protected vernal pool crustacean habitat through the protection of an additional 9,850 acres of grasslands, if these grasslands contain small vernal pools that were not at the scale of mapping done for BRCP.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-23: Effects on Red Bluff dwarf rush (NEPA: less than significant; CEQA: less than significant)

Under Alternative 3, the effects on Red Bluff dwarf rush would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-24: Effects on Butte County meadowfoam (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on Butte County meadowfoam would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-25: Effects on Butte County checkerbloom (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on Butte County checkerbloom would be similar to those under Alternative 2. The amount of protected modeled habitat may be greater than under Alternative 2 if additional grassland is protected where Butte County checkerbloom is present.

NEPA Determination: The resulting loss of modeled habitat for Butte County checkerbloom under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

CEQA Determination: The resulting loss of modeled habitat for Butte County checkerbloom under this alternative is less than that under Alternative 2, and thus would be less than significant. No mitigation is required.

Impact BIO-26: Effects on other special-status plants (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on other covered and noncovered special-status plants would be similar to those under Alternative 2. The amount of protected modeled habitat may be greater than under Alternative 2 if additional grassland is protected where Ferris' milkvetch or other noncovered grassland species are present.

NEPA Determination: The impact determination would be the same as Alternative 2. Impacts would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant. No mitigation is required.

Impact BIO-27: Effects on Antioch Dunes and Sacramento anthicid beetles (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on Antioch Dunes and Sacramento anthicid beetles would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-28: Effects on hardhead (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-29: Effects on noncovered special status and migratory birds (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on noncovered special status birds and migratory birds would be the same as under Alternative 2. The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grasslands and an additional 3,920 acres of irrigated pasture and irrigated cropland that would increase the amount of protected habitat for species that use these habitats and this would be considered beneficial.

NEPA Determination: The impact determination would be the same as Alternative 2; this impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; this impact would be less than significant. No mitigation is required.

Impact BIO-30: Effects on bats (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on bats would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grasslands and an additional 3,920 acres of irrigated pasture and irrigated cropland that would increase the amount of protected foraging habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2. Therefore, this impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2. Therefore, this impact would be less than significant. No mitigation is required.

Impact BIO-31: Effects on American badger (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on American badger would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would protect an additional 9,850 acres of grassland, increasing the amount of protected habitat for this species.

NEPA Determination: The impact determination would be the same as Alternative 2, less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2, less than significant. No mitigation is required.

Impact BIO-32: Effects on migratory deer (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on migratory deer would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-33: Effects on wildlife migration corridors (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on wildlife corridors would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would increase protected lands in the Plan Area by up to 35,310 acres more than under Alternative 2. These additional protections would likely contribute to the establishment of the five ecological corridors identified in the conservation strategy.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-34: Effects on wetlands and waters of the United States (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on wetlands and waters of the United States would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-35: Effects on chaparral (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on chaparral would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-36: Effects on coniferous forest (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on coniferous forest would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-37: Effects on oak woodland and savanna natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on oak woodland and savanna would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-38: Effects on grassland natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on grassland would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would increase grassland protection by 9,850 acres, which would have a beneficial effect on grassland communities.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-39: Effects on riparian natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on riparian natural communities would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-40: Effects on wetland natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on wetland natural communities would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-41: Effects on aquatic natural communities (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on aquatic natural communities would be the same as under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact BIO-42: Effects on agricultural land cover for native wildlife (NEPA: less than significant; CEQA: less than significant)

Under Alternative 4, the effects on agricultural land cover would be the same as under Alternative 2.

The conservation strategy under Alternative 4 would increase riceland protection by up to 35,310 acres, greatly increasing the amount of agricultural lands conserved in the Plan Area.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

6.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for effects on biological resources is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*; the Local Agencies' general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

- Construction and operation of new flood control and water diversion facilities on the Sacramento River and the Feather River under control of DWR and USACE.
- Emergency activities.
- Ongoing agricultural land conversions (e.g., conversion of cropland to vineyard).
- Water transfers by various water districts within the County to water purveyors in other California counties.
- FERC relicensing to reoperate Oroville hydroelectric facilities.
- Implementation of Yuba Sutter HCP/NCCP.

This analysis assesses whether the covered activities would result in a cumulatively considerable incremental contribution that, when combined with past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Alternative 1—No Action (No Plan Implementation)

The County and the Cities of Chico, Gridley, and Oroville determined in their respective general plans that loss of habitat for special-status species from development associated with implementation of those general plans would constitute a cumulatively considerable contribution to a cumulative impact on biological resources in the region. Under Alternative 1, individual projects would be expected to mitigate direct and indirect effects on biological resources. However, those projects would have limited or no ability to mitigate cumulative effects on those resources because the BRCP's conservation strategy would not be in place to coordinate mitigation and conservation throughout the Plan Area. Accordingly, the cumulative impacts on biological resources would remain significant.

Alternative 2—Proposed Action

Development projects and operations and maintenance activities covered under the Local Agencies' general plans and by the BRCP would contribute to cumulative effects on biological resources in the Plan Area in combination with past impacts. However, the BRCP is designed to be comprehensive, covering almost all the development and operations and maintenance activities in the Plan Area. The full implementation of the BRCP provides for the conservation and long-term management of covered species and their habitats to offset the direct, indirect, and cumulative effects of these activities and projects. The BRCP is intended to contribute to the recovery of covered species, an objective that exceeds mitigation for the effects of the covered activities, including mitigation for cumulative effects. In addition, the BRCP establishes maximum limits for impacts on some covered species habitats and natural communities that are less than impacts that would result from implementation of the general plan in the absence of the Plan. Species not covered by the BRCP (i.e., noncovered special-status species) would also benefit from the BRCP conservation strategy's approach to preserving and enhancing large contiguous blocks of natural habitats and agricultural lands in the Plan Area. Considering the limits on take set by the BRCP, the regional scale of the conservation strategy designed to address cumulative impacts on covered species and natural communities, long-term management and monitoring of conservation lands, and BRCP's contribution to species recovery, Alternative 2 would not result in a cumulatively considerable contribution to cumulative effects on biological resources.

Alternative 3—Reduced Development/Reduced Fill

The contribution of Alternative 3 to cumulative effects on biological resources in the Plan Area and region would be similar to that under Alternative 2. Alternative 3 would generally result in fewer impacts on covered species' habitats and natural communities, but it would also generally result in less protection. Because of its comprehensive approach to mitigation, conservation, and covered species recovery, Alternative 3 would not result in a cumulatively considerable contribution to cumulative effects on biological resources.

Alternative 4—Greater Conservation

The contribution of Alternative 4 to cumulative effects on biological resources in the Plan Area and region would be similar to that under Alternative 2. Alternative 4 would result in more beneficial effects on species that use grasslands and ricelands. Consequently, Alternative 4 would not result in a cumulatively considerable contribution to cumulative effects on biological resources.

6.3 References

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7.1 Affected Environment

This section describes the regulatory setting for cultural resources as well as the types of cultural resources identified within the Plan Area.

7.1.1 Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies, or those they fund or permit, to consider the effects of their actions on cultural resources that may be eligible for listing or that are listed in the National Register of Historic Places (NRHP). Such resources are referred to as *historic properties*.

To determine whether an undertaking could affect historic properties, cultural resources (i.e., archaeological, historical, and architectural properties) must be identified and evaluated to determine if they are eligible for listing in the NRHP. The NRHP eligibility criteria are presented in the next section.

Although compliance with Section 106 is the responsibility of the lead federal agency, the work necessary to comply may be undertaken by others.

The Section 106 process entails six basic steps, listed below.

- Initiate consultation and public involvement.
- Identify and evaluate historic properties.
- Assess effects of the project on historic properties.
- Consult with the State Historic Preservation Officer (SHPO) regarding adverse effects on historic properties, resulting in a memorandum of agreement (MOA).
- Submit the MOA to the Advisory Council on Historic Preservation (ACHP).
- Proceed in accordance with the MOA.

A Programmatic Agreement (PA) may be negotiated when effects on historic properties cannot be fully determined prior to approval of the undertaking and when effects on historic properties are similar and repetitive or regional in scope (36 CFR Part 800.4[b][2]). USACE and BCAG are in the process of developing a PA to comply with Section 106 for the BRCP.

National Historic Preservation Act Eligibility Criteria

Eligibility criteria for listing in the NRHP are defined as the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- A. are associated with events that have made a contribution to the broad pattern of our history;
- B. are associated with the lives of people significant in our past;
- C. embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded, or are likely to yield, information important in prehistory or history (36 CFR 60.4).

As mentioned above, eligibility for listing in the NRHP also requires that a resource not only meet one of the four significance criteria, but also that it possess integrity. *Integrity* is the ability of a property to convey its significance. The evaluation of a resource's integrity must be grounded in an understanding of that resource's physical characteristics and how those characteristics relate to its significance.

State

California Environmental Quality Act

Actions that require funding, approval, or permits from a state agency, such as the action alternatives, are subject to CEQA. The CEQA statutes and State CEQA Guidelines require that agencies responsible for funding, permitting, or approving projects assess the potential impacts of the project on the environment, including historical resources. Under CEQA, a *historical resource* is defined as a resource listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR) or in a local register or survey pursuant to Sections 5020.1(k) and 5024.1(g) of the Public Resources Code.

Under the State CEQA Guidelines, an impact on a cultural resource is considered significant if a project would result in an effect that may change the significance of the resource (Public Resources Code Section 21084.1). Demolition, replacement, substantial alteration, and relocation of historic properties are actions that would change the significance of a historic resource (14 CCR 15064.5). The following steps are normally taken in a cultural resources investigation to comply with CEQA.

1. Identify cultural resources.
2. Evaluate the significance of the cultural resources to determine if they meet the CEQA definition of a historical resource.
3. Evaluate the effects of a project on all historical resources.
4. Develop and implement measures to mitigate the effects of the project on historical resources.

Historical Resources

The State CEQA Guidelines define three ways that a cultural resource may qualify as a historical resource (i.e., significant cultural resource) for the purposes of CEQA review.

1. The resource is listed in or determined eligible for listing in the CRHR.
2. The resource is included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or is identified as significant in a historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g) unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (14 CCR 15064.5[a]).

California Register of Historical Resources

A cultural resource may be eligible for inclusion in the CRHR if any of the following apply.

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in prehistory or history.

To be considered a *historical resource* for the purpose of CEQA, the resource must also have *integrity*, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance (14 CCR 4852[b]). Integrity is generally evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR.

Unique Archaeological Resources

A *unique archaeological resource* is defined in Section 21083.2 of the Public Resources Code as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria.

- It is associated with an event or person of recognized significance in California or American history or of recognized scientific importance in prehistory.
- It can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions.
- It has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind (PRC Section 21083.2).

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of *historical resource*. Consequently, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the CRHR. For the purposes of this CEQA cultural resources study, a resource is considered significant if it meets the CRHR eligibility (significance and integrity) criteria.

Discovery of Human Remains

With respect to the potential discovery of human remains, Section 7050.5 of the California Health and Human Safety Code (CHHSC) states the following:

- (a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code [PRC]. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the [PRC] or to any person authorized to implement Section 5097.98 of the [PRC].
- (b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the [PRC]. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.
- (c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission [NAHC]. (CHHSC §7050.5)

Of particular note to historical resources is subsection (c), requiring the coroner to contact the NAHC within 24 hours if discovered human remains are thought potentially to be of Native American origin. After notification, NAHC will follow the procedures outlined in Public Resources Code Section 5097.98, which include notification of most likely descendants (MLDs), if possible, and recommendations for treatment of the remains. Also, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under California law (Public Resources Code Section 5097.99).

Public Resources Code 5097.9

Public Resources Code Section 5097.9 states that no public agency or private party on public property shall “interfere with the free expression or exercise of Native American Religion.” The code further states that:

No such agency or party [shall] cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine ... except on a clear and convincing showing that the public interest and necessity so require.

County and city lands are exempt from this provision, except for parklands larger than 100 acres.

Local

In addition to federal and state regulations, many county and city general plans and ordinances address identification, maintenance, and protection of cultural resources. This section presents local cultural resources-related policies that could affect or be affected by the BRCP. Policies may either support or conflict with proposed project improvements.

County and City General Plans

The Local Agencies' general plans include cultural resources preservation elements that contain some mechanism pertaining to cultural resources in those communities. In general, the sections pertaining to archaeological and historical properties are put in place to afford the cultural resources a measure of local protection. The policies outlined in the individual general plans should be consulted prior to any undertaking or project. These policies are shown in Table 7-1.

Table 7-1. BRCP Plan Area Cultural Resources Policies

Document	Section
City of Biggs General Plan Update (2014)	Maintain and enhance the historic resources, qualities, and character of the City of Biggs, Goal CE-8
Butte County General Plan 2030 (2012)	Preserve important cultural resources, Goal COS-14; Ensure that new development does not adversely impact cultural resources, Goal COS-15; Respect Native American culture and planning concerns, Goal COS-16
Chico 2030 General Plan (2011a)	Protect and preserve archaeological, historical and other cultural resources to serve as significant reminders of the City's heritage and values, Goal CRHP-1; Reinvest in the archaeological, historical and other cultural resources that frame Chico's character and identity, Goal CRHP-2; Engage in and facilitate preservation efforts with local preservation and cultural entities, Goal CRHP-3
City of Gridley 2030 General Plan (2010)	To retain and improve Gridley's historic buildings for ongoing residential, retail, civic, and other uses and activities, Design Goal 1
Oroville 2030 General Plan (2009a)	Preserve Oroville's cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values, Goal OPS-14; Protect the City of Oroville's Native American heritage, Goal OPS-15

Butte County Code

Historic resources are not separately addressed in the Butte County Code but are incorporated into various sections of it. The County Code provides for the protection of cultural resources in Chapters 24 and 26. The Zoning chapter 24-82(2) requires the preservation of important cultural resources. More pointedly, it requires the preservation of sensitive archaeological sites and requires that historic areas be regarded as open space [(24-82[g]1a.4.)], [24-82(g)1b.3], and requires certain business zones to either provide a buffer around sensitive historic features or preserve and incorporate historic elements as design features [24-167(12)a, c].

Certified Local Governments

In 1980 the NHPA was amended to include the Certified Local Governments (CLG) program. The purpose of this program was to support local governments in efforts to identify, evaluate, and register historic resources within their province and integrate preservation into local planning. A CLG is a local government whose historic preservation program and/or ordinance has been certified pursuant to Section 101(c) of the NHPA. The CLG program is a partnership among local governments, the California Office of Historic Preservation, and the National Park Service, which is responsible for administering the National Historic Preservation Program. CLGs must be included in the process of nominating properties within their jurisdictions to the NRHP. They are also eligible to apply for a portion of the state's annual federal allotment of Historic Preservation Funds, which are designated for historic preservation projects.

Of the four cities within the Plan Area, Chico is the only CLG, and maintains by means of city code (Ord. 2410 Section 18) its historic preservation plan, including, but not limited to, designation criteria, the public hearing process, maintenance and relocation requirements for historic properties, and incentives for maintenance and development of historic properties.

7.1.2 Environmental Setting

The County General Plan EIR setting section for cultural resources includes a detailed discussion of the Prehistoric Setting, the Ethnographic Setting, and the Historical Setting of Butte County on pages 4.5-1 through 4.5-10 (Butte County 2010). The following is a summary of that detail, focusing on content pertinent to the BRCP Plan Area. The cultural resources setting section of the County General Plan EIR is incorporated into this document by reference.

Prehistoric Setting

The history of human occupation and use of the Sacramento Valley and northern Sierra Nevada foothills is characterized by a number of related trends taking place throughout the last 10,000 years. Archaeologically visible cultural patterns can be attributed to responses to gradual changes in climate, resource availability, and human population growth. The cultural responses to these changes include technological specialization, resource intensification, sedentism, and the development of regional economic networks. The prehistory of these two geographic areas follows similar but varying temporal outlines, depending on the geographic area under consideration.

Sacramento Valley

It is probable that humans have inhabited the Sacramento Valley for the last 10,000 years. However, evidence of early occupation is likely deeply buried under alluvial sediments deposited during the late Holocene, although rare archaeological remains of the early period have been identified in and around the Central Valley. Early archaeological manifestations are categorized as the Farmington Complex, which is characterized by core tools and large, reworked percussion flakes.

Later periods are better understood because of more abundant representation in the archaeological record. Fredrickson (1973:7-6) identified three general patterns of cultural manifestations for the period between 4500 B.P. and 2000 B.P.: the Windmiller Pattern (4500–3000 B.P.), the Berkeley Pattern (3500–2500 B.P.), and the Augustine Pattern (2500–2000 B.P.).

Northern Sierra Nevada

The current cultural chronology for the northern Sierra Nevada consists of five phases. The Washoe Lake Phase (before 10,000 B.P.) is the earliest known evidence of human occupation of the region and is represented by fluted projectile points. Presumably, groups during this phase were highly mobile. The Tahoe Reach Phase (10,000–8000 B.P.) is characterized by large stemmed points used to hunt a variety of mammals and the occasional use of ground stone artifacts used for plant resources. Little is known about the subsequent Spooner Phase (8000–5000 B.P.) because temporally diagnostic artifacts are lacking. The Early (5000–3000 B.P.) and Late (3000–1300 B.P.) Martis Phases are both highly visible in the archaeological record, implying a significant increase in human population in the region. They are distinguished by changes in projectile point styles while grinding artifacts, house pit features, and storage features are present throughout these phases. The Early Kings Beach Phase marks the introduction of the bow and arrow to the region and specialization in flaked-stone tool production. The Late Kings Beach Phase is represented by a decrease in archaeological sites and features, possibly indicating a change in settlement patterns.

Ethnographic Setting

Generally, western Butte County lies in the traditional territory of the Konkow, or Northwestern Maidu. Konkow territory encompassed the lower Feather River drainages from west of Richbar almost to the Sutter Buttes, and the Sacramento River area from Butte City in the south to Butte Meadows in the north. Neighboring tribes consisted of the Yana to the north, the Northeastern Maidu to the east, the Nisenan to the south, and the Nomlaki to the west. The Konkow language is classified as part of the Penutian linguistic stock. Penutian speakers appear to have entered California relatively late, settling nearly half the state by approximately 200 years ago.

Historic Setting

Although Spaniards and trappers explored areas within Butte County in the early nineteenth century, Euroamerican influence was not significant in the region until the California Gold Rush (1848–1852). During this time, the influx of miners and those who offered support services overwhelmed the indigenous people and natural resources. Mining camps were established throughout the region along gold-bearing streams and rivers, and some developed into economic hubs. When California was admitted as the thirty-first state in 1850, Butte County was among the original counties. Ten years later the county's first official city, Chico, was incorporated. After the Gold Rush, people who stayed in the region focused their economic pursuits on agriculture, which was boosted as the railroads connected the county to other regions in the state and across the country. Today, agriculture remains a mainstay of the regional economy, with such lucrative crops and livestock as rice, almonds, walnuts, peaches, cattle, swine, and poultry.

7.1.3 Cultural Resource Types and Sensitivity

Archaeological Resources

Previous studies in the general region provide reasonable expectations for the range of archaeological property types likely to occur in Butte County. Recorded prehistoric site types include habitation (long-term occupation) sites, limited occupation sites, hunting/processing camps, lithic reduction stations, quarries, rock art sites, bedrock milling features, and burial locations. Sites may be classified as more than one type. For example, habitation sites may be associated with rock

art. The most common prehistoric sites found in the Butte County area are temporary occupation sites. Ethnographic site types mirror prehistoric site types but display artifacts or features that indicate contact and interaction with Euroamerican populations. Historic period archaeological site types and features include the remains of mining camps, farmsteads, ranches, railroad features, structures and linear features (e.g., roads and trails), camps, privies, and refuse scatters.

The prehistoric archaeological sensitivity of Butte County is generally considered high, particularly in areas near water sources or on terraces along watercourses. In particular, major watersheds in the Sierra Nevada foothills possess river terraces that are rich in archaeological resources. In the Sacramento Valley, land along the margins of the Sacramento River and other major waterways are rich in prehistoric archaeological resources, although such resources are usually found on natural rises that would have protected the inhabitants from frequent floods. Additional prehistoric deposits may be buried in similar locations—in natural buried contexts such as under alluvial deposits and in cultural buried contexts such as below constructed levees or mixed in as a portion of levee fill material.

The locations of historic period archaeological sites are more difficult to predict because historical populations had greater ease of transportation and were not dependent on proximity to water and vegetal resources as prehistoric populations. Nevertheless, historic period sites are likely to be located near areas that were used for farming, ranching, mining, settlement, or transportation corridors.

Of the 2,982 archaeological sites recorded in Butte County, 1,430 sites are prehistoric archaeological resources, 1,463 sites are historic period sites, and 89 sites contain both a prehistoric and a historical archaeological component. According to the California Office of Historic Preservation, 129 archaeological sites are listed in, or have been formally recommended eligible for, listing in the NRHP, and are therefore considered eligible for listing in the CRHR. Of these 129 NRHP-eligible or listed sites, 98 are prehistoric archaeological sites, 25 are historic period archaeological sites, and six are archaeological sites that contain both prehistoric and historic period components.

Historic Resources

Historic period cultural resources are associated with the themes represented by the historic events summarized above (mining, transportation, agriculture, municipalities). Concentrations of historic resources are expected adjacent to transportation corridors (historic highways, railroads, navigable waterways); on rural ranch lands (irrigations features such as ditches and canals); in areas of natural resources extraction (rock, soil, mineral, and timber); and within historic neighborhoods and business districts. A broad-brushed characterization of the historic resources in the county is provided below, based on a review of the California Historic Resources Inventory and listings of California State Historical Landmarks and California Points of Historical Interest.

California Historic Resources Inventory

The Historic Property Data File Historic Resources Inventory (HRI), which is maintained by the State Office of Historic Preservation, identifies properties that have been surveyed, as well as properties that appear eligible, have been determined eligible for listing, or are listed in the NRHP or CRHR. In general, listing a property in the NRHP involves submission of a formal nomination form that requires concurrence from SHPO, the State Historical Resources Commission, and the Keeper of the National Register. Properties that are evaluated and found, with SHPO concurrence, to be eligible for listing under one or more of the NRHP criteria but are never nominated, are afforded the same

protections for federally funded projects as listed properties. Properties listed or found eligible for listing in the NRHP are also automatically eligible for the CRHR. The HRI also includes buildings that have been identified as historically significant by local government agencies. The property types listed in the HRI are typically non-archaeological in nature (for confidentiality reasons) and encompass numerous architectural and engineering features.

It should be noted that because the HRI is frequently updated as new resources are continuously located through survey work and other means, the following tables should not be considered the final or the most comprehensive listings.

A total of 846 resources have been recorded in Butte County, as summarized in Table 7-2. Twenty-six NRHP-listed properties, listed in Table 7-3, are located in Butte County.

Table 7-2. Butte County Historic Period Resources Listed In or Eligible for the NRHP

Vicinity	Quantity
Oroville	184
Chico	511
Paradise	23
Gridley	42
Biggs	10
Other	76
Total	846

California State Historical Landmarks

The State of California began memorializing sites of statewide historic importance in 1932 with what is now known as the California State Historical Landmarks program. The criteria for consideration have been refined over the long history of this program; today a State Historical Landmark (SHL) must be the first, last, only, or most significant of a type in a large geographical area. Eight resources in Butte County have been designated as California Historical Landmarks (Table 7-3).

California Points of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and must be one of the following.

- The first, last, only, or most significant of its type in the state or within the local geographic region (city or county).
- Associated with an individual or group having a profound influence on the history of the local area.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction.
- One of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

If a Point of Historical Interest is subsequently granted status as a Landmark, the Point designation will be retired. Twenty-one resources in Butte County are Points of Historical Interest (Table 7-3 below).

Table 7-3. Butte County Historic Period Resources by Designation

Resource	Vicinity	NRHP Listed	State Historical Landmark	Point of Historical Interest
14-Mile House Site	Chico			X
A.H. Chapman House	Chico	X		X
Allen-Sommer-Gage House	Chico	X		
Berkeley Olive Association Historic District	Oroville	X		
Bidwell Mansion	Chico	X		
Bidwell Mill Site	Chico			X
Butte County Railroad Depot	Paradise			X
California-Oregon Railroad Depot	Gridley			X
Centerville Schoolhouse	Chico	X		X
Cherokee Townsite and Spring Valley Mine	Oroville			X
Chico African Methodist Episcopal Church South	Chico			X
Chico Forestry Station and Nursery	Chico		X	
Chinese Cemetery	Oroville			X
Chinese Temple	Oroville		X	
Discovery Site of Last Yahí Indian	Oroville		X	
Dogtown Nugget Discovery Site	Magalia		X	
Fagan House	Gridley			X
Fong Lee Company	Oroville	X		
Forks of Butte	Paradise	X		
Garrott's Sawmill	Oroville			X
Gianella Bridge site	Hamilton City			X
Hazel Hotel	Gridley	X		
Honey Run Covered Bridge	Paradise	X		X
Hooker Oak	Chico		X	
Inskip Hotel	Stirling City	X		
Jewish Cemetery	Oroville			X
Long's Bar	Oroville			X
Lot Museum-Sank Park	Oroville			X
Manzanita School	Gridley			X
Mud Creek Canyon	Chico	X		
Old Chinese Cemetery	Oroville			X
Old Suspension Bridge	Oroville		X	
Oregon City	Oroville		X	
Oroville Carnegie Library	Oroville	X		
Oroville Cemetery	Oroville			X
Oroville Chinese Temple	Oroville	X		

Resource	Vicinity	NRHP Listed	State Historical Landmark	Point of Historical Interest
Oroville Commercial District	Oroville	X		
Oroville Inn	Oroville	X		
Oroville Odd Fellows Home Site (Bella Vista Hotel)	Oroville			X
Patrick Ranch House	Chico	X		
Patrick Rancheria	Chico	X		
Rancho Chico and Bidwell Adobe	Chico		X	
Richardson Springs Resort Hotel	Chico			X
Silberstein Park Building	Chico	X		
South of Campus Neighborhood	Chico	X		
Southern Pacific Depot	Chico	X		
St. John's Episcopal Church	Chico	X		
Stansbury House	Chico	X		
State Theatre	Oroville	X		
US Post Office – Chico Midtown Station	Chico	X		
US Post Office – Oroville Main	Oroville	X		
W.W. Durham House	Durham	X		

Local Historical Societies

Local historical societies, museums, and organizations throughout the greater Plan Area also work in conjunction with their associated cities or the County toward the identification and protection of cultural resources. These organizations are largely nonprofit organizations that achieve their purpose through educating the public and creating awareness of the historical heritage of their communities. They are also involved in protecting the history of the area through the documentation, publication, and/or preservation of historical materials and artifacts pertaining to the community.

7.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for cultural resources in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).¹ The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

¹ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

7.2.1 Methods for Impact Analysis

Impacts on cultural resources were assessed on the basis of the proposed action and alternatives, consultation with County planning staff, and review of applicable documents such as the Local Agencies' general plans.

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on cultural resources are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on cultural resources.

In adopting the EIRs for the local general plans, each participating jurisdiction determined that the programmatic impacts on cultural resources would be mitigated to a less-than-significant level through the implementation of general plan policies and the adoption of identified mitigation measures (City of Gridley 2009; City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). It is assumed that all covered activities approved by the participating Local Agency would be consistent with the policies of the respective general plan and would be subject to all applicable mitigation measures identified, such that impacts would be adequately mitigated. For development-related activities, no additional mitigation measures are identified in this EIS/EIR chapter beyond the policies identified in the general plans. Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on cultural resources could occur primarily during construction or maintenance of these activities. The methodology for evaluating impacts to cultural resources also incorporates standard best management practices (BMPs) required by Caltrans during construction of transportation projects and summarized in Appendix D. The analysis assumes that Caltrans would incorporate these BMPs where appropriate on transportation projects within the Plan Area. USACE, SHPO, and BCAG are developing a PA for the BRCP. The PA will define how the agencies will complete management steps necessary to satisfy Section 106 of the NHPA. This document will provide a mechanism for identifying historic properties that may be adversely affected by the NCHP/NCCP and resolving adverse effects.

7.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

For the purposes of this analysis, and based on the implementation guidelines for NEPA, CEQA, and Section 106 of the NHPA, an impact was considered to be significant and to require mitigation if it would result in any of the following.

- A substantial adverse change in the significance of a historical or archaeological resource, as defined as defined in State CEQA Guidelines Section 15064.5.
- Alteration of characteristics of a property that may qualify it for listing in the NRHP.
- Effects that would diminish the integrity of an NRHP-listed or eligible property, as defined in this chapter in Section 7.1, *Affected Environment*.
- Disturb any human remains, including those interred outside of formal cemeteries.

7.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate impacts to cultural resources through the BRCP. Under the Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). With respect to cultural resources, projects subject to federal jurisdiction would be required to comply with Section 106. Projects subject to CEQA review would require compliance with the cultural resources regulations contained in CEQA. No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on cultural resources associated with the conservation strategy and conservation measures would not occur.

Impact CUL-1: Cause alteration of characteristics of known or unknown cultural resources that may qualify for listing in the NRHP (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 1 have the potential to adversely affect or significantly impact NRHP-eligible historic properties. Activities that could adversely affect NRHP-eligible archaeological resources would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Activities that could adversely affect NRHP-eligible built resources could result from a wide range of activities under Alternative 1 (e.g., implementation of the general plans, Caltrans projects, and water and irrigation district projects). The cultural resources policies and actions outlined in the Local Agencies' general plans and those BMPs identified in Appendix D related to Caltrans projects provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Some ground disturbing activities undertaken by the water and irrigation districts have the potential to occur in jurisdictional waters of the U.S. (e.g., maintenance activities to remove aquatic vegetation from canals or replacement of weirs) and may require permits from the U.S. Army Corps of Engineers or another federal agency. As part of the permitting process the federal agency would require Section 106 consultation on a project-by-project basis to ensure alterations of characteristics of known or unknown archeological resources or identified or not yet identified historic built resources would not occur. For other ground disturbing activities undertaken by the water and irrigation districts (e.g., mowing vegetation or

replacement of water structures) it is anticipated that these activities would occur in areas that were already disturbed and thus would have a very low potential to alter characteristics of a known or unknown cultural resource.

NEPA Determination: Alternative 1 would result in ground-disturbing activities and other development-oriented activities that could alter the characteristics of known or unknown cultural resources that may qualify for listing in the NRHP. However, general plan policies and measures, as well as Caltrans BMPs, and Section 106 consultation requirements, are expected to reduce potential alterations to levels that are below significance. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would result in ground disturbing activities and other development oriented activities that could alter the characteristics of known or unknown cultural resources that may qualify for listing in the NRHP. However, general plan policies and measures, as well as Caltrans BMPs,, are expected to reduce potential alterations to levels that are below significance. The impact would be less than significant. No mitigation is required.

Impact CUL-2: Cause a change in the significance of known or unknown cultural resources that may qualify for listing in the CRHR (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 1 have the potential to alter the CRHR eligibility of known and unknown cultural resources. Any alteration of characteristics of archaeological resources that could affect their CRHR eligibility would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Alterations to the characteristics of built-environment resources that could affect their CRHR eligibility could result from a wide range of activities under Alternative 1, as described in Impact CUL-1. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans BMPs, provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Water and irrigation district ground disturbing activities would either require Section 106 consultation if a federal permit is required and need to satisfy those requirements on a project-by-project basis, or would have a very low potential to affect known and unknown cultural resources.

NEPA Determination: Alternative 1 would result in ground-disturbing activities and other development-oriented activities that could change a CRHR-eligible known or unknown resource. However, general plan policies and measures, as well as Caltrans BMPs and Section 106 consultation requirements, are expected to reduce potential alterations to levels that are below significance. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would result in ground-disturbing activities and other development-oriented activities that could change a CRHR-eligible known or unknown resource. However, general plan policies and measures, as well as Caltrans BMPs are expected to reduce potential alterations to levels that are below significance. The impact would be less than significant. No mitigation is required.

Impact CUL-3: Cause a change in the integrity, as defined by NHPA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 1 have the potential to cause a change in the integrity, as defined by NHPA, of known and unknown cultural resources. Any such change of integrity of archaeological

resources would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Any change of integrity of built-environment resources could result from a wide range of activities under Alternative 1, as described in Impact CUL-1. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans BMPs, provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Water and irrigation district ground disturbing activities would either require Section 106 consultation if a federal permit is required and need to satisfy those requirements on a project-by-project basis, or would have a very low potential to affect known and unknown cultural resources.

NEPA Determination: Alternative 1 could result in a change in the NHPA-defined integrity of known or unknown cultural resources through ground disturbing activities or other development oriented activities. However, general plan policies and measures, as well as Caltrans BMPs and Section 106 consultation requirements, are expected to reduce those changes to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 could result in a change in the NHPA-defined integrity of known or unknown cultural resources through ground disturbing activities or other development oriented activities. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce those changes to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

Impact CUL-4: Cause a change in the integrity, as defined by CEQA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 1 have the potential to cause a change in the integrity, as defined by CEQA, of known and unknown cultural resources. Any change of integrity, as defined by CEQA, on archaeological resources would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Any change of integrity of built-environment resources could result from a wide range of activities under Alternative 1, as described in Impact CUL-1. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans BMPs, provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Water and irrigation district ground disturbing activities would either require Section 106 consultation if a federal permit is required and need to satisfy those requirements on a project-by-project basis, or would have a very low potential to affect known and unknown cultural resources.

NEPA Determination: Alternative 1 could change the CEQA-defined integrity of known or unknown cultural resources through ground-disturbing activities or other development-oriented activities. However, general plan policies and measures, as well as Caltrans BMPs and Section 106 requirements, are expected to reduce those changes to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 could change the CEQA-defined integrity of known or unknown cultural resources through ground-disturbing activities or other development-oriented activities. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce those changes to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

Impact CUL-5: Disturb known or unknown human remains, including those interred outside of formal cemeteries (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 1 have the potential to disturb known or unknown human remains. Disturbance of human remains under Alternative 1 would most likely occur during ground-disturbing activities. The locations of known human remains are often obtained from government documents, archival data, oral histories, or CHRIS data on previously recorded cultural resources or previous cultural resources studies. Unknown human remains are typically identified during archaeological construction monitoring, field surveys, testing, or data recovery. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans BMPs, provide measures that would adequately reduce potential impacts on human remains to a less-than-significant level. Water and irrigation district ground disturbing activities would either require Section 106 consultation if a federal permit is required and need to satisfy those requirements on a project-by-project basis, or would have a very low potential to affect known and unknown cultural resources.

NEPA Determination: Alternative 1 could disturb known or unknown human remains through ground-disturbing activities from development. However, general plan policies and measures, as well as Caltrans BMPs and Section 106 consultation requirements, that require construction monitoring, field surveys, and testing are expected to reduce disturbances to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 could disturbance known or unknown human remains through ground-disturbing activities from development. However, general plan policies and measures, as well as Caltrans BMPs, that require construction monitoring, field surveys, and testing are expected to reduce disturbances to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Covered activities relevant to cultural resources are those that involve construction or those that involve earthmoving activities. Covered activities that would involve construction (including earthmoving activities) are all development activities consistent with the Local Agencies' general plans, state and local transportation projects, and water district canal installation. Conservation measures that involve earthmoving activities are certain restoration actions under the conservation strategy (CM4–CM11, CM13, CM14 and Activities to Improve Urban Stormwater Water Quality). Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operations-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics including small projects or infill projects.

Impact CUL-1: Cause alteration of characteristics of known or unknown cultural resources that may qualify for listing in the NRHP (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 2 have the potential to adversely affect or significantly impact NRHP-eligible historic properties. Activities that could adversely affect NRHP-eligible archaeological resources would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Activities that could adversely affect NRHP-eligible built resources could result from a wide range of activities under Alternative 2: implementation of the general plans, Caltrans projects, and water and irrigation district projects and the establishment and management of conservation areas under the proposed BRCP could result in the loss of important previously identified built-environment and unknown archaeological resources. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans BMPs, provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level (as described under Alternative 1). Additionally, implementation of the PA would provide measures to ensure that these cultural resources are identified, evaluated, and appropriately treated. Activities undertaken by the water and irrigation districts may have a federal nexus, such as requiring a federal permit as described in Alternative 1 Impact CUL-1, would be covered by the PA. Activities undertaken by the water and irrigation districts that do not have a federal nexus as described in Alternative 1 Impact CUL-1 would occur in areas that are currently disturbed and therefore would have a very low potential to alter characteristics of a known or unknown resource.

NEPA Determination: Alternative 2 could adversely affect known and unknown NRHP-qualified cultural resources as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 could alter characteristics of known and unknown NRHP-qualified cultural resources as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy. The impact would be less than significant. No mitigation is required.

Impact CUL-2: Cause a change in the significance of known or unknown cultural resources that may qualify for listing in the CRHR (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 2 have the potential to alter the CRHR eligibility of known and unknown cultural resources. Any alteration of characteristics of archaeological resources that could affect their CRHR eligibility would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Alterations to the characteristics of built-environment resources that could affect their CRHR eligibility could result from a wide range of activities under Alternative 2: implementation of the general plans, Caltrans projects, water and irrigation district projects and establishment and management of conservation areas under the proposed BRCP could result in the loss of important previously unknown built-environment and archaeological resources. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans

BMPs, provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Additionally, implementation of the PA would provide measures to ensure that these cultural resources are identified, evaluated, and appropriately treated. Activities undertaken by the water and irrigation districts may have a federal nexus, such as requiring a federal permit as described in Alternative 1 Impact CUL-1, and these activities would be covered by the PA. Activities undertaken by the water and irrigation districts that do not have a federal nexus as described in Alternative 1 Impact CUL-1 would occur in areas that are currently disturbed and therefore would have a very low potential to alter characteristics of a known or unknown resource.

NEPA Determination: Alternative 2 could change cultural resources that may qualify for listing in the CRHR as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 could change cultural resources that may qualify for listing in the CRHR as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy. The impact would be less than significant. No mitigation is required.

Impact CUL-3: Cause a change in the integrity, as defined by NHPA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 2 have the potential to cause a change in the integrity, as defined by NHPA, of known and unknown cultural resources. Any such change of integrity of archaeological resources would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Any change of integrity of built-environment resources could result from a wide range of activities under Alternative 2: implementation of the general plans, Caltrans projects, and water and irrigation district projects and the establishment and management of conservation areas under the proposed BRCP could result in the loss of important previously unknown built-environment and archaeological resources. The cultural resources policies and actions outlined in the Local Agencies' general plans, as well as Caltrans BMPs, provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Additionally, implementation of the PA would provide measures to ensure that these cultural resources are identified, evaluated, and appropriately treated. Activities undertaken by the water and irrigation districts may have a federal nexus, such as requiring a federal permit as described in Alternative 1 Impact CUL-1, and these activities would be covered by the PA. Activities undertaken by the water and irrigation districts that do not have a federal nexus as described in Alternative 1 Impact CUL-1 would occur in areas that are currently disturbed and therefore would have a very low potential to alter characteristics of a known or unknown resource.

NEPA Determination: Alternative 2 could change NHRA-defined integrity of cultural resources as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 could change NHRA-defined integrity of cultural resources as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy. The impact would be less than significant. No mitigation is required.

Impact CUL-4: Cause a change in the integrity, as defined by CEQA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 2 have the potential to cause a change in the integrity, as defined by CEQA, of known and unknown cultural resources. Any change of integrity, as defined by CEQA, on archaeological resources would typically, though not exclusively, include ground-disturbing activities in previously undisturbed sediments. Any change of integrity of built-environment resources could result from a wide range of activities under Alternative 2: implementation of the general plans, Caltrans projects, water and irrigation district projects and establishment and management of conservation areas under the proposed BRCP could result in the loss of important previously unknown built-environment and archaeological resources. The cultural resources policies and actions outlined in the Local Agencies' general plans provide measures that would adequately reduce potential impacts on cultural resources to a less-than-significant level. Additionally, implementation of the PA would provide measures to ensure that these cultural resources are identified, evaluated, and appropriately treated. Activities undertaken by the water and irrigation districts may have a federal nexus, such as requiring a federal permit as described in Alternative 1 Impact CUL-1, and these activities would be covered by the PA. Activities undertaken by the water and irrigation districts that do not have a federal nexus as described in Alternative 1 Impact CUL-1 would occur in areas that are currently disturbed and therefore would have a very low potential to alter characteristics of a known or unknown resource.

NEPA Determination: Alternative 2 could change CEQA-defined integrity of cultural resources as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 could change CEQA-defined integrity of cultural resources as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy. The impact would be less than significant. No mitigation is required.

Impact CUL-5: Disturb known or unknown human remains, including those interred outside of formal cemeteries (NEPA: less than significant; CEQA: less than significant)

Activities under Alternative 2 have the potential to disturb known or unknown human remains. Disturbance of human remains under Alternative 2 would most likely occur during ground-disturbing activities. Implementation of the general plans, Caltrans projects, water and irrigation district projects, and establishment and management of conservation areas under the proposed BRCP could result in the loss or disturbance of previously unknown human remains. The locations of known human remains are often obtained from government documents, archival data, oral histories,

or CHRIS data on previously recorded cultural resources or previous cultural resources studies. Unknown human remains are typically identified during archaeological construction monitoring, field surveys, testing, or data recovery. The cultural resources policies and actions outlined in the Local Agencies' general plans and Caltrans BMPs provide measures that would adequately reduce potential impacts on human remains to a less-than-significant level. Moreover, activities under Alternative 2 would comply with the California Health and Human Safety Code (Section 7050.5) and Public Resources Code Section 5097.98, which govern the procedures for discovery of and treatment of human remains.

NEPA Determination: Alternative 2 could disturb known or unknown human remains as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, that require construction monitoring, field surveys, and testing plus the requirements of the California Health and Human Safety Code (Section 7050.5) and Public Resources Code Section 5097.98, are expected to reduce disturbances to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 could disturb known or unknown human remains as described for Alternative 1. However, general plan policies and measures, as well as Caltrans BMPs, that require construction monitoring, field surveys, and testing plus the requirements of the California Health and Human Safety Code (Section 7050.5) and Public Resources Code Section 5097.98, are expected to reduce disturbances to levels that are below significance. Therefore, the impact would be less than significant. No mitigation is required.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2. Therefore, the impact mechanisms related to cultural resources under Alternative 3 would be the same as those under Alternative 2.

Impact CUL-1: Cause alteration of characteristics of known or unknown cultural resources that may qualify for listing in the NRHP (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could alter characteristics of known and unknown NRHP-qualified cultural resources. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-2: Cause a change in the significance of known or unknown cultural resources that may qualify for listing in the CRHR (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could change cultural resources that may qualify for listing in the CRHR. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-3: Cause a change in the integrity, as defined by NHPA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could change NHPA-defined integrity of cultural resources. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-4: Cause a change in the integrity, as defined by CEQA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could change CEQA-defined integrity of cultural resources. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-5: Disturb known or unknown human remains, including those interred outside of formal cemeteries (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. General plan policies and measures, as well as Caltrans BMPs, that require construction monitoring, field surveys, and testing plus the requirements of the California Health and Human Safety Code (Section 7050.5) and Public Resources Code Section 5097.98, are expected to reduce disturbances to levels that are below significance.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. Conservation of lands currently in open space or agriculture would not increase the potential for effects on cultural resources, because there would be no change in the uses of the land that would result in more ground disturbance or effects on structures. Therefore, impact mechanisms related to cultural resources would be similar to those described for Alternative 2. All NEPA and CEQA impact determinations for Impacts CUL-1 through CUL-5 would be less than significant. No mitigation is required.

Impact CUL-1: Cause alteration of characteristics of known or unknown cultural resources that may qualify for listing in the NRHP (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could alter characteristics of known and unknown NRHP-qualified cultural resources. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-2: Cause a change in the significance of known or unknown cultural resources that may qualify for listing in the CRHR (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could change cultural resources that may qualify for listing in the CRHR. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that

are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-3: Cause a change in the integrity, as defined by NHPA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could change NHRA-defined integrity of cultural resources. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-4: Cause a change in the integrity, as defined by CEQA, of known or unknown cultural resources (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. This alternative could change CEQA-defined integrity of cultural resources. However, general plan policies and measures, as well as Caltrans BMPs, are expected to reduce potential alterations to levels that are below significance. Further, measures implemented through the PA would reduce potential impacts of the conservation strategy and other activities that have a federal nexus.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

Impact CUL-5: Disturb known or unknown human remains, including those interred outside of formal cemeteries (NEPA: less than significant; CEQA: less than significant)

The impact under Alternative 3 would be the same as under Alternative 2. General plan policies and measures, as well as Caltrans BMPs, that require construction monitoring, field surveys, and testing plus the requirements of the California Health and Human Safety Code (Section 7050.5) and Public Resources Code Section 5097.98, are expected to reduce disturbances to levels that are below significance.

NEPA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2; the impact would be less than significant. No mitigation is required.

7.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for cultural resources is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. In addition, for cultural resources, the HRI, the Determinations of Eligibility, and relevant county and city general plans were the primary sources used to gather information on known significant archaeological and built-environment properties in the Plan Area. In general, these data were gathered at the county and city level. The exact locations of significant cultural resources in or near the Plan Area are not fully known at this time. This analysis considered urban development projects, including roadway projects, and water supply development projects; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives. This analysis determines whether the covered activities not analyzed in previous environmental documents would result in cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. Such projects have resulted in an increase in agricultural uses and urban uses in the Plan Area and thus represented an overall change, alteration or loss of cultural resources. This has generally resulted in cumulatively significant effects on cultural resources within the Plan Area.

Alternative 1—No Project (No Plan Implementation)

The County and Cities of Oroville, Chico and Biggs determined that cumulatively considerable and significant impacts on cultural resources would not result from the implementation of the general plans. However, the city of Gridley identified that implementation of the general plan would result in cumulatively considerable impacts to cultural resources. Although there would be no additional activities (i.e., conservation strategy or conservation measures) beyond implementation of the general plans, the No Action Alternative would contribute to cumulative impacts as determined in the Gridley general plan EIR. Accordingly, past, present, and reasonably foreseeable future projects—including implementation of the general plan—would result in cumulatively considerable and significant impacts. Therefore, Alternative 1 would result in an incremental contribution to cumulative impacts.

Alternative 2—Proposed Action

Establishment and management of conservation areas under Alternative 2 could result in the loss of important previously unidentified built-environment and unknown archaeological resources or in the disturbance of human remains. Furthermore, the City of Gridley determined implementation of the general plan would result in cumulatively considerable and significant impacts to cultural resources. However, any cumulative loss of cultural resources from covered activities, including

implementation of general plans, would be partially offset by Alternative 2 and other large-scale conservation efforts that place lands in open space and remove the development potential, thereby avoiding substantial disturbance and loss of cultural resources in those areas. Therefore, it is anticipated Alternative 2 would not result in an incremental contribution to cumulative impacts.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

Although the extent of the ground disturbing activities, development activities, and establishment and management of conservation areas varies among these two alternatives, the mechanism and implications are the same as under Alternative 2. Neither Alternative 3 nor Alternative 4 would result in a cumulatively considerable contribution to cumulative impacts on cultural resources.

7.3 References

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Chapter 8

Geology, Soils, Mineral Resources, and Paleontological Resources

8.1 Affected Environment

This section describes the regulatory and environmental setting for geology, seismicity, soils, mineral resources, and paleontological resources.

8.1.1 Regulatory Setting

Federal

International Building Code

The design and construction of engineered facilities in California must comply with the requirements of the International Building Code (IBC) (International Code Council 2011) and the adoptions to that code adopted by the State of California (see *California Building Standards Code* below).

U.S. Geological Survey Landslide Hazard Program

To fulfill the requirements of Public Law 106-113, the U.S. Geological Survey created the National Landslide Hazards Program to reduce long-term losses from landslide hazards by improving understanding of the causes of ground failure and suggesting mitigation strategies. The Federal Emergency Management Agency is the responsible agency for the long-term management of natural hazards.”

Clean Water Act Section 402 (National Pollutant Discharge Elimination System Program)

The Clean Water Act (CWA) is discussed in detail in Chapter 9, *Hydrology, Water Resources, and Water Quality*. However, because CWA Section 402 is directly relevant to grading activities, additional information is provided herein.

CWA Section 402 mandates that certain types of construction activity comply with the requirements of EPA’s NPDES program. EPA has delegated to the State Water Board the authority for the NPDES program in California, where it is implemented by the state’s nine Regional Water Boards. Construction activity disturbing 1 acre or more must obtain coverage under the state’s General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2010-0014-DWQ). EPA has delegated responsibility for CWA implementation to the State Water Board (See *Construction Activities Storm Water Construction General Permit [2010-0014-DWQ Permit]*).

State

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code [PRC] Section 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce risks to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy¹ across the traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as referring to approximately the last 11,000 years). A fault is considered well-defined if its trace can be identified clearly by a trained geologist at the ground surface, or in the shallow subsurface using standard professional techniques, criteria, and judgment (Bryant and Hart 2007).

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act—the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards; and cities and counties are required to regulate development within mapped seismic hazard zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans. Geotechnical investigations conducted within Seismic Hazard Zones must incorporate standards specified by California Geological Survey Special Publication 117a, *Guidelines for Evaluating and Mitigating Seismic Hazards* (California Geological Survey 2008).

¹ With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, Title 14, Div. 2, Section 3601[e]).

Construction Activities Storm Water Construction General Permit (2010-0014-DWQ Permit)

Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the General Permit Order 2010-0014-DWQ. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Coverage under the General Permit is obtained by submitting permit registration documents to the State Water Board that include a risk level assessment and a site-specific stormwater pollution prevention plan (SWPPP) identifying an effective combination of erosion control, sediment control, and non-stormwater BMPs. The General Permit requires that the SWPPP define a program of regular inspections of the BMPs and, in some cases, sampling of water quality parameters. The Central Valley Water Board administers the NPDES stormwater permit program in Butte County.

Municipal Separate Storm Sewer System Program

EPA defines a municipal separate storm sewer system (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater. As part of the NPDES program, EPA initiated a program requiring that entities having MS4s apply to their local Regional Water Board for stormwater discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges. Phase II expanded the program to municipalities with populations less than 100,000 as well as small MS4s outside the urbanized areas that are designated by the permitting authority to obtain NPDES permit coverage for their stormwater discharges.

Generally, Phase I MS4s are covered by individual permits and Phase II MS4s are covered by a general permit. Each regulated MS4 is required to develop and implement an SWMP to reduce the contamination of stormwater runoff and prohibit illicit discharges.

In the Plan Area, only the City of Chico is covered by an MS4 permit.

2010 California Building Standards Code

The state's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (24 CCR). The CBSC is based on the IBC, which is used widely throughout United States (generally adopted on a state-by-state or district-by-district basis), and has been modified for California conditions with numerous, more detailed or more stringent regulations. The CBSC requires that "classification of the soil at each building site will be determined when required by the building official" and that "the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations." In addition, the CBSC states that "the soil classification and design-bearing capacity will be shown on the (building) plans, unless the foundation conforms to specified requirements." The CBSC provides standards for various aspects of construction, including (i.e., not limited to) excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction

potential and soil strength loss. In accordance with California law, certain aspects of the project would be required to comply with all provisions of the CBSC.

The California Building Code requires extensive geotechnical analysis and engineering for grading, foundations, retaining walls, and other structures, including criteria for seismic design.

Caltrans Standards

In addition to the CBSC, California Department of Transportation (Caltrans) highway and bridge facilities are subject to numerous standards, such as the *Caltrans Guidelines for Structures Foundations Report*, *Caltrans Seismic Design Criteria*, *Caltrans Highway Design Manual*, *Caltrans Bridge Design Specifications*, and *Caltrans Standard Specifications*. These standards were developed to ensure that Caltrans facilities are constructed and maintained to safety standards.

The Caltrans Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects, which are designed using the *Caltrans Seismic Design Criteria*. These design criteria provide the minimum seismic requirements for California highway bridges.

California Surface Mining and Reclamation Act of 1975

The principal legislation addressing mineral resources in California is the Surface Mining and Reclamation Act of 1975 (SMARA) (PRC Sections 2710–2719), which was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of SMARA is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that adverse environmental effects of mining are prevented or minimized; that mined lands are reclaimed and residual hazards to public health and safety are eliminated; and that consideration is given to recreation, watershed, wildlife, aesthetic, and other related values. SMARA governs the use and conservation of a wide variety of mineral resources, although some resources and activities are exempt from its provisions, including excavation and grading conducted for farming, construction, or recovery from flooding or other natural disaster.

SMARA provides for the evaluation of an area's mineral resources using a system of Mineral Resource Zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. The MRZ classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data, and on socioeconomic factors such as market conditions and urban development patterns. The MRZ classifications are defined as follows.

- **MRZ-1**—areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2**—areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- **MRZ-3**—areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4**—areas where available information is inadequate for assignment into any other MRZ.

Although the State of California is responsible for identifying areas containing mineral resources, the county or city is responsible for SMARA implementation and enforcement by providing annual mining inspection reports and coordinating with the California Geological Survey.

Mining activities that disturb more than 1 acre or 1,000 cubic yards of material require a SMARA permit from the lead agency, which is the county, city, or board that is responsible for ensuring that adverse environmental effects of mining are prevented or minimized. The lead agency establishes its own local regulations and requires a mining applicant to obtain a surface mining permit, submit a reclamation plan, and provide financial assurances, pursuant to SMARA.

Certain mining activities do not require a permit, such as excavation related to farming, grading related to restoring the site of a natural disaster, and grading related to construction.

Caltrans Requirements for Paleontological Resources

Caltrans requires that a Paleontological Identification Report (PIR) be prepared to determine whether a project may affect paleontological resources. If the PIR indicates that the project could affect paleontological resources, a Paleontological Evaluation Report (PER) is prepared by qualified personnel concurrently with preparation of the environmental document. The PER includes a brief outline of the Paleontological Mitigation Plan (PMP) if one will be needed.

Local

Geologic and Seismic Hazards

The Butte County Code of Ordinances and the Cities of Oroville and Chico in their municipal codes incorporated the 2010 CBSC, Title 24. The City of Gridley has adopted the 2007 CBSC. The City of Biggs has adopted the 1991 Uniform Building Code.

The Butte County General Plan 2030 (Butte County 2012) includes the following goals and policies related to geologic and seismic hazards.

Goal HS-6: Reduce risks from earthquakes.

Policy HS-P6.1: Appropriate detailed seismic investigations shall be completed for all public and private development projects in accordance with the Alquist-Priolo Earthquake Fault Zoning Act.^{2*}

Policy HS-P6.2: Geotechnical investigations shall be completed prior to approval of schools, hospitals, fire stations and sheriff stations, as a means to ensure that these critical facilities are constructed in a way that mitigates site-specific seismic hazards.

- **Action HS-A6.1:** Continue to require applicants to seismically retrofit existing homes where required under existing building codes.

Goal HS-7: Reduce risks from steep slopes and landslides.

Policy HS-P7.1: Site-specific geotechnical investigations shall be required to assess landslide potential for private development and public facilities projects in areas rated "Moderate to High" and "High" in Figure HS-4 or the most current available mapping.*

² Policies marked with an "*" are mandatory and are required by the County to mitigate environmental impacts under CEQA.

Goal HS-8: Reduce risks from erosion.

Policy HS-P8.1: Site-specific geotechnical investigations shall be required to assess erosion potential for private development projects and public facilities in areas rated “Very High” in Figure HS-5 or the most current available mapping.*

Goal HS-9: Reduce risks from expansive soils.

Policy HS-P9.1: Site-specific geotechnical investigations shall be required to assess risks from expansive soils for private development projects and public facilities in areas rated “High” in Figure HS-6 or the most current available mapping.*

Goal HS-10: Avoid subsidence from groundwater withdrawal.

Policy HS-P10.1: Continue to work with water providers and regulatory agencies to ensure that groundwater withdrawals do not lead to subsidence problems.

Policy HS-P10.2: Existing programs to monitor potential subsidence activity shall be supported.

The City of Biggs General Plan (City of Biggs 1998) includes the following goal and policies related to geologic and seismic hazards.

Goal 6.5: Minimize the threat of personal injury and property damage due to seismic and geologic hazards.

Policy 6.5.A: Consider the potential for expansive soils and earthquake related hazards when reviewing applications for developments.

Policy 6.5.B: A soils report, prepared by a licensed soils engineer, shall be required for all residential subdivisions and development projects. Soils reports shall evaluate shrink/swell and liquefaction potential of sites and recommend measures to minimize unstable soil hazards.

Policy 6.5.C: Applications for projects which extract groundwater, oil, or gas shall include a report evaluating the potential for resulting subsidence. Reports shall discuss appropriate mitigation measures to reduce the potential for subsidence.

Policy 6.5.D: The City encourages owners of buildings which are subject to seismic hazards to pursue structural improvements to remedy seismic related hazards.

Program 6.5.E: The City shall pursue funding options to assist property owners with costs related to seismic safety structural improvements.

The Chico 2011 General Plan (City of Chico 2011) includes the following goal and policy related to geologic and seismic hazards.

Goal S-3: Protect lives and property from seismic and geologic hazards.

Policy S-3.1 (Potential Structural Damage): Prevent damage to new structures caused by seismic, geologic, or soil conditions.

- **Action S-3.1.1 (California Building Code):** Require all new buildings in the City to be built under the seismic requirements of the California Building Code.
- **Action S-3.1.2 (Potential Soil Hazards):** In areas with highly expansive soils, require appropriate studies and structural precautions through project review.

The City of Gridley General Plan (City of Gridley 2010) includes the following goal, policies, and strategies related to geologic and seismic hazards.

Safety Goal 1: To reduce risks to people and property from geologic hazards and soils conditions.

Safety Policy 1.1: New development shall implement state and local building code requirements, including those related to structural requirements and seismic safety criteria in order to reduce risks associated with seismic events and unstable and expansive soils.

Safety Policy 1.2: New developments that could be adversely affected by geological and/or soil conditions shall include project features that minimize these risks.

Safety Policy 1.3: The City will not allow new water well sites to be located in areas where subsidence could occur as a result of water well operation, or where the potential for subsidence could increase as a result of operation of a water well.

Safety Implementation Strategy 1.1: The City will continue to enforce the most recent statewide building code requirements.

Safety Implementation Strategy 1.2: The City will require geotechnical evaluation and recommendations before development or construction of buildings meant for public occupancy in geologic hazard areas may proceed. Such evaluations will be required to focus on potential hazards related to liquefaction, erosion, subsidence, seismic activity, and other relevant geologic hazards and soil conditions for development. New development would be required to incorporate project features that avoid or minimize the identified hazards to the satisfaction of the City.

The City of Oroville 2030 General Plan (City of Oroville 2009) includes the following goal and policies related to geologic and seismic hazards.

Goal SAF-1: Reduce the risk of injury, loss of life and property damage from earthquakes, landslides and other geologic hazards.

P1.1: Group and locate new residential development in such a way as to avoid areas of geologic hazard, including steep slopes and areas of unstable soils.

P1.2: Require all new developments to be subjected to a geotechnical study prior to development approval and to mitigate any identified hazards to a level of insignificance. If mitigation is not possible, do not approve the development.

P1.3: Encourage retrofitting of structures, particularly older buildings, to withstand earthquake shaking and landslides, consistent with state Building Codes and Historic Building Codes.

P1.4: Ensure that new development incorporates design and engineering that minimizes the risk of damage from seismic events and landsliding, consistent with state Building Codes and Historic Building Codes.

Soils

Many counties and cities have grading and erosion control ordinances. These ordinances are intended to control erosion and sedimentation caused by construction activities. As part of the permit, a project applicant usually must submit a grading and erosion control plan, project vicinity and site maps, and other supplemental information. Standard conditions in the grading permit include an extensive list of BMPs similar to those contained in a SWPPP.

The purpose of the grading portion of the Butte County Grading and Mining Ordinance is “the control of erosion and siltation, the enhancement of slope stability, the protection of said resources and the prevention of related environmental damage by establishing standards and requiring permits for grading.” In general, a permit is required for any earthmoving activities involving 50 cubic yards or more of material. Depending on the project, the County may require environmental review, engineering plans and specifications, a soils engineering report, and/or an erosion and sediment control plan.

The County General Plan 2030 (Butte County 2012) includes the following goal, policies, and objectives related to soils.

Goal AG-1: Maintain, promote and enhance Butte County's agriculture uses and resources, a major source of food, employment and income in Butte County.

Policy AG-P1.1: The County supports State and federal legislation designed to conserve soil and protect agricultural land.

Policy AG-P1.2: The County supports agricultural education and research at Butte County educational institutions.

Policy AG-P1.3: Continue to work with landowners in establishing new and maintaining existing Williamson Act contracts.

Objective D2N-O6.2: Protection of soil resources.

a. To eliminate potential for soil erosion or degradation of its agricultural productivity.

Policy D2N-P6.5: Require standard erosion-control measures and construction practices to minimize soil erosion.

Policy D2N-P6.6: Protect agricultural lands which currently produce, or have the potential to produce, from encroaching urban uses.

The grading requirements for the City of Chico are described in Chapter 16, Sections 22 to 32, "Grading Regulations." The purpose of the regulations is to "safeguard life, property and the environment from the hazards and effects of grading work performed within the city." Projects requiring excavation must comply with the provisions of Chapter 16. If any provisions conflict with state or federal law, the law that provides the greatest protection to life, property, and the environment will govern.

The City of Oroville requirements for grading and excavation are described in Chapter 9B, *Grading, Excavation and Sediment Control*, of its Municipal Code. The purpose includes establishing standards and specifications to prevent erosion, degradation of soil, and hazards to life and property. Projects requiring excavation (e.g., projects involving more than 20 cubic yards of material and disturbing an area of more than 200 square feet) must comply with the provisions of Chapter 9B. Public agencies and public utility companies, which have their own environmental compliance documents, are not required to obtain a grading permit for excavation that is for the purpose of installing or maintaining underground utility facilities.

The Cities of Biggs and Gridley also require grading permits and approval of grading plans by a city building inspector. The inspector may require a submission of a geotechnical report prepared by a civil engineer or other approved professional, depending on the project.

Minerals

The purpose of the mining portion of the Butte County Grading and Mining Ordinance is to comply with the requirements of SMARA, encourage production and conservation of mineral resources in balance with other beneficial uses, and prevent or minimize damage to the environment. Applicants must file a permit application with the County, submit mining and reclamation plans, and provide financial assurances. The application then undergoes a review and public hearing process before a determination is made by the Butte County Planning Commission.

The County General Plan 2030 (Butte County 2012) contains the following goals, policies, actions, and objectives related to mineral resources.

Goal COS-12: Protect economically viable mineral resources and related industries while avoiding land use conflicts and environmental impacts from mining activities.

Policy COS-P12.1: Sufficient aggregate resources to meet the County's fair share of future regional needs shall be conserved.

Policy COS-P12.2: Mineral resources identified by the State to be of regional or statewide significance for mineral resource extraction shall be conserved.*

Policy COS-P12.3: Permitted uses on lands containing and adjacent to important mineral resources shall be restricted to those compatible with mineral extraction, except in cases where such uses offer public benefits that outweigh those of resource extraction.

Policy COS-P12.4: Prior to approval of any new or expanded mining operation, the applicant shall demonstrate that the operation will not create significant nuisances, hazards or adverse environmental effects.

Policy COS-P12.5: New mineral haul routes shall avoid landslides, highly erodible soils, residential areas and schools, when feasible.

Policy COS-P12.6: Discretionary development projects in the vicinity of permitted mining extraction sites or along existing haul routes shall record a notice of the right to mine against the property for which a discretionary permit is sought. The notice shall advise owners and subsequent interests in ownership that the existing mining operation has a permitted right to continued mining operations.

Policy COS-P12.7: Mined property shall be left in a condition suitable for reuse in conformance with the General Plan land use designations and in accordance with the California Surface Mining and Reclamation Act (SMARA).

- **Action COS-A12.1:** Apply zoning regulations permitting extraction and processing as a conditional use on any lands classified by the State Mining and Geology Board as Mineral Resource Zone 2 (MRZ-2) or Scientific Zone (SZ).

Goal D2N-6: Utilize and develop natural resources so as to protect those resources and eliminate exposure of persons and property to environmental hazards.

Objective D2N-O6.1: Management of mineral resources.

- a. Efficiently utilize mineral resources and ensure their continued supply.

Policy D2N-P6.1: Encourage proper development and management of sand and gravel.

Policy D2N-P6.2: Ensure that all commercial development of sand and gravel deposits is compatible with nearby land uses.

Policy D2N-P6.3: Ensure that extraction operations of sand and gravel adhere to all environmental quality regulations of the County and State.

Policy D2N-P6.4: Locate commercial, industrial, open space and agricultural uses adjacent to prime mineral resource areas to avoid conflicts between mineral production activities and present or planned residential and institutional land uses.

The City of Biggs General Plan (City of Biggs 1998) contains the following policies related to mineral resources.

Policy 5.1.D: No mineral, gas or other natural resource extraction shall occur within the City limits of Biggs without prior review and approval of the activity by the City.

Policy 5.1.E: Ensure that any mineral extraction activities within the Biggs planning area to conform with the State Mining and Reclamation Act (SMARA) requirements, including financial assurances and reclamation plans.

The Chico 2030 General Plan (City of Chico 2011) does not have goals or policies related to mineral resources.

The City of Gridley General Plan states that there are no significant mineral resources in the Gridley area and therefore does not address the topic (City of Gridley 2010:1).

The City of Oroville 2030 General Plan (City of Oroville 2009) includes the following goal and policies related to mineral resources.

Goal OPS-7: Protect economically viable mineral resources and related industries in Oroville, while avoiding land use conflicts and environmental impacts from mining activities.

P7.1: Manage mineral resource extraction to ensure that this activity results in the fewest possible environmental impacts. Require preparation and assured implementation of a rehabilitation plan for mineral extraction sites as a condition of mining approval. The mineral resource extraction plan should address the protection and restoration of biotic resources.

P7.2: New or expanded mining operations within the City of Oroville and its SOI shall adhere to the following guidelines:

- Demonstrate no significant adverse impacts from the mining operations on adjoining areas and uses, including, but not limited to, those associated with noise, dust and vibration.
- Demonstrate no substantial increase in hazards to neighboring uses, water quality, air quality, agricultural resources or biological resources.
- Demonstrate that the proposed plan complies with existing applicable County and State waste management standards.
- Incorporate sufficient buffering between mining operations and adjacent non-mining uses to minimize noise in accordance with guidelines described in the Noise Ordinance.
- Incorporate landscaping buffers and other measures to minimize visual impacts to the extent possible.

P7.3: If the State Division of Mines and Geology determines that the Planning Area contains significant aggregate resources, conserve sufficient aggregate resources to meet the Planning Area's fair share of future regional needs.

P7.4: Apply zoning regulations permitting extraction as a conditional use on any lands that may be designated as Significant Construction Aggregate Resource Areas.

P7.5: Restrict permitted uses on lands containing important mineral resources to those compatible with mineral extraction, except in cases where such uses offer public benefits that outweigh those of resource extraction.

P7.6: Reclaim former mining sites to a condition which is readily adaptable for alternative land uses, consistent with the Land Use Map and other applicable policies, in accordance with the California Surface Mining and Reclamation Act (SMARA).

Paleontological Resources

Butte County General Plan

The County General Plan 2030 (Butte County 2012) contains the following goals and policies related to paleontological resources.

Goal COS-15: Ensure that new development does not adversely impact cultural resources.

COS-P15.2: Any archaeological or paleontological resources on a development project site shall be either preserved in their sites or adequately documented as a condition of removal. When a

development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure.

Biggs General Plan

The City of Biggs does not have regulations related to paleontological resources.

Chico

The City of Chico (2011) General Plan contains the following action to protect paleontological resources.

Action CRHP-1.1.6 (Best Management Practices): Update the City's Best Management Practices Manual to include environmental review protocol, communication with appropriate agencies, and standard conditions of approval for discretionary projects that protect cultural and paleontological resources.

Gridley

The City of Gridley (2010) General Plan contains the following goals, policies, and implementation strategy to protect paleontological resources.

Conservation Goal 4: To minimize negative impacts to prehistoric and historic resources.

Conservation Policy 4.1: Archaeological and paleontological resources shall be protected permanently from urban development, wherever possible.

Conservation Policy 4.2: New developments shall analyze potential impacts, and shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever possible.

Conservation Implementation Strategy 4.2: The City will require a paleontological resources impact assessment for projects proposed within the Modesto Formation, where a CEQA environmental document is required and where substantial excavation is anticipated. The Modesto Formation is an area that is sensitive for paleontological resources and underlies many parts of the central valley. Impacts to paleontological resources would be evaluated on a site-specific basis, pursuant to the State CEQA Guidelines. Where such impacts are found to be potentially significant, the City will require feasible mitigation measures to reduce impacts, such as construction worker personnel education, consultation with a qualified paleontologist should resources be encountered, and recovery and curation of specimens, as appropriate. Infill projects that do not involve substantial excavation would be exempt from this requirement.

Oroville

Goal OPS-14: Preserve Oroville's cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.

P14.5: Consult with qualified paleontologists to identify and protect Oroville's significant paleontological resources.

P14.7: If cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

8.1.2 Environmental Setting

Regional Geology

The Plan Area spans two geomorphic provinces: the Great Valley geomorphic province and the Sierra Nevada geomorphic province. A geologic map of the Plan Area is provided in Figure 8-1.

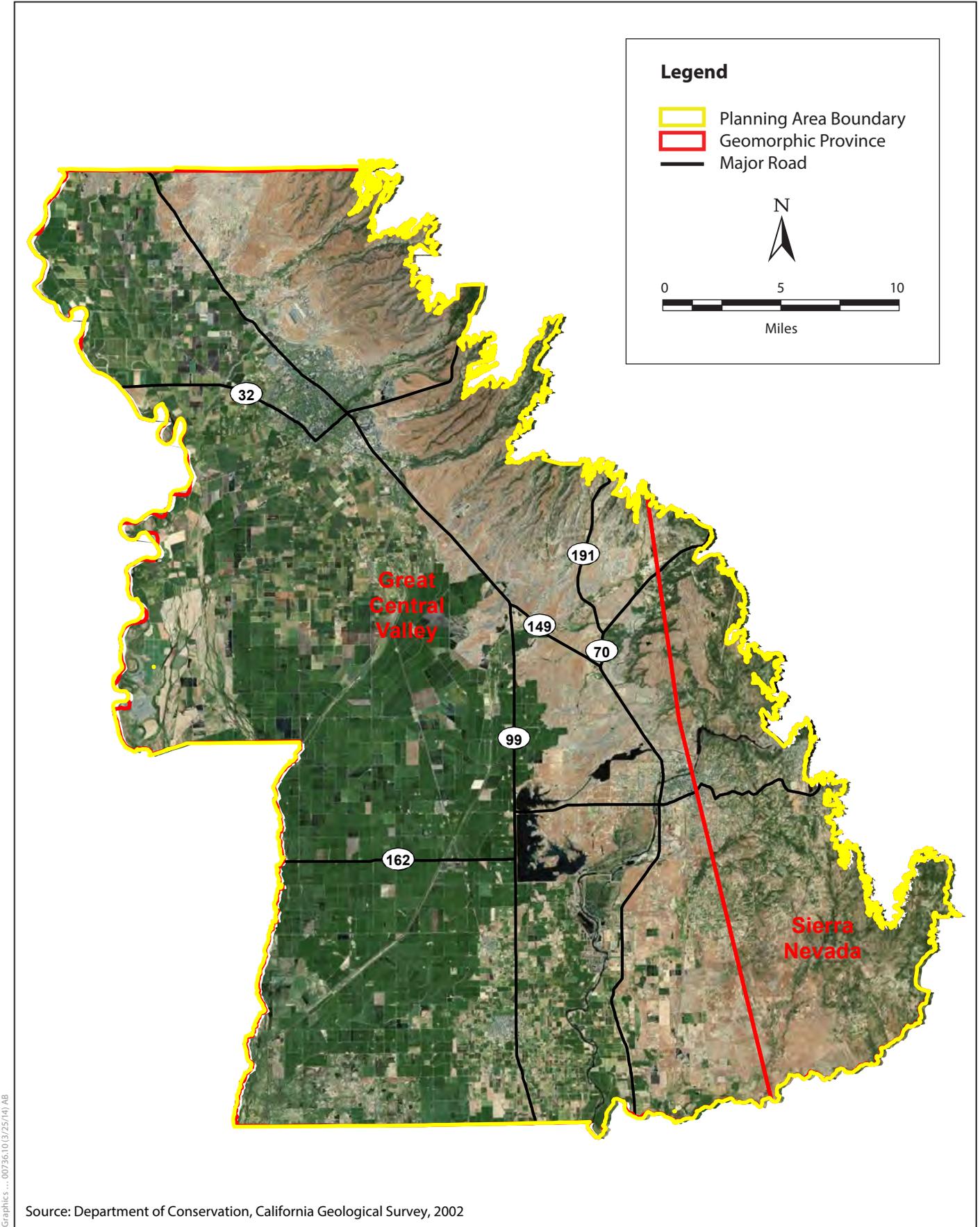
The valley and foothills of the western portion of the Plan Area are located in the northern central portion of the Sacramento Valley, which forms the northern portion of California's Great Valley geomorphic province (Norris and Webb 1990:412). The Great Valley, also called the Central Valley, is a nearly level alluvial plain that lies between the Sierra Nevada on the east and the Coast Ranges on the west. Its south end is defined by the Tehachapi Mountains north of Los Angeles, and its north end is defined by the Klamath Mountains. Subdivided into the Sacramento Valley to the north and the San Joaquin Valley to the south, the valley has an average width of about 50 miles and is about 400 miles long overall (Norris and Webb 1990:412; Bartow 1991:2).

The Great Valley is floored by a thick sequence of sedimentary deposits that range in age from Jurassic through Quaternary. Under the eastern and central portions of the valley, the base of the sequence likely rests on Mesozoic crystalline rock allied to the plutons of the Sierra Nevada; to the west, basement rocks are believed to be Franciscan metasediments and/or *mélange* similar to exposures in the Coast Ranges. Mesozoic sedimentary rocks now in the subsurface record marine deposition. They are overlain by Tertiary strata reflecting marine, estuarine, and terrestrial conditions, which are in turn overlain by Quaternary fluvial and alluvial strata recording uplift and erosion of the Sierra Nevada and Coast Ranges to approximately their present shape (Norris and Webb 1990:417–425; Bartow 1991:2). In the Plan Area, the valley is characterized by alluvial and basin units of Holocene, Pleistocene, and Pliocene age (Saucedo and Wagner 1992).

Plan Area Geology

The eastern portion of the Plan Area is located in the foothills of the Sierra Nevada geomorphic province, a linear, tilted fault block almost 400 miles long that extends from northern Butte County to the Mohave Desert. Its western slope is gentle (approximately 2°), in stark contrast to its steep eastern slope. This western slope is deeply incised by rivers and disappears beneath the sediments of the Great Valley. Massive granites make up the upper Sierra, which has been shaped by glaciation, such as is seen in Yosemite Valley. Lower in the Sierra is the northwest-trending Mother Lode, which is made up of metamorphic rock containing gold-bearing veins. The Sierra Nevada disappears to the north beneath the Cenozoic volcanic rock of the Cascade Range (California Geological Survey 2002:2). The northeastern portion of the Plan Area is dominated by the Tuscan Formation, a lahar (i.e., volcanic mudflow) deposit of Pliocene to Pleistocene age. The southeastern portion of the Plan Area is dominated by older volcanic units, such as the Mesozoic quartz diorite and Jurassic volcanic rocks (Saucedo and Wagner 1992).

Further information on the geology of the Plan Area and a description of its geologic units can be found in the draft ecological baseline report prepared for the project (Butte Association of Governments 2007:3.3-8 to 3.3-11).



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Figure 8-1
Geomorphic Provinces

Seismicity

The Plan Area is located in a region of California characterized by moderate seismic activity, as described below.

Primary Seismic Hazards

The State of California considers two aspects of earthquake events primary seismic hazards: surface fault rupture (disruption at the ground surface as a result of fault activity) and seismic ground shaking.

Surface Fault Rupture

The portion of the southeastern part of the Plan Area is located in an Alquist-Priolo Earthquake Fault Zone (Bryant and Hart 2007; Jennings and Bryant 2010; California Geological Survey 2010). The Cleveland fault is an active fault just south of Lake Oroville and is part of the Foothills Fault System (northern reach section). This fault has been active within the past 150 years, with a 5.7 earthquake in 1975 (U.S. Geological Survey and California Geological Survey 2010; Jennings and Bryant 2010). No other active faults are located in the Plan Area and no other portion of the Plan Area is located in an Alquist-Priolo Earthquake Fault Zone (Jennings and Bryant 2010; Bryant and Hart 2007). The risk of surface fault rupture in the Plan Area is therefore considered high in the area around the Cleveland fault and low in the rest of the Plan Area. The next nearest fault is the Dunnigan Hills fault, approximately 31 miles southwest of the Plan Area (Figure 8-2).

Strong Ground Shaking

Unlike surface rupture, ground shaking is not confined to the trace of a fault, but rather propagates into the surrounding areas during an earthquake. The intensity of ground shaking typically diminishes with distance from the fault, but ground shaking may be locally amplified and/or prolonged by some types of substrate materials.

The ground-shaking hazard in the Plan Area is relatively low for California. Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded at a 10% probability in 50 years (California Geological Survey 2003; Cao et al. 2003), the probabilistic peak horizontal ground acceleration values for the Plan Area are 0.1 to 0.2g (where g equals the acceleration speed of gravity). As a point of comparison, probabilistic peak horizontal ground acceleration values for the San Francisco Bay Area range from 0.4g to more than 0.8g.

Secondary Seismic Hazards

Secondary seismic hazards refers to seismically induced landsliding, liquefaction, and related types of ground failure. As discussed in Section 8.1.1, *Regulatory Setting*, the State of California maps areas that are subject to secondary seismic hazards pursuant to the Seismic Hazards Mapping Act of 1990. The State of California has not yet published seismic hazards mapping in Butte County under the Seismic Hazards Mapping Program (California Geological Survey 2009). These hazards are addressed briefly below based on available information.

Landslide and Other Slope Stability Hazards

Slope stability hazards in the Plan Area vary according to the steepness of the slope. Therefore, as shown in the County General Plan 2030, the nearly level valley floor that makes up the western two-

thirds of the Plan Area has a low risk for landsliding. In the foothills, the risk increases to low/moderate to moderate. Landslides are uncommon in the county and mainly occur in the mountainous eastern portion of the county outside the Plan Area, where slopes are steeper than 15% (Butte County 2012:280 and 281).

Liquefaction

Liquefaction is the process in which soils and sediments lose shear strength and fail during seismic ground shaking. The vibration caused by an earthquake can increase pore pressure in saturated materials. If the pore pressure is raised to be equivalent to the load pressure, this causes a temporary loss of shear strength, allowing the material to flow as a fluid. This temporary condition can result in severe settlement of foundations and slope failure. The susceptibility of an area to liquefaction is determined largely by the depth to groundwater and the properties (e.g., texture and density) of the soil and sediment within and above the groundwater. The sediments most susceptible to liquefaction are saturated, unconsolidated sand and silt soils with low plasticity within 50 feet of the ground surface (California Geological Survey 2008: 35 and 36).

The potential for liquefaction in the Plan Area varies by location. According to the County General Plan 2030, much of the western and southwestern portions of the Plan Area has a moderate to high susceptibility to liquefaction (Butte County 2012:279).

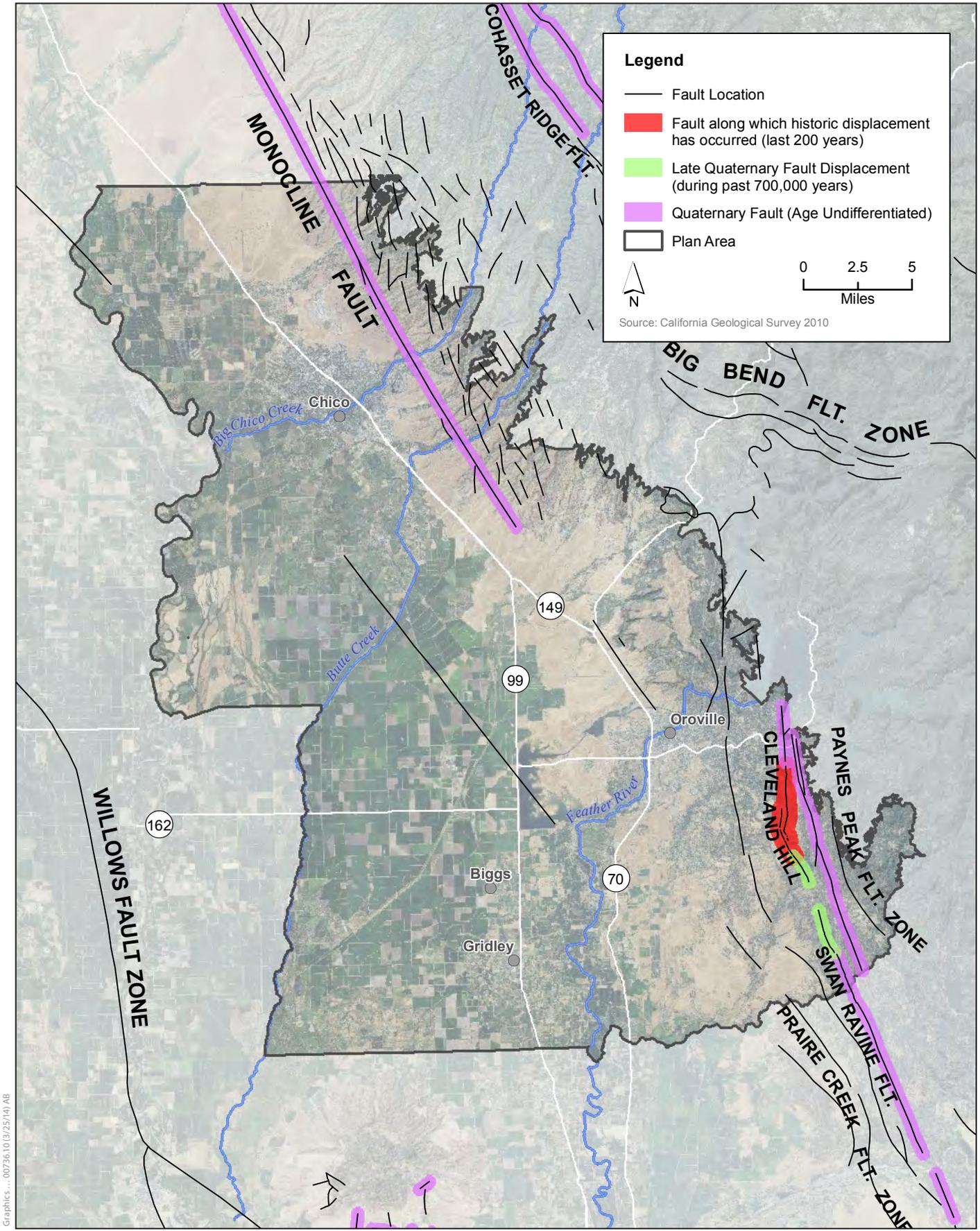
Land Subsidence

Subsidence is the sinking of a large area of ground surface in which the material is displaced vertically downward, with little or no horizontal movement. Many areas in the Central Valley have experienced subsidence, most notably the San Joaquin Valley and San Joaquin–Sacramento River Delta (Faunt 2009:99). Subsidence occurs in three ways: as a result of groundwater overdraft or oil and gas withdrawal, compaction and oxidation of peat soils, and hydrocompaction (U.S. Geological Survey 2000:1–2). Land subsidence as a result of groundwater overdraft is discussed below. Land subsidence as a result of compaction and oxidation of peat soils and hydrocompaction are not significant concerns in the northern Sacramento Valley and are not discussed.

Groundwater overdraft occurs when groundwater extraction results in compression of a clay bed within an aquifer to such an extent that it no longer expands to its original thickness after groundwater recharge. Clay beds often compress when wells pump groundwater and expand after pumping stops. Clay beds contain individual clay particles and small pores that fill with groundwater in saturated conditions. Groundwater maintains the pore space, expands the clay particles, and helps the bed maintain its thickness. A clay bed will yield a certain volume of groundwater (i.e., safe yield) without losing its storage capacity. If safe yield is not exceeded, the clay bed will compress and expand as the soil pores alternately fill with water and drain. This can lead to elastic land subsidence at the ground surface where elevation decreases when water is extracted then increases when water is recharged. If the safe yield of a clay bed is exceeded, however, its pores collapse and the surrounding clay particles settle in their place. When the clay particles settle, the clay bed is effectively thinned, resulting in permanent land subsidence at the ground surface.

The severity of subsidence depends on several factors, such as those listed below.

- Groundwater level decline that has already occurred.
- Thickness of the aquifer unit.
- Thickness and compressibility of the aquifer's silt-clay layers.



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Figure 8-2
Faults Near the Plan Area

- Length of time groundwater level decline has occurred.
- Frequency and size of water withdrawals.
- Geology of the groundwater basin (Butte County 2007:17-74).

The types of damage that may occur as a result of subsidence include “gradient changes in roads, streams, canals, drains, sewers, and dikes. Many such systems are constructed with slight gradients and may be significantly damaged by even small elevation changes. Other damaging effects include damage to water wells resulting from sediment compaction and increased likelihood of flooding of low-lying areas.” (Butte County 2007:17-75.)

Land subsidence is a potential hazard for the portions of the Plan Area located in the Sacramento Valley. Areas of potentially significant subsidence are shown in Figure 17-7 of the *Butte County General Plan Settings and Trends Report* (Butte County 2007: 17-76). The areas with the greatest potential for subsidence are those with heavy groundwater pumping and those in gas-producing areas. The areas with the greatest groundwater withdrawal occur about 2 miles north and south of Chico and in a 1-mile radius around Gridley. The amount of subsidence that could take place in the Plan Area depends primarily on the amount of groundwater withdrawal (Butte County 2007: 17-75).

Soils

Soil Types

Most soils in the Plan Area are classified as thermic because they have a warm mean annual soil temperature.

In the low-lying western portion of the Plan Area, the predominant soils are the thermic soils in flood basins and the thermic soils on alluvial fans in the Sacramento Valley. These soils generally formed in a low-energy floodplain or flood basin environment. In the eastern portion of the Plan Area, the predominant soils are the thermic soils on Lovejoy Basalt and Ione sediments on Sierra Nevada foothills, thermic soils on low fan terraces formed from Sierra Nevada alluvium in the Sacramento Valley, thermic soils on strath terraces on volcanic Cascade foothills, and thermic soils on volcanic Cascade foothills. The soils formed in sediments derived from the Cascade foothills in the northeastern portion of the Plan Area, and the Sierra foothills in the southeastern portion of the Plan Area. Further information on the soils of the Plan Area can be found in the draft ecological baseline report prepared for the project (Butte Association of Governments 2007:3.3-12 to 3.3-17).

Expansive Soils

An issue of concern in the Plan Area is the shrink-swell potential of several soils (Butte County 2012:294, 297). Soils with a moderate to high shrink-swell potential, also known as expansive soils, expand and contract with changes in moisture content and therefore do not provide a suitable substrate for construction without modification. In the Plan Area, expansive soils tend to occur in level areas in the valley, particularly in the western and southwestern portions of the Plan Area around Chico, Oroville, Biggs, and Gridley (Butte County 2012:294, 297).

Other Hazards

Several other geologic and seismic hazards (volcanic activity, tsunami, seiche, and mudflow) that could be experienced in the larger region are unlikely to affect the Plan Area. These hazards are not likely to affect the proposed project and therefore are not discussed in this EIS/EIR.

Mineral Resources

The focus of this section is on aggregate resources, which are the primary mineral resource of economic importance in the Plan Area. Aggregate resources are important because they are necessary for most construction, cannot be replaced with other products, and are most economical when used close to the area where they are mined because of the high cost of transportation (California Geological Survey 2007:2).

The predominant mineral resources in the Plan Area are sand and gravel. Current mining activities take place primarily in a gravel belt that runs north-south through the center of the county. The sand and gravel are used, together with Portland cement or asphalt, for construction and road building. Historically, extensive sand and gravel mining also occurred along the Feather River, but most of those operations have since ceased (Butte County 2012:243).

The State Geologist has not yet mapped mineral resources in Butte County, but several companies have petitioned to have properties mapped under SMARA. The Plan Area has three areas designated as mineral resources of statewide or regional importance (MRZ 2) and active aggregate mines. The Martin Marietta Materials Table Mountain Quarry is a basalt mine near Oroville, and the M&T Chico Ranch is a previously proposed but nonoperational mine (Butte County 2012:245). The Power House Aggregate Project site was classified as MRZ 2 in December 2010. This site, 7 miles south of Oroville between the east side of the Feather River and SR 70, was classified as MRZ 2 for Portland cement concrete-grade aggregate and contains resources in excess of the threshold value of \$17,157,910 (2010 dollars) required for classification as MRZ-2 (State Mining and Geology Board 2010).

According to the County General Plan 2030, there are 20 active mines in Butte County (Butte County 2007:4.6-14). Most of these mines occur in the valley in a swath along SR 99.

Gold mining was historically important in the Plan Area and still takes place in some locations, often in conjunction with aggregate operations (Butte County 2007:11-3).

There are no active mines or known minable mineral deposits in the incorporated cities of the Plan Area. In addition, land use conflicts make the start-up of new mining operations in urban areas generally unlikely.

Paleontological Resources

A number of geologic units with the potential to contain paleontological resources occur in the Plan Area. These units are the Modesto and Riverbank Formations of Pleistocene age, the Laguna Formation of Pliocene age, and the Ione Formation of Eocene age.

Paleontological sensitivity is a qualitative assessment based on the paleontological potential of the stratigraphic units present, the local geology and geomorphology, and other factors relevant to fossil preservation and potential yield. According to the Society of Vertebrate Paleontology (SVP) (2010), standard guidelines for sensitivity are (1) the potential for a geological unit to yield abundant or

significant vertebrate fossils or to yield a few significant fossils, large or small, vertebrate, invertebrate, or paleobotanical remains; and (2) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecological, or stratigraphic data (Table 8-1).

The Modesto Formation and Riverbank Formation are considered to have high sensitivity for paleontological resources, consistent with the prevailing standard of care—California’s Pleistocene nonmarine strata have yielded a wealth of stratigraphically important vertebrate fossils, including the assemblages that defined both the Rancholabrean and Irvingtonian Stages of the North American Land Mammal Chronology, which is used as a reference by paleontologists and stratigraphers across the country. Because of this wealth of information, continental deposits of Pleistocene age are almost universally treated as paleontologically sensitive in California.

The University of California Museum of Paleontology (UCMP) paleontological database contains 22 records of paleontological resources from Butte County (University of California Museum of Paleontology 2013).

Table 8-1. Paleontological Sensitivity Ratings

Potential	Definition
High	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources...Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data.
Undetermined	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.
Low	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule.
No	Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require neither protection nor impact mitigation measures relative to paleontological resources.

Source: Society of Vertebrate Paleontology 2010.

8.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for geology, soils, mineral resources, and paleontological resources in the Local Agencies’ general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA*

Requirements).³ The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

8.2.1 Methods for Impact Analysis

Impacts related to geology, soils, mineral resources, and paleontological resources were assessed on the basis of the proposed BRCP and review of applicable documents such as the Local Agencies' general plan EIRs.

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on geology, soils, mineral resources, and paleontological resources are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on geology, soils, mineral resources, and paleontological resources.

In adopting the EIRs for the local general plans, each participating jurisdiction determined the programmatic impacts on geology, soils, and mineral resources would be less than significant through the implementation of general plan policies. It is assumed that all covered activities approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to any mitigation measures identified, such that impacts would be adequately mitigated. For development-related activities, no additional mitigation measures are identified in this chapter beyond the policies identified in the general plans. Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on geology, soils, mineral resources, and paleontological resources could occur primarily during construction or maintenance of these activities. The methodology for evaluating impacts on geologic and paleontological resources also incorporates standard best management practices (BMPs) required by Caltrans during construction of transportation projects and summarized in Appendix D. The analysis assumes that Caltrans would incorporate these BMPs where appropriate on transportation projects within the Plan Area.

8.2.2 Significance Criteria

Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the action alternatives would have a significant impact on geology and seismicity, soils, mineral resources, or paleontological resources. In accordance with Appendix G of

³ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions list below.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving any of the following.
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42).
 - Strong seismic ground shaking.
 - Seismic-related ground failure, including liquefaction.
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil.
- 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.
- 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.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

8.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. Under Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plans. These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). Implementation of a conservation strategy and conservation measures would not occur. No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on geology, soils, mineral

resources, and paleontological resources associated with the conservation strategy and conservation measures would not occur.

Impact GEO-1: Expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault (NEPA: less than significant; CEQA: less than significant)

If a structure were constructed on the Cleveland fault, an active fault just south of Lake Oroville, substantial damage or harm to people or property could occur if the fault ruptures. However, the area around the Cleveland fault is designated for agricultural use. In addition, any facilities would be designed and constructed to meet relevant requirements of the CBSC, as required by the state, city, and county building codes, and as set forth in the Local Agencies' general plans and BCAG's regional plan(s). These building code requirements specify that detailed seismic investigations be completed for all public and private projects located within the boundaries of an Earthquake Fault Zone as shown on an Official Earthquake Fault Zone and that such projects receive appropriate permit approvals. State road projects would also need to comply with Caltrans requirements.

NEPA Determination: Alternative 1 would not result in the exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault because the area around the Cleveland fault is designated for agricultural use. In addition, any facilities would be required to meet building codes, and state road projects would need to meet Caltrans requirements. This impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would not result in the exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault because the area around the Cleveland fault is designated for agricultural use. In addition, any facilities would be required to meet building codes, and state road projects would need to meet Caltrans requirements. This impact would be less than significant. No mitigation is required.

Impact GEO-2: Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking (NEPA: less than significant; CEQA: less than significant)

Although the risk of strong ground shaking in the Plan Area is relatively low for California, a large earthquake on a nearby fault that could result in strong ground shaking in the Plan Area, potentially resulting in structural loss, injury, and death. However, any facilities would be designed and constructed to meet relevant requirements of the CBSC, as required by the state, city, and county building codes, and as set forth in the Local Agencies' general plans. State road projects would also need to comply with Caltrans requirements.

NEPA Determination: Alternative 1 would not expose people or structures to substantial adverse effects involving strong seismic ground shaking because facilities and state road projects constructed or operated under this alternative would be designed to meet relevant requirements of the CBSC and Caltrans requirements. This impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would not expose people or structures to substantial adverse effects involving strong seismic ground shaking because facilities and state road projects constructed or operated under this alternative would be designed to meet relevant requirements of the CBSC and Caltrans requirements. This impact would be less than significant. No mitigation is required.

Impact GEO-3: Result in substantial soil erosion or the loss of topsoil (NEPA: less than significant; CEQA: less than significant)

Ground-disturbing earthwork associated with construction may increase soil erosion rates. These activities, such as excavation, trenching, grading, and compaction, would cause groundbreaking and vegetation removal. As a result, soil would be exposed to rain and wind, potentially causing accelerated erosion, thereby resulting in significant impacts. However, ground-disturbing earthwork would need to meet the relevant requirements of the state, city, and county building codes, as set forth in the Local Agencies' general plans and ordinances. Furthermore, compliance with applicable federal and local erosion-related regulations (i.e., the SWPPPs that are developed for individual projects and the requirements of the county and city stormwater quality management codes and construction activities must obtain a Storm Water Construction General Permit as required by the CWA) would ensure that construction activities do not result in significant effects. State road projects would also need to comply with Caltrans requirements and BMPs summarized in Appendix D.

NEPA Determination: Alternative 1 would result in ground-disturbing construction activities that may increase soil erosion rates. However, these activities would be controlled by federal, state, and local requirements and thus would ensure construction activities would not result in substantial soil erosion or loss of topsoil. This impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would result in ground-disturbing construction activities that may increase soil erosion rates. However, these activities would be controlled by federal, state, and local requirements and thus would ensure construction activities would not result in substantial soil erosion or loss of topsoil. This impact would be less than significant. No mitigation is required.

Impact GEO-4: 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse (NEPA: less than significant; CEQA: less than significant)

Although the risk of strong ground shaking in the Plan Area is relatively low for California, a large earthquake on a nearby fault could cause ground shaking that could result in liquefaction or secondary ground failure, such as lateral spreading or differential settlement, which could result in structural loss, injury, and death. However, any facilities would be designed and constructed to meet relevant requirements of the CBSC, as required by the state, city, and county building codes, and as set forth in the Local Agencies' general plans. State road projects would also need to comply with Caltrans requirements.

NEPA Determination: The risk of strong ground shaking is relatively low in the Plan Area and construction or operation of facilities or state roads would need to meet relevant CBSC requirements and Caltrans requirements. Therefore, impacts would be less than significant. No mitigation is required.

CEQA Determination: The risk of strong ground shaking is relatively low in the Plan Area and construction or operation of facilities or state roads would need to meet relevant CBSC requirements and Caltrans requirements. Therefore, the impact would be less than significant. No mitigation is required.

Impact GEO-5: Be located on expansive soil, creating substantial risks to life or property (NEPA: less than significant; CEQA: less than significant)

Expansive soils occur in much of the Plan Area and could cause damage to structures if the subsoil, drainage, and foundation are not properly engineered. However, soil sampling and treatment procedures are addressed by state and local building codes.

NEPA Determination: The Plan Area contains expansive soils; however, there is a low potential for these soils to create substantial risk to life or property because soil sampling and treatment procedures would be required by state and local building codes. Therefore, the impact is less than significant. No mitigation is required.

CEQA Determination: The Plan Area contains expansive soils; however, there is a low potential for these soils to create substantial risk to life or property because soil sampling and treatment procedures would be required by state and local building codes. Therefore, the impact is less than significant. No mitigation is required.

Impact GEO-6: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (NEPA: less than significant; CEQA: less than significant)

Most new development in the county would be connected to sewer lines of the municipal wastewater systems, rather than septic systems. Development in the cities would also be connected to the municipal wastewater systems. In addition, the County's Action PUB-A12.1 is to complete and implement updates to onsite wastewater policies and standards.

NEPA Determination: Development under Alternative 1 is expected to connect to the appropriate wastewater system and therefore would not use septic tanks or alternative wastewater disposal systems. Thus, impacts would be less than significant. No mitigation is required.

CEQA Determination: Development under Alternative 1 is expected to connect to the appropriate wastewater system and therefore would not use septic tanks or alternative wastewater disposal systems. Thus, impacts would be less than significant. No mitigation is required.

Impact GEO-7: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (NEPA: less than significant; CEQA: less than significant)

Several geologic units in the Plan Area are sensitive for paleontological resources, and fossils could be present. If fossils are present, they could be damaged during ground-disturbing activities related to construction. Substantial damage to or destruction of significant paleontological resources as defined by the SVP (Society of Vertebrate Paleontology 2010) would be a significant impact. However, compliance with the Local Agencies' general plans and compliance with Caltrans BMPs would protect paleontological resources during ground disturbing activities in potential sensitive areas.

NEPA Determination: Alternative 1 ground-disturbing activities have the potential to disturb potentially significant paleontological resources if the activities occur within geologic units that are sensitive for these resources. This potential would be reduced with compliance with Local Agencies' general plans and compliance with Caltrans BMPs. No mitigation required.

CEQA Determination: Alternative 1 ground-disturbing activities have the potential to disturb potentially significant paleontological resources if the activities occur within geologic units that are sensitive for these resources. This potential would be reduced with compliance with Local Agencies' general plans and compliance with Caltrans BMPs. No mitigation required.

Impact GEO-8: Result in the loss of availability of a known mineral resource or local of regional significance (NEPA: less than significant; CEQA: less than significant)

Mining occurs in the county, and the county has two mineral resource zones. No mining or mineral resource zones occur within any of the city limits. The general plans of the County and the Cities of Oroville, Chico, and Biggs all contain policies to protect mineral resources. The City of Gridley and the City of Biggs does not have any significant mineral resources (City of Gridley 2010; City of Biggs 2014).

NEPA Determination: Alternative 1 would not result in the loss of availability of a known mineral resource because there are either no mineral resources within certain parts of the Plan Area (i.e., Gridley) or because Local Agencies' general plan policies protect mineral resources. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would not result in the loss of availability of a known mineral resource because there are either no mineral resources within certain parts of the Plan Area (i.e., Gridley) or because Local Agencies' general plan policies protect mineral resources. Impacts would be less than significant. No mitigation is required.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; operation of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Covered activities relevant to geology, soils, mineral resources, and paleontological resources are those that involve construction or those that involve earthmoving activities. Covered activities that would involve construction (including earthmoving activities) are all development activities consistent with the Local Agencies' general plans, state and local transportation projects, and water district canal installation. Conservation measures that involve earthmoving activities are certain restoration actions under the conservation strategy (CM4–CM11, CM13, CM14, and Activities to Improve Urban Stormwater Water Quality). Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA and relevant NEPA review for construction and operations-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics, including small projects or infill projects.

Impact GEO-1: Expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault (NEPA: less than significant; CEQA: less than significant)

The exposure of people and structures to surface fault rupture would be the same as under Alternative 1 because there would be no change in land use planning in the Earthquake Fault Zone or to building codes. In addition, Alternative 2 would not entail construction of public infrastructure

or private development in the Earthquake Fault Zone as a result of the conservation strategy, and no conservation measures would be undertaken in the Earthquake Fault Zone.

NEPA Determination: Alternative 2 would not result in the exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault as described for Alternative 1. In addition, the conservation strategy would not require construction of public infrastructure or private development in the Earthquake Fault Zone. This impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 would not result in the exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault as described for Alternative 1. In addition, the conservation strategy would not require construction of public infrastructure or private development in the Earthquake Fault Zone. This impact would be less than significant. No mitigation is required.

Impact GEO-2: Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 2 as under Alternative 1 because all projects would require individual permits and approvals pursuant to the Local Agencies' general plans, BCAG's regional plan(s), and Caltrans requirements as described in the discussion of Impact GEO-2 under Alternative 1. In addition, it is anticipated the implementation of the conservation strategy would have a very low potential to expose people or structures to substantial adverse effects regarding strong seismic ground shaking.

NEPA Determination: Alternative 2 would not result in the exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking as described for Alternative 1. In addition, the conservation strategy would have a very low potential for exposing people or structures. This impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 would not result in the exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking as described for Alternative 1. In addition, the conservation strategy would have a very low potential for exposing people or structures. This impact would be less than significant. No mitigation is required.

Impact GEO-3: Result in substantial soil erosion or the loss of topsoil (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 2 as under Alternative 1 because all projects would require individual permits and approvals pursuant to the Local Agencies' general plans and BCAG's regional plan(s) as described in the discussion of Impact GEO-3 under Alternative 1. In addition, BRCP AMM8 (Implement Standard Urban Stormwater Management Plans), AMM16 (Install Erosion Control Barriers), and AMM19 (Implement Wet Weather Erosion Control Plan) would be incorporated to avoid substantial erosion or the loss of topsoil during implementation of the conservation strategy and covered activities.

NEPA Determination: Like Alternative 1, Alternative 2 would not result in substantial soil erosion or loss of topsoil. In addition, implementation of AMMs during conservation measures and covered activities would further reduce soil erosion or loss of topsoil. This impact would be less than significant. No mitigation is required.

CEQA Determination: Like Alternative 1, Alternative 2 would not result in substantial soil erosion or loss of topsoil. In addition, implementation of AMMs during conservation measures and covered activities would further reduce soil erosion or loss of topsoil. This impact would be less than significant. No mitigation is required.

Impact GEO-4: 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 2 as under Alternative 1 because all projects would require individual permits and approvals pursuant to the Local Agencies' general plans and BCAG's regional plan(s) as described in the discussion of Impact GEO-4 under Alternative 1. For example, construction projects (e.g., road projects, utility installation, and new canal construction) would need to comply with the requirements of the CBSC, including geotechnical investigation and site-specific design. Additionally, state road projects would also need to comply with the requirements of Caltrans and Caltrans BMPs (summarized in Appendix D). For projects and conservation measures requiring grading, a grading permit would be required from the county and/or the city for excavation involving more than 50 cubic yards of material or disturbing more than 1 acre (depending on the jurisdiction). Improper excavation or grading could result in unstable slopes. However, compliance with state and local regulations would ensure that new construction under the covered activities and conservation measures was built according to appropriate design standards for seismic and slope stability safety.

NEPA Determination: Alternative 2 would not result in an onsite or offsite landslide, lateral spreading, subsidence, or liquefaction or collapse as a result of being located on an unstable geologic unit as described for Alternative 1. In addition, implementation of grading permits for covered activities and conservation measures requiring grading would ensure slope stability. This impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 would not result in an onsite or offsite landslide, lateral spreading, subsidence, or liquefaction or collapse as a result of being located on an unstable geologic unit as described for Alternative 1. In addition, implementation of grading permits for covered activities and conservation measures requiring grading would ensure slope stability. This impact would be less than significant. No mitigation is required.

Impact GEO-5: Be located on expansive soil, creating substantial risks to life or property (NEPA: less than significant; CEQA: less than significant)

This impact would be less than significant as with Alternative 1 because, even though expansive soils occur in the Plan Area and could cause damage to structures if the subsoils, drainage, and foundation are not properly engineered, soil sampling and treatment procedures are required by state and local building codes during the construction of buildings. This would prevent substantial risks to life or property as a result of expansive soils. It is unknown exactly where conservation measures would be implemented within the Plan Area and therefore they have the potential to be located on expansive soils. However, this applies to only a few conservation measures (e.g., Activities to Improve Urban Stormwater Water Quality, CM9-11) and these structures would not be habitable (e.g., stormwater retention basins). Furthermore, any structure would be required to follow the procedures by state and local building codes. Therefore, it is anticipated the conservation

measures would not create substantial risks to life or property as a result of potentially being located on expansive soils.

NEPA Determination: The Plan Area contains expansive soils; however, under Alternative 2 there is a low potential for these soils to create substantial risk to life or property because soil sampling and treatment procedures would be required by state and local building codes. Furthermore, conservation measures would not result in habitable structures. Therefore, the impact is less than significant. No mitigation is required.

CEQA Determination: The Plan Area contains expansive soils; however, under Alternative 2 there is a low potential for these soils to create substantial risk to life or property because soil sampling and treatment procedures would be required by state and local building codes. Furthermore, conservation measures would not result in habitable structures. Therefore, the impact is less than significant. No mitigation is required.

Impact GEO-6: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (NEPA: less than significant; CEQA: less than significant)

This impact would be less than significant as with Alternative 1 because most new development in the county would be connected to sewer lines of the municipal wastewater systems rather than septic systems. Development in the cities would also be connected to the municipal wastewater systems. In addition, the County's Action PUB-A12.1 is to complete and implement updates to onsite wastewater policies and standards. As discussed under Impact GEO-5, any structure constructed and operated under the conservation strategy is not expected to be habitable and therefore would not need wastewater disposal.

NEPA Determination: Development under Alternative 2 is expected to connect to the appropriate wastewater system and therefore would not use septic tanks or alternative wastewater disposal systems. The conservation strategy is not expected to require wastewater disposal. Thus, impacts would be less than significant. No mitigation is required.

CEQA Determination: Development under Alternative 2 is expected to connect to the appropriate wastewater system and therefore would not use septic tanks or alternative wastewater disposal systems. The conservation strategy is not expected to require wastewater disposal. Thus, impacts would be less than significant. No mitigation is required.

Impact GEO-7: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as Alternative 1 because all projects, including those undertaken to support the conservation strategy, would require individual permits and approvals pursuant to the Local Agencies' general plans and BCAG's regional plan(s). Compliance with state and local regulations would ensure protection of paleontological resources.

NEPA Determination: Alternative 2 ground-disturbing activities have the potential to disturb potentially significant paleontological resources if the activities occur within the geologic units that are sensitive for these resources. This potential would be reduced with compliance with Local Agencies' general plans and compliance with Caltrans BMPs. No mitigation is required.

CEQA Determination: Alternative 2 ground-disturbing activities have the potential to disturb potentially significant paleontological resources if the activities occur within the geologic units that are sensitive for these resources. This potential would be reduced with compliance with Local Agencies' general plans and compliance with Caltrans BMPs. No mitigation is required.

Impact GEO-8: Result in the loss of availability of a known mineral resource or local of regional significance (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 2 as under Alternative 1 because no covered activities would be located where they would conflict with active mines or lands designated as MRZ-2. Land used for conservation could occur adjacent to active mines or lands designated as MRZ-2 without negatively affecting mining.

NEPA Determination: Alternative 2 would not result in the loss of availability of a known mineral resource because there are either no mineral resources within certain parts of the Plan Area (i.e., Gridley) or because Local Agencies' general plan policies protect mineral resources. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 would not result in the loss of availability of a known mineral resource because there are either no mineral resources within certain parts of the Plan Area (i.e., Gridley) or because Local Agencies' general plan policies protect mineral resources. Impacts would be less than significant. No mitigation is required.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2, except that it uses the various general plan EIRs reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance. Covered activities relevant to geology, soils, mineral resources, and paleontological resources are those that involve construction or earthmoving activities. The categories of covered activities that would entail ground disturbance are the same as Alternative 2.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact GEO-1: Expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because under this alternative it is anticipated there may be fewer structures. Therefore, Alternative 3 would not result in the exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault as described for Alternative 2. In addition, the

conservation strategy would not require construction of public infrastructure or private development in the Earthquake Fault Zone.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-2: Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because under this alternative it is anticipated there would be fewer structures. Alternative 3 would not result in the exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking as described for Alternative 2. In addition, the conservation strategy would have a very low potential for exposing people or structures because very few structures would be built and those that are built would typically not be habitable by people.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-3: Result in substantial soil erosion or the loss of topsoil (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2 but of a slightly lesser magnitude because of the reduced development footprint. Like Alternative 2, Alternative 3 would not result in substantial soil erosion or loss of topsoil. In addition, AMMs would be incorporated during implementation of conservation measures and covered activities and further reduce soil erosion or loss of topsoil.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-4: 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because under this alternative, it is anticipated there would be less development. Alternative 3 would not result in an onsite or offsite landslide, lateral spreading, subsidence, or liquefaction or collapse as a result of being located on an unstable geologic unit, as described for Alternative 2. In addition, implementation of grading permits for covered activities and conservation measures requiring grading would ensure slope stability.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-5: Be located on expansive soil, creating substantial risks to life or property (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because under this alternative, it is anticipated there would be less development. The Plan Area contains expansive soils; however, there is a low potential for these soils to create substantial risk to life or property because soil sampling and treatment procedures would be required by state and local building codes. Furthermore, conservation measures would not result in habitable structures.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact is less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact is less than significant. No mitigation is required.

Impact GEO-6: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because under this alternative it is anticipated there would be less development. Development under Alternative 3 is expected to connect to the appropriate wastewater system and therefore would not use septic tanks or alternative wastewater disposal systems. The conservation strategy is not expected to require wastewater disposal.

NEPA Determination: The impact determination would be the same as Alternative 2; the impacts would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impacts would be less than significant. No mitigation is required.

Impact GEO-7: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because less ground disturbing activities are expected. Alternative 3 ground-disturbing activities have the potential to disturb potentially significant paleontological resources if the activities occur within the geologic units that are sensitive for these resources. This potential would be reduced with compliance with Local Agencies' general plans and compliance with Caltrans BMPs.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant. No mitigation required.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant. No mitigation required.

Impact GEO-8: Result in the loss of availability of a known mineral resource or local of regional significance (NEPA: less than significant; CEQA: less than significant)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because development would be concentrated and there is expected to be less development overall. Alternative 3 would not result in the loss of availability of a known mineral resource because there are either no mineral resources within certain parts of the Plan Area (i.e., Gridley) or because Local Agencies' general plan policies protect mineral resources.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of rangeland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2.

Covered activities relevant to geology, soils, mineral resources, and paleontological resources are those that involve construction or earthmoving activities. The categories of covered activities that would entail ground disturbance are the same under Alternative 4 as under Alternative 2. Therefore, the impact mechanisms under Alternative 4 would be the same as those under Alternative 2.

Impact GEO-1: Expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2. Alternative 4 would not result in the exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault because the area around the Cleveland fault is designated for agricultural use. In addition, the conservation strategy would not require construction of public infrastructure or private development in the Earthquake Fault Zone.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-2: Expose people or structures to potential substantial adverse effects involving strong seismic ground shaking (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2 because all projects would require individual permits and approvals pursuant to the Local Agencies' general plans, BCAG's regional plan(s), and Caltrans requirements. In addition, it is anticipated the implementation of the conservation strategy would have a very low potential to expose people or structures to substantial adverse effects regarding strong seismic ground shaking.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-3: Result in substantial soil erosion or the loss of topsoil (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2. Alternative 4 would not result in substantial soil erosion or loss of topsoil because all projects would require individual permits and approvals pursuant to the Local Agencies' general plans and BCAG's regional plan(s). In addition, implementation of AMMs during conservation measures and covered activities would further reduce soil erosion or loss of topsoil.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-4: 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2. Alternative 4 would not result in an onsite or offsite landslide, lateral spreading, subsidence, or liquefaction or collapse as a result of being located on an unstable geologic unit. In addition, implementation of grading permits for covered activities and conservation measures requiring grading would ensure slope stability.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-5: Be located on expansive soil, creating substantial risks to life or property (NEPA: less than significant; CEQA: less than significant)

The impact would be the same as under Alternative 2. The Plan Area contains expansive soils; however, under this alternative there is a low potential for these soils to create substantial risk to life or property because soil sampling and treatment procedures would be required by state and local building codes. Furthermore, conservation measures would not result in habitable structures.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-6: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2. Any development under this alternative is expected to connect to the appropriate wastewater system and therefore would not use septic tanks or alternative wastewater disposal systems. The conservation strategy is not expected to require wastewater disposal.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-7: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2 because all projects, including those undertaken to support the conservation strategy, would require individual permits and approvals pursuant to the Local Agencies' general plans and BCAG's regional plan(s). Compliance with state and local regulations would ensure protection of paleontological resources.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact GEO-8: Result in the loss of availability of a known mineral resource or local of regional significance (NEPA: less than significant; CEQA: less than significant)

This impact would be the same as under Alternative 2 because Alternative 4 would not result in the loss of availability of a known mineral resource because there are either no mineral resources within certain parts of the Plan Area (i.e., Gridley) or because Local Agencies' general plan policies protect mineral resources.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

8.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for geologic and paleontological resources is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This cumulative effects analysis for geology, soils, mineral resources, and paleontological resources considers the effects of implementing the action alternatives in

combination with other past, present, and reasonably foreseeable projects or programs. The analysis focuses on projects in the Plan Area—in particular those that could create a cumulatively significant geologic or seismic risk to people or structures, those that could result in the loss of availability of a known mineral resource, and those that could result in the damage or loss of paleontological resources. Such projects are those under the jurisdiction of the Local Agencies and BCAG. This analysis also considers whether the covered activities not analyzed in previous environmental documents would result in cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. While such projects result in placing structures or people within potentially seismically sensitive areas, these projects complied with all applicable building code and federal, state, and local requirements. This has generally not resulted in cumulatively significant effects related to geology and soils within the Plan Area. Such projects have resulted in ground disturbance in the Plan Area, including areas sensitive for paleontological resources. It is anticipated that past projects have resulted in the loss or damage of paleontological resources; whereas present and future projects that require ground disturbance must comply with state and local regulations that require stop work if potential resources are found and that require collection and categorization of the resources. Therefore, this has generally not resulted in cumulatively significant effects on paleontological resources within the Plan Area.

Alternative 1—No Project (No Plan Implementation)

All Local Agencies determined in the general plan EIRs that implementation of their general plans would result in less than cumulatively considerable impacts on geology and soils given state and local policies and requirements to reduce geologic and soil hazards. All Local Agencies except the City of Gridley determined that implementation of its general plans would result in less than cumulatively considerable impacts on paleontological resources given their current policies and measures to protect these resources. It is anticipated that facilities constructed and operated as a result of Caltrans activities or water district activities would not result in cumulatively considerable impacts on geological or paleontological resources because such facilities would be required to comply with existing regulations as described in the impact analysis above. However, the City of Gridley determined that implementation of its general plan would result in cumulatively considerable and significant impacts on paleontological resources because given the past extent of urban development and the expected scope and range of activities undertaken that could result in the loss of sites unique to the paleoenvironmental context of the area. Therefore, the No Action Alternative would contribute to cumulative impacts on paleontological resources as determined in the Gridley general plan EIR.

Alternative 2—Proposed Action

Construction in a seismically active region puts people and structures at risk from a range of earthquake-related effects—mainly seismic ground shaking. Additionally, ground disturbing activities as a result of covered activities could result in increases in soil erosion or loss of topsoil. However, as discussed above, various mechanisms are in place to reduce seismic-related risk, including project-specific geotechnical investigation and seismic design standards promulgated by

the county and city building codes, as well as by Caltrans (Appendix D). Additionally, state and local requirements such as the preparation and implementation of SWPPPs and Storm Water Construction General Permits would serve to control and reduce potential soil erosion and loss of topsoil during project-specific ground disturbing activities. The covered activities would not contribute considerably to the existing cumulative impact related to seismic hazards, soil erosion, or loss of topsoil. This impact is less than significant. No mitigation is required.

If the covered activities were to create a land use conflict that prevents mineral extraction (specifically aggregate resources), the Plan could contribute to a cumulatively significant impact. However, the Local Agencies' general plans all have policies in place to protect mineral resources, and the covered activities would not occur on land used or zoned for mining and implementation of the covered activities would not conflict with mining. Accordingly, the covered activities would not contribute considerably to the existing cumulative impact related to mineral resources. This impact is less than significant. No mitigation is required.

If the covered activities were to result in the damage or loss of paleontological resources, the Plan could result in a cumulatively significant impact. However, implementation of the policies in the Local Agencies' general plans to protect paleontological resources would reduce this impact, with the exception of the City of Gridley. As described above for Alternative 1, Gridley determined implementation of the general plan would result in cumulatively considerable impacts on paleontological resources.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

Although the extent of the ground disturbing activities, development activities, and establishment and management of conservation areas varies among these two alternatives, the mechanism and implications are the same as under Alternative 2. Neither Alternative 3 nor Alternative 4 would result in a cumulatively considerable contribution to cumulative impacts on geologic or mineral resources. However, as a result of the City of Gridley's general plan EIR determination, Alternative 3 and 4 would result in a cumulatively considerable impact on paleontological resources.

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Hydrology, Water Resources, and Water Quality

9.1 Affected Environment

This section describes the affected environment for hydrology, water resources, and water quality in the Plan Area, including the regulatory and environmental settings.

9.1.1 Regulatory Setting

Federal

Clean Water Act

The State Water Resources Control Board (State Water Board) is the state agency with primary responsibility for implementing the Federal Clean Water Act (CWA), which establishes regulations relating to water resource issues. Typically, all regulatory requirements are implemented by the State Water Board through nine regional water quality control boards (Regional Water Boards) established throughout the state. The Plan Area is within the Central Valley Water Board (Region 5).

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. Permit review is the CWA's primary regulatory tool. The following CWA sections pertain to the Plan Area.

Section 303: Impaired Waters

California adopts water quality standards to protect beneficial uses of state waters as required by CWA Section 303 and the Porter-Cologne Water Quality Control Act of 1969 (discussed below). Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of water quality-limited segments. In California, the State Water Board develops the list of water quality-limited segments; EPA approves each state's list. Waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. Section 303(d) also establishes the total maximum daily load (TMDL) process to guide the application of state water quality standards. *TMDL* is defined as the sum of the individual waste load allocations from point sources, load allocations from nonpoint sources and background loading, plus an appropriate margin of safety. A TMDL defines the maximum amount of a pollutant that a water body can receive and still meet water quality standards. TMDLs can lead to more stringent National Pollutant Discharge Elimination System (NPDES) permits (CWA Section 402). Section 303(d) impaired waters in the Plan Area are described for each major surface water feature in Section 9.1 of this chapter, *Affected Environment*.

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal permit or license to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water

pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit, discussed below) must comply with CWA Section 401. In California, the authority to grant water quality certification has been delegated to the State Water Board, and certification is issued by one of the nine geographically separated Regional Water Boards. Water quality certifications require evaluation of potential effects in light of water quality standards and CWA Section 404 criteria governing discharge of dredged and fill materials into waters of the United States. Under the CWA, the Regional Water Board must issue or waive a Section 401 Water Quality Certification for a project to be permitted under CWA Section 404.

Section 402: Permits for Discharge to Surface Waters

CWA Section 402 regulates point- and nonpoint-source discharges to surface waters through the NPDES program, administered by EPA. In California, the State Water Board is authorized by EPA to oversee the NPDES program through the Regional Water Boards (see related discussion in this section under *Porter-Cologne Water Quality Control Act*). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. The NPDES Stormwater Program regulates municipal, construction, industrial, and California Department of Transportation (Caltrans) stormwater discharges.

Municipal Stormwater Activities

CWA Section 402 mandates permits for municipal stormwater discharges, which are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4) (MS4 Permit). EPA defines an MS4 as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water.” Phase I MS4 regulations cover municipalities with populations greater than 100,000, certain industrial processes, or construction activities disturbing an area of 5 acres or more. Phase II (Small MS4) regulations require that stormwater management plans be developed by municipalities with populations smaller than 100,000 and construction activities disturbing 1 or more acres of land. The County operates under a Small MS4 permit, as required by Phase II of the NPDES, which currently covers the urbanized area around the city of Chico (discussed further under *Stormwater Management Program*, below).

MS4 permits require that cities and counties develop and implement programs and measures to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including management practices, control techniques, system design and engineering methods, and other measures, as appropriate. As part of permit compliance, these permit holders have created stormwater management plans for their respective locations. These plans outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. These requirements may include multiple measures to control pollutants in stormwater discharge. During implementation of specific projects under the program, project applicants will be required to follow the guidance contained in the stormwater management plans as defined by the permit holder in that location.

The State Water Board is advancing Low Impact Development (LID) in California as a means of complying with municipal stormwater permits. LID incorporates site design, including using

vegetated swales and retention basins and minimizing impermeable surfaces to manage stormwater to maintain a site's predevelopment runoff rates and volumes.

Caltrans Municipal Stormwater Permit

The State Water Board has identified Caltrans as an owner/operator of an MS4 pursuant to federal regulations. Caltrans' MS4 Permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state.

Caltrans' MS4 Permit contains three basic requirements.

1. Caltrans must comply with the requirements of the Construction General Permit (see below).
2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges.
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the State Water Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs.

Construction Activities

The General NPDES Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ) (Construction General Permit) regulates stormwater discharges for construction activities CWA Section 402. Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must list BMPs that the discharger will use to protect stormwater runoff and document the placement and maintenance of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants, to be implemented in case of a BMP failure; and a monitoring plan for turbidity and pH for projects that meet defined risk criteria (State Water Resources Control Board 2013). The requirements of the SWPPP are based on the construction design specifications detailed in the final design plans of a project and the hydrology and geology of the site expected to be encountered during construction.

Dewatering Activities

While small amounts of construction-related dewatering are covered under the Construction General Permit, the Central Valley Water Board has also adopted a General Order for Dewatering and Other Low Threat Discharges to Surface Waters (General Dewatering Permit). This permit

applies to various categories of dewatering activities and likely would apply to the proposed BRCP if construction required dewatering in greater quantities than that allowed by the Construction General Permit and discharged the effluent to surface waters. The General Dewatering Permit contains waste discharge limitations and prohibitions similar to those in the Construction General Permit. To obtain coverage, the applicant must submit an NOI and a Pollution Prevention and Monitoring Program (PPMP) to the Central Valley Water Board. The PPMP must include a description of the discharge location, discharge characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. A representative sampling and analysis program must be prepared as part of the PPMP and implemented by the permittee, along with recordkeeping and quarterly reporting requirements during dewatering activities. For dewatering activities that are not covered by the General Dewatering Permit, an individual NPDES permit and waste discharge requirements (WDRs) must be obtained from the Central Valley Water Board.

Section 404: Permits for Fill Placement in Waters and Wetlands

CWA Section 404 regulates the discharge of dredged and fill materials into “waters of the United States,” which are defined at 33 CFR 328.3, 40 Code of Federal Regulations [CFR] 230.3. Waters of Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States before proceeding with a proposed activity. Wetlands are defined in the regulations and USACE delineates and verifies wetlands through jurisdictional determinations (33 CFR 328.3, 40 CFR 230.3).

Applicants must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. As part of the wetland delineation and verification process, USACE will determine whether the wetlands in the project area are isolated and therefore not regulated under Section 404. The Section 404 permits are linked to the issuance of Section 401 Water Quality Certifications. If waters are deemed isolated (not waters of the United States) a Section 404 permit is not required. However, WDRs are required by the State Water Board or Regional Water Boards in lieu of a Section 401 Water Quality Certification because isolated waters are considered to be waters of the State

Compliance with Section 404 requires compliance with other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, ESA, and NHPA (Chapter 7, *Cultural Resources*) have been met. In addition, USACE cannot issue or verify any permit until a 401 Water Quality Certification or a waiver of certification has been issued by the State or Regional Water Quality Control Board. Section 404 permits may be issued for only the least environmentally damaging practical alternative (i.e., authorization of a proposed discharge is prohibited if there is a practical alternative that would have fewer significant effects and lacks other significant consequences). Certain activities identified at 40 USC 232.3 are exempt from the Section 404 of the Clean Water Act.

Rivers and Harbors Act

This Rivers and Harbors Act of 1899 prohibits the construction of infrastructure (e.g., bridges) over or in navigable waterways of the United States without Congressional approval and prohibits the fill of, or discharge of contaminated sediment to, waters of the United States without approval of USACE.

Section 10

Section 10 requires authorization from the USACE for the construction of any structure in or over navigable waters of the United States, the excavation/dredging or deposition of material in these waters, or any obstruction or alteration in navigable water.

National Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The Federal Emergency Management Agency (FEMA) manages the NFIP. FEMA creates Flood Insurance Rate Maps (FIRMs) that designate 100-year floodplain zones and delineate flood hazard areas. A 100-year floodplain zone is the area that has a one in one hundred (1%) chance of being flooded in any one year based on historical data.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), passed in 1969, complements the CWA. It established the State Water Board and divided the state into nine regions, each overseen by a Regional Water Board. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, although much of its daily implementation authority is delegated to the Regional Water Boards, which are responsible for implementing CWA Sections 401, 402 and 303(d). In general, the State Water Board manages both water rights and statewide regulation of water quality, while the Regional Water Boards focus exclusively on water quality within their regions.

The Porter-Cologne Act provides for the development and periodic review of Water Quality Control Plans (basin plans) for each region. The *Basin Plan for the Sacramento and San Joaquin Rivers Basin* (Basin Plan) (California Regional Water Quality Control Board 2009) identifies beneficial uses of the river and its tributaries and water quality objectives to protect those uses. Basin plans are implemented primarily by using the NPDES permitting system to regulate waste discharges so that water quality objectives are met (see discussion of the NPDES system under CWA above). Basin plans are updated every 3 years and provide the technical basis for determining WDRs and taking enforcement actions.

Central Valley Regional Water Quality Control Board

The Central Valley Regional Water Board is responsible for implementing its Basin Plan for the Sacramento and San Joaquin Rivers Basin (California Regional Water Quality Control Board 2009). The Central Valley Regional Water Board Basin Plan was last updated in 2009.

Beneficial uses represent the services and qualities of a water body (i.e., the reasons the water body is considered valuable). The Central Valley Regional Water Board basin plan describes beneficial uses for the waters in the Sacramento River watershed. Table 9-1 lists the beneficial uses for water bodies that are within or have influence on the hydrology of the Plan Area and could be affected by covered activities.

Table 9-1. Designated Beneficial Uses for Water Bodies within the Plan Area

Beneficial Uses	Big Chico Creek	Butte Creek (below Chico, including Butte Slough)	Sacramento River (Shasta Dam to Colusa Main drain)	Feather River (Fish Barrier Dam to Sacramento River)
Municipal and Domestic			X	X
Agriculture—Irrigation	X	X	X	X
Agriculture—Stock Watering	X	X	X	
Industrial Process Water				
Industrial Service Supply			X	
Hydropower			X	
Rec-1—Contact	X	X	X	X
Rec 1—Canoeing & Rafting	X	X	X	X
Rec-2—Other Non-Contact	X		X	X
Freshwater Habitat—Warm	X	X	X	X
Freshwater Habitat—Cold	X	X	X	X
Migration—Warm			X	X
Migration—Cold	X	X	X	X
Spawning—Warm	X	X	X	X
Spawning—Cold	X		X	X
Wildlife Habitat	X	X	X	X
Navigation			X	X

Source: California Regional Water Quality Control Board 2009.

X = Present or Potential Beneficial Use.

Water quality objectives represent the standards necessary to protect and support designated beneficial uses. The Regional Water Boards have set water quality objectives for all surface waters in their respective regions (including the Sacramento River Basin) for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen (DO), floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. Water quality objectives can consist of numerical and/or narrative criteria.

Another method the Central Valley Regional Water Board uses to implement the basin plan criteria is by issuing WDRs. WDRs are issued to any entity that discharges to a surface water body and does not meet certain water quality criteria such as those related to sediment. The WDR/NPDES permit also serves as a federally required NPDES permit (under the CWA) and incorporates the requirements of other applicable regulations.

State Implementation Plan

In 1994, the State Water Board and EPA agreed to a coordinated approach for addressing priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. In March 2000, the State Water Board adopted a State Implementation Plan (SIP) for priority toxic pollutant water quality criteria contained in the California Toxics Rule (CTR). The SIP applies to discharges of toxic pollutants into inland surface waters, enclosed bays, and estuaries of California subject to regulation

under the state's Porter-Cologne Act (Division 7 of the Water Code) and the federal CWA. Such regulation may occur through the issuance of NPDES permits or other relevant regulatory approaches. The goal of this policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency. As such, SIP is a tool to be used in conjunction with watershed management approaches and, where appropriate, the development of TMDLs to ensure achievement of water quality standards (water quality criteria or objectives and the beneficial uses they are intended to protect, as well as the state and federal antidegradation policies).

California Department of Fish and Game

Under Sections 1601–1607 of the California Fish and Game Code, CDFW is responsible for the protection and conservation of the state's fish and wildlife resources. CDFW regulates projects that affect the flow, channel, or banks of rivers, streams, and lakes. Sections 1601 and 1603 require public agencies and private individuals respectively to notify and enter into a streambed or lakebed alteration agreement with CDFW before beginning construction of a project that will divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed.

Section 1601 contains additional prohibitions against the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. Sections 1601–1607 may apply to any work undertaken within the 100-year floodplain of any body of water or its tributaries, including intermittent stream channels. In general, however, it is construed as applying to work within the active floodplain and/or associated riparian habitat of a wash, stream, or lake that provides benefit to fish and wildlife. Sections 1601–1607 typically do not apply to drainages that lack a defined bed and banks, such as swales, or to very small bodies of water and wetlands such as vernal pools.

Senate Bill 5

Senate Bill (SB) 5, signed into California state law on October 10, 2007, enacts the Central Valley Flood Protection Act (CVFPA) of 2008. The following list identifies the requirements of the California Department of Water Resources (DWR) and the Central Valley Flood Protection Board (CVFPB) under SB 5.

- Requires preparing and adopting a Central Valley Flood Protection Plan (CVFPP) by 2012 (described below).
- Requires establishing 200-year protection as the minimum urban level of flood protection, effective with respect to specific development projects as of 2015 or 2025.
- Sets deadlines for cities and counties in the Central Valley to amend their general plans and their zoning ordinances to conform to the CVFPP within 24 months and 36 months (i.e., approximately 2014 and 2015), respectively, of its adoption.
- Obligates Central Valley counties to develop flood emergency plans within 24 months of adoption of the CVFPP.
- Requires DWR to propose amendments to the California Building Standards Code (CBSC) to protect areas with flood depths anticipated to exceed 3 feet for the 200-year flood event. SB 5 requires that CBSC amendments be designed to reduce the risk of flood damage and increase safety.

SB 5 prohibits local governments from entering development agreements or approving entitlements or permits that result in construction of a new residence in a flood zone unless one of these three conditions are met.

- Flood management facilities a level of protection necessary to withstand a 200-year flood event.
- The development agreement or other entitlements include conditions that provide protections necessary to withstand a 200-year flood event.
- The local flood management agency has made adequate progress on construction of a flood protection system that shall result in protections necessary to withstand a 200-year flood even by 2025.

Central Valley Flood Protection Plan

The CVFPP, as set forth in Water Code, Section 9614, was adopted on June 29, 2012. The CVFPP proposes a “systemwide investment approach” for integrated, sustainable flood management in areas currently protected by facilities of the State Plan of Flood Control. The CVFPP includes the following elements.

- A description of the Flood Management System, its performance, and the challenges to modifying it.
- A description of the facilities included in the State Plan of Flood Control.
- A description of probable impacts of projected climate change, land-use patterns, and other potential challenges.
- An evaluation of needed infrastructure improvements and identification of facilities recommended for removal.
- A description of both structural and nonstructural methods for providing an urban level of flood protection to currently urbanized areas in the Central Valley.

California Department of Pesticides Regulation

California Department of Pesticides Regulation (DPR) is the lead agency for regulating the registration, sales, and use of pesticides in California. It is required by law to protect the environment, including surface waters, from environmentally impacts of pesticides by prohibiting, regulating, or controlling the uses of such pesticides. DPR has both a Surface Water and Groundwater Protection Program that addresses sources of pesticide residues in surface waters and have preventive and response components that reduce the presence of pesticides in surface and groundwater. The preventive component includes local outreach to promotion of management practices that reduce pesticide runoff and prevent continued movement to groundwater in contaminated areas. In order to promote cooperation to protect water quality from the adverse effects of pesticides, DPR and the State Water Board signed a Management Agency Agreement (MAA). The MAA, and its companion document, *The California Pesticide Management Plan for Water Quality*, are intended to coordinate interaction, facilitate communication, promote problem solving, and ultimately assure the protection of water quality.

Local

Butte County General Plan 2030

Goals, policies, and actions from the County General Plan 2030 that pertain to hydrology and water quality are described in Water Resources Element (Butte County 2012). These policies and actions are designed to protect, maintain, and restore water resources within the county. In addition, the Health and Safety Element addresses flood management. These goals and policies are summarized below.

Water Resources Element

Goals

Goal W-1: Maintain and enhance water quality.

Goal W-2: Ensure an abundant and sustainable water supply to support all uses in Butte County.

Goal W-3: Effectively manage groundwater resources to ensure a long-term water supply for Butte County.

Goal W-5: Promote water conservation as an important part of a long-term and sustainable water supply.

Goal W-6: Improve streambank stability and protect riparian resources.

Policies

Policy W-P1.1: County planning and programs shall be integrated with other watershed planning efforts, including best management practices, guidelines and policies of the Central Valley Regional Water Quality Control Board (CVRWQCB).

Policy W-P1.2: The County shall cooperate with State and local agencies in efforts to identify and eliminate or minimize all sources of existing and potential point and non-point sources of pollution to ground and surface waters, including leaking fuel tanks, discharges from storm drains, auto dismantling, dump sites, sanitary waste systems, parking lots, roadways and logging and mining operations.

Policy W-P1.3: Regulations that protect water quality from the impacts from agricultural activities shall be maintained.

Policy W-P1.4: Where appropriate, new development shall be Low Impact Development (LID) that minimizes impervious area, minimizes runoff and pollution and incorporates best management practices.

Policy W-P1.5: Pest-tolerant landscapes shall be encouraged to minimize the need for pesticides.

Policy W-P1.7: Agriculture, logging, mining, recreational vehicle use and other open space uses shall follow best management practices to minimize erosion and protect water resources.

Policy W-P2.1: The County supports solutions to ensure the sustainability of community water supplies.

Policy W-P2.2: The County shall continue the Four-County Memorandum of Understanding (MOU) with Colusa, Glenn, Tehama and Sutter Counties, and shall continue to foster regional cooperation with other counties and water purveyors.

Policy W-P2.4: The County's State Water Project allocation should be fully utilized within Butte County.

Policy W-P2.8: The County supports Area of Origin water rights, the existing water right priority system and the authority to make water management decisions locally to meet the county's current and future needs, thereby protecting Butte County's communities, economy and environment.

Policy W-P2.9: Applicants for new major development projects, as determined by the Department of Development Services, shall demonstrate adequate water supply to meet the needs of the project, including an evaluation of potential cumulative impacts to surrounding groundwater users and the environment.

Policy W-P3.1: The County shall continue to ensure the sustainability of groundwater resources, including groundwater levels, groundwater quality and avoidance of land subsidence, through a basin management objective program that relies on management at the local level, utilizes sound scientific data and assures compliance.

Policy W-P3.2: Groundwater transfers and substitution programs shall be regulated to protect the sustainability of the County's economy, communities and ecosystem, pursuant to Chapter 33 of the Butte County Code.

Policy W-P3.3: The County shall protect groundwater recharge and groundwater quality when considering new development projects.

Policy W-P5.2: New development projects shall identify and adequately mitigate their water quality impacts from stormwater runoff.

Policy W-P5.3: Pervious pavements shall be allowed and encouraged where their use will not hinder mobility.

Policy W-P5.4: Temporary facilities shall be installed as necessary during construction activities in order to adequately treat stormwater runoff from construction sites.

Policy W-P5.5: Stormwater collection systems shall be installed concurrently with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.

Policy W-P6.1: Any alteration of natural channels for flood control shall retain and protect riparian vegetation to the extent possible while still accomplishing the goal of providing flood control. Where removing existing riparian vegetation is unavoidable, the alteration shall allow for reestablishment of vegetation without compromising the flood flow capacity.

Policy W-P6.2: Where streambanks are already unstable, as demonstrated by erosion or landslides along banks, tree collapse, or severe in-channel sedimentation, proponents of new development projects shall prepare a hydraulic and/or geomorphic assessment of on-site and downstream drainageways that are affected by project area runoff.

Health and Safety Element

Goals

HS-2: Protect people and property from flood risk

HS-3: Prevent and reduce flooding

Policies

HS-P2.1: The County supports the efforts of regional, State and federal agencies to improve flood management facilities along the Sacramento River while conserving the riparian habitat of the river.

HS-P2.2: The County supports the efforts of private landowners and public agencies to maintain existing flood management facilities.

HS-P2.3: The County supports the Flood Mitigation Plan and the Flooding Mitigation Action Plan in the Butte County Multi-Jurisdictional All-Hazard Pre-Disaster Mitigation Plan (MHMP).

HS-P2.4: Development projects on lands within the 100-year flood zone, as identified on the most current available maps from FEMA, shall be allowed only if the applicant demonstrates that it will not create any additional risk or conflict (several categories identified).

HS-P2.5: The lowest floor of any new construction or substantial improvement within Flood Zones A, AE, AH and shaded Zone X, as shown in Figure HS-1 or the most current maps available from FEMA, shall be elevated 1 foot or more above the 100-year flood elevation. (County Flood Ordinance Sec. 26-22). Within urban or urbanizing areas, as defined in Government Code 65007, the lowest floor of any new construction or substantial improvements shall be elevated a minimum of 1 foot above the 200-year flood elevation.

HS-P2.6: After General Plan 2030 and the Zoning Ordinance are amended to be consistent with the Central Valley Flood Protection Plan, scheduled for adoption in July 2012, the County shall make specific findings prior to approval of a development agreement, subdivision or discretionary permit or other discretionary entitlement, or any ministerial permit that would result in the construction of a new residence. The County shall make findings that it has imposed conditions that will protect the property to the urban level of flood protection, as defined in Government Code Section 65007, in urban and urbanizing areas, or to the national Federal Emergency Management Agency standard of flood protection in non-urbanized areas.

HS-P3.1: Watersheds shall be managed to minimize flooding by minimizing impermeable surfaces, retaining or detaining stormwater and controlling erosion.

HS-P3.2: Applicants for new development projects shall provide plans detailing existing drainage conditions and specifying how runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility and shall provide that there shall be no increase in the peak flow runoff to said channel or facility.

HS-P3.3: All development projects shall include stormwater control measures and site design features that prevent any increase in the peak flow runoff to existing drainage facilities.

Butte County Integrated Water Resources Plan

The County adopted an Integrated Water Resources Plan (IWRP) that establishes water management policies and priorities, as well as programs and projects to implement those policies. The Butte County IWRP policies focus on local water resource issues and cooperative water management with other entities.

Butte County Groundwater Management Plan

The California Groundwater Management Act, or Assembly Bill (AB) 3030, was adopted by the California legislature in 1992, and it created provisions in the California Water Code Sections 10750 et seq. to manage the safe production, quality, and proper storage of groundwater. Adoption of a Groundwater Management Plan (GMP) is not required by law, although it is encouraged.

The Butte County AB 3030 Groundwater Management Plan (Butte County GMP) documents the County's existing groundwater management programs and discusses potential future actions that could increase the effectiveness of groundwater management.

Areas managed under existing AB 3030 GMPs by a local agency (CWC § 10750.2[b]), and are therefore excluded from inclusion in the Butte County GMP, are those areas within the borders of the Biggs-West Gridley Water District, Butte Water District, Richvale Irrigation District, and Western Canal Water District. Areas overlying the groundwater basin that are regulated by the Public Utilities Commission (CWC § 10750.7[a]), and therefore excluded from inclusion in the Butte County GMP, include those areas within the service area of the California Water Service Company (Chico),

and the California Water Service Company (Oroville). In addition, the foothill and mountain areas of the County do not overlie groundwater basins, as defined in DWR Bulletin 118-2003, and are therefore not included under the Butte County GMP.

Butte County Stormwater Management Program

Butte County's Stormwater Management Program fulfills the requirements of the Small MS4 permit (Phase II), and the program is managed at the state level by the State Water Board. The program was fully implemented by July 1, 2008. Currently, Butte County's Small MS4 Permit covers the urbanized area around the city of Chico. The program includes: unlawful discharge detection and elimination; pollution prevention for County facilities and operations; construction site stormwater runoff control; postconstruction stormwater management for new development and re-development; BMPs to address specific activities identified in the regulations, such as unlawful discharge; public participation/involvement; and public education and outreach.

The Department of Public Works and the Development Services Department are responsible for planning, inspection, enforcement, and permit clearances for construction projects in the county. The Department of Public Works is responsible for the county's stormwater drainage system.

Butte County Ordinances

Groundwater Conservation Ordinance

The Butte County Groundwater Conservation Ordinance (Chapter 33 of the Butte County Code) is intended to conserve groundwater by regulating water transfers that have a groundwater component to outside of the county. A permit is required for groundwater exportation outside the county as well as for groundwater pumping as a substitute for surface water exported outside the county. The ordinance prohibits permits for water transfers outside of the county if the proposed activity would adversely affect the county's groundwater resources.

Groundwater Management Ordinance

In February 2004, the County Board of Supervisors adopted the Butte County Groundwater Management Ordinance (Chapter 33A of the Butte County Code) that requires the development and monitoring of basin management objectives (BMOs) associated with groundwater quality and elevations and land subsidence. BMOs are locally developed guidelines for groundwater management that describe actions to be taken by well owners in response to well-monitoring data. BMOs were incorporated into California Water Code Section 10750 et seq., allowing for local development of AB 3030 GMPs. Effective January 1, 2003, a BMO is one of the mandatory components in an overall groundwater management plan required to receive grant funding from DWR for groundwater-related studies, construction of groundwater projects, or groundwater quality projects.

Stormwater Management and Discharge Control Ordinance

The Butte County Stormwater Management and Discharge Control Ordinance (Chapter 50 of the Butte County Code) gives the County the legal authority to protect and enhance the water quality of watercourses and water bodies within the unincorporated MS4 permitted area of the county in a manner consistent with the CWA, the Porter-Cologne Act, and the County Stormwater Management

Program, by reducing pollutants in stormwater discharges to the maximum extent practicable and by prohibiting non-stormwater discharges from entering the storm drain system.

Onsite Wastewater Ordinance

Butte County's Wastewater Ordinance regulates individual onsite wastewater treatment and disposal systems within unincorporated areas of the county. The ordinance was recently updated in 2010 to be more consistent with applicable requirements of the Central Valley Regional Water Board's basin plan and to incorporate other changes based on the current state of knowledge and advances in practices and technologies for onsite wastewater treatment and dispersal. The Butte County Division of Environmental Health is responsible for permitting and inspecting onsite wastewater systems. As part of this effort, the majority of septic systems in the Chico Area are being replaced with sewer connections to reduce nitrate contamination of the groundwater.

Flood Hazard Prevention Ordinance

The Butte County Flood Hazard Prevention Ordinance (Chapter 26, Article IV of the Butte County Municipal Code) requires that all applications for new construction or subdivisions within flood hazard areas are reviewed by the Department of Development Services. Further, the ordinance requires that the lowest floor of any new construction or substantial improvement within Flood Zones A, AE, AH and shaded Zone X be elevated 1 foot or more above the regulatory flood elevation. Applicants must demonstrate that development within the floodplain will not raise the existing flood level such that neighboring properties are adversely affected.

City of Oroville 2030 General Plan

The City of Oroville 2030 General Plan's Open Space, Natural Resources, and Conservation Element (City of Oroville 2009b) includes goals, policies, and actions intended to protect water quality and quantity in creeks, lakes, natural drainages, and groundwater basins in Oroville. These City of Oroville General Plan goals, policies, and actions follow the general issues in the County General Plan 2030, with some variations to fit the City's jurisdiction and perspective. Because they generally agree with and support the County General Plan 2030 goals and policies, they are not separately listed.

City of Gridley 2030 General Plan

The City of Gridley 2030 General Plan's Conservation Element and Public Facilities Element (City of Gridley 2010) includes the goals, policies, and implementation strategies intended to maintain and improve surface water and groundwater quality and to ensure efficient local use of water. These City of Gridley General Plan goals, policies, and implementation strategies follow the general issues in the County General Plan 2030, with some variations to fit the City's jurisdiction and perspective. Because they generally agree with and support the County General Plan 2030 goals and policies, they are not separately listed.

Chico 2030 General Plan

The Chico 2030 General Plan's Parks Public Facilities and Services Element, Open Space and Environment Element, and Safety Element (City of Chico 2011b) include goals, policies, and actions intended to conserve local water resources, improve local surface water and groundwater quality, provide adequate drainage, and provide flood protection. These City of Chico General Plan goals,

policies, and actions follow the general issues in the County General Plan 2030, with some variations to fit the City's jurisdiction and perspective. Because they generally agree with and support the County General Plan 2030 goals and policies, they are not separately listed.

Chico Sanitary System Management Plan

The City of Chico Sanitary Sewer Management Plan was prepared in compliance with requirements of the State Water Board Order No. 2006-0003, which requires all public wastewater collection system agencies in California with greater than 1 mile of sewers to be regulated under General Waste Discharge Requirements. The Sanitary Sewer Management Plan is a compilation of the policies, procedures (including a Sanitary Sewer Overflow Response Plan), and activities that are included in the planning, management, operation, and maintenance of the city of Chico's sanitary sewer system. The Sanitary Sewer Overflow Response Plan establishes guidelines for responding to sewer spills to minimize the volume and eliminate the cause of sewage releases, contain spilled sewage, minimize public contact with spilled sewage, mitigate the impact of spilled sewage, and meet regulatory reporting requirements.

City of Biggs General Plan 1997 – 2015

The City of Biggs General Plan's Conservation and Recreation Element and Public Facilities Element (City of Biggs 2011) includes goals, policies, and programs intended to ensure that local water supplies (groundwater) are ample, to maintain surface water and groundwater quality, to provide for the safe collection, transport, and discharge of stormwater, and to protect people and property from flooding. These City of Biggs General Plan goals, policies, and actions follow the general issues in the County General Plan 2030, with some variations to fit the City's jurisdiction and perspective. Because they generally agree with and support the County General Plan 2030 goals and policies, they are not separately listed.

9.1.2 Environmental Setting

Surface Hydrology

Precipitation

Annual precipitation in the Plan Area ranges from less than 20 inches in the western valley area (along the Sacramento River) to about 30 inches along the foothills (western boundary of the Plan Area) because precipitation increases with elevation. Rainfall is more than 80 inches in the eastern Cascade Range and Sierra Nevada. Up to 4,000 feet above sea level, most of the precipitation falls as rain, whereas above 4,000 feet, a considerable portion of winter precipitation occurs as snow (Butte County Association of Governments 2012:Figure 3-5). About 80% of the precipitation in the Plan Area occurs in the winter and spring months (November–March). Although the Cascade Range and Sierra Nevada are outside the Plan Area, rivers and streams that flow through the Plan Area originate in these high-rainfall mountain areas (e.g., Feather River, Butte Creek). A large fraction of the rainfall in the Plan Area is retained in the soils and provides moisture for natural vegetation, orchards, and crops, or percolates to the shallow groundwater. Rainfall along the foothill region may be retained in the vernal pool complexes (with impervious soils or hardpan) or may recharge the deeper aquifer units (e.g., Tuscan or Laguna formations) that underlie the Plan Area. Some stormwater runoff occurs during each rainfall event, and higher stream flows with some local flooding may occur during major storms.

Watersheds and Rivers

Figure 9-1 shows the major rivers, stream, canals, and other hydrologic features within the Plan Area. Butte County is located on the east bank of the Sacramento River, and the Feather River flows through the Plan Area (with Lake Oroville to the east). The Thermalito Afterbay and Feather River are within the Plan Area. There are no Section 10 waterways in the Plan Area. Table 9-2 lists the watersheds for several major streams in the county, which are identified by the stream network and topography, although drainage patterns in the agricultural regions of the Plan Area are more difficult to characterize. Watersheds of the Plan Area are defined in the USGS National Hydrography Dataset (2012:Butte County Association of Governments 2015).

Table 9-2. Watersheds and Water Inventory Units in the Plan Area of Butte County

Watershed	Acres
Angel Slough	39,153
Big Chico Creek	8,842
Gilsizer Slough-Snake River	21,819
Honcut Creek	88,590
Jewett Creek-Sacramento River	8,017
Lower Butte Creek	165,636
Lower Feather River	210
Lower Middle Fork Feather River	1,149
Lower North Ford Feather River	2,124
Middle Butte Creek	89,965
Mud Creek	52,602
Pine Creek	30,824
Sacramento River	6,242
Upper Feather River	47,171
West Branch Feather River	1,860
Total	564,204

Source: USGS National Hydrography Dataset (NHD) (2012) in Butte County Association of Governments 2015.

The riparian corridors in the county are a very important element in the BRCP because they provide habitat for a variety of species within the Plan Area (see Chapter 6, *Biological Resources*). The major streams in the Plan Area with riparian corridors include (from north to south) Pine Creek, Rock Creek, Big Chico Creek, Little Chico Creek, Butte Creek, Little Dry Creek, Dry Creek, Wyandott Creek, and Honcut Creek (southern boundary of the county). The riparian and floodplain lands along the Sacramento River and Feather River are also important habitat corridors for the BRCP. Major project levees on the left bank (east) of the Sacramento River begin near the southern County boundary (with Glenn County), and begin on the right bank (west) of the Sacramento River at Ord Ferry. During very high runoff events, a portion of the Sacramento River flows into the Butte Sink portion of the county downstream of the mouth of Big Chico Creek. Much of this portion of the Sacramento River floodplain is protected in various wildlife refuge areas located along the river within the Plan Area.

Big Chico Creek originates on Colby Mountain in Tehama County. Big Chico Creek drains the northwestern portion of the Plan Area and flows 46 miles from its origin to the Sacramento River at the western boundary of the Plan Area. Big Chico Creek flows through the city of Chico's Bidwell Park, One Mile dam, the California State University, Chico campus, and Bidwell Golf Course before joining Mud Creek, Rock Creek, Lindo Channel, and ultimately the Sacramento River. The majority of Big Chico Creek flow enters in the upper third of the creek's drainage (Big Chico Creek Watershed Alliance 2011a:1). Flows in Big Chico Creek are typically highest January through April and lowest in September and October.

Butte Creek drains the central to southwestern portion of the Plan Area. Butte Creek originates on the western slope of the Sierra Nevada. Butte Creek enters the Sacramento Valley southeast of Chico and meanders to the southwest to the initial point of entry into the Sacramento River at Butte Slough. Butte Creek also enters the Sacramento River through the Sutter Bypass and Sacramento Slough. Flows in Butte Creek are typically highest January through April and lowest in September and October.

The Feather River originates in the Sierra Nevada, above Oroville Reservoir and east of the Plan Area, and flows southward from Oroville through the Plan Area. Flows from Wyandott Creek join Honcut Creek which flows into the Feather River at the south end of the county. Flows in the lower Feather River are highly regulated for hydroelectric power production, flood control, water supply, and fish protection flows. The great majority of the county surface water supplies originate from the Feather River. Figure 9-2 shows the irrigation and water districts in the county (located in the Plan Area) that receive their water supplies from Thermalito Forebay.

There are various types of wetlands found in the Plan Area, including, but not limited to: vernal pools, marshes, seeps, and emergent (seasonal) wetlands. Vernal pools are seasonally flooded depressions that typically are found in grasslands and have soils that allow them to collect precipitation and runoff from surrounding uplands and stay flooded longer than the surrounding uplands (California Wetland Information System 2014). Some vernal pools are connected through swales and ephemeral drainages to surface tributary systems, which connect to major creeks and rivers. Marshes are wetlands frequently or continually inundated with water, characterized by emergent soft stemmed vegetation adapted to saturated soil conditions (U.S. Environmental Protection Agency 2014). Marshes typically occur in poorly drained depressions, and in shallow water along the boundaries of lakes, ponds, and rivers (U.S. Environmental Protection Agency 2014). They receive water through precipitation, shallow groundwater, overbank flooding, and backwater flooding. Seeps have groundwater-driven hydrology. Seeps and marshes may be perennial and have water seasonally or throughout the year, depending on water source(s) and location. Emergent wetlands are in scattered locations throughout the Plan Area, generally near creeks, rivers, or areas that receive agricultural drainage (e.g., Butte Sink).

Human-made water bodies within the Plan Area include impoundments, irrigation canals, agricultural drains, managed wetlands, and flooded rice fields. The largest impoundments in the Plan Area are the Thermalito Afterbay and Thermalito Forebay, both associated with Lake Oroville, all of which are own and operated by DWR. Thermalito Forebay is an offstream reservoir that conveys generating and pumping water between the Thermalito Power Canal and the Thermalito Power Plant at the Lake Oroville dam. Thermalito Afterbay is an offstream reservoir for water storage and is the major agricultural water supply diversion for Butte County Water Districts and Irrigation Districts. Smaller impoundments for water storage and livestock are also present in the Plan Area. Managed wetlands occur primarily in the western part of the Plan Area and are

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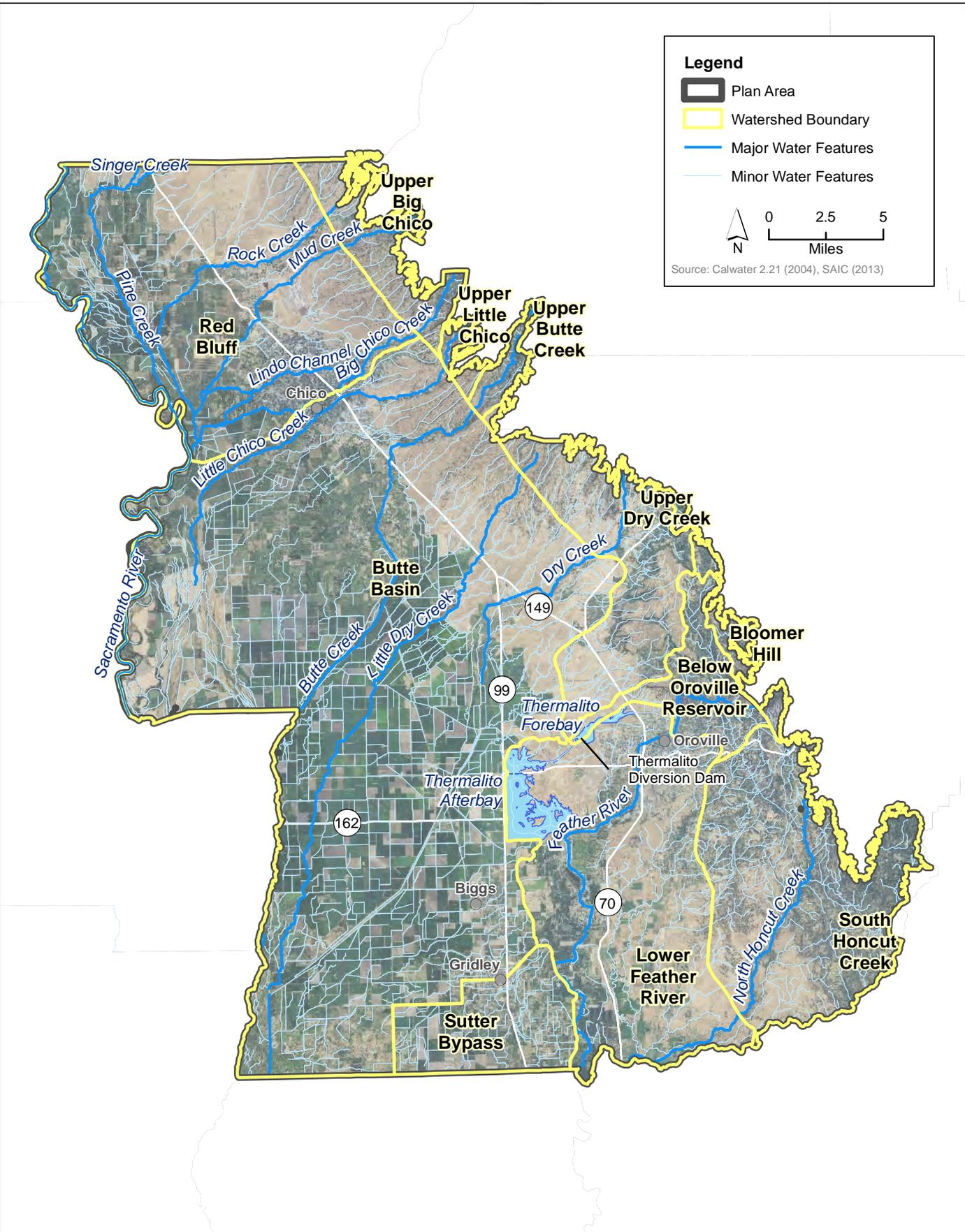
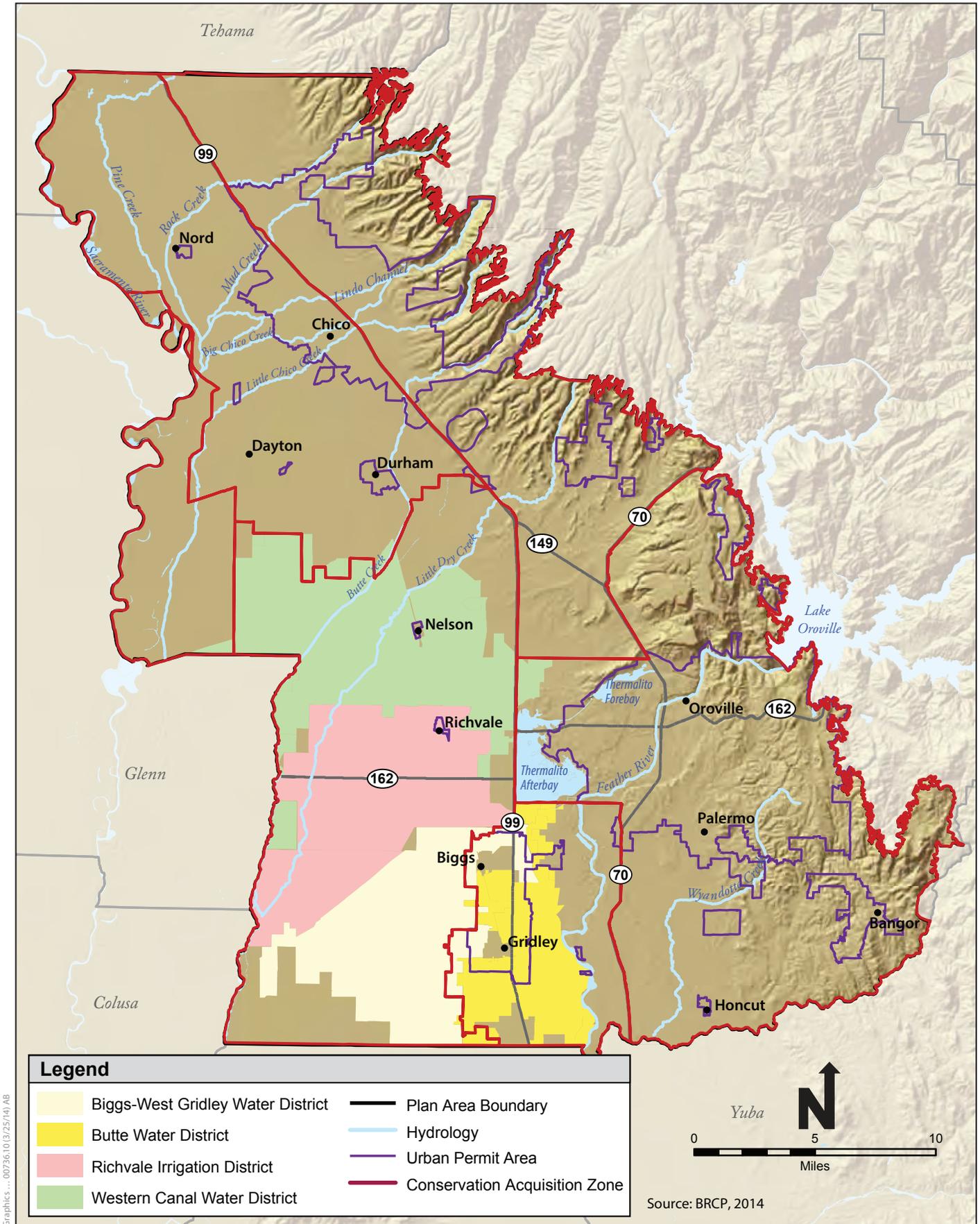


Figure 9-1
Hydrologic Features within the BRCP Plan Area



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Figure 9-2
Irrigation and Water Districts within the BRCPP Plan Area

associated with federal and state wildlife refuges (e.g., Sacramento River NWR, Llano Seco NWR, Gray Lodge Wildlife Area), mitigation bank areas (e.g., Dale Ranch Vernal Pool Conservation Bank, Porter Ranch Mitigation Bank, Shauna Downs Mitigation Bank, and Meridian Ranch Mitigation Bank), or provided private hunting clubs (Butte County 2001). These areas are flooded, particularly during the winter, to a shallow depth to provide habitat for migrating or wintering waterfowl, as well as for hunting. These wetlands support emergent aquatic vegetation if soils are moist much to all of the year. Rice fields are the dominant form of agriculture in the southwestern portion of the Plan Area. They are flooded from April to September for the rice growing season, and many are flooded again from October to January for rice decomposition and water fowl feeding and nesting habitat (Butte County 2001).

Groundwater Hydrology

This section includes information on groundwater aquifers (water-bearing geological formations) located below the Plan Area and the groundwater pumping, depth to groundwater, and the seasonal and long-term variations in the groundwater elevations (i.e., drawdown) within the Plan Area.

The Plan Area encompasses a small portion of the Sacramento Valley Groundwater Basin and a portion of the Foothill Groundwater Basin (California Department of Water Resources 2005). The Sacramento Valley Groundwater Basin extends north to south from Red Bluff to the Sacramento-San Joaquin Delta and is bordered by the Coast Ranges to the west and the Cascade Range and Sierra Nevada to the east. It covers an area of 4,900 square miles, which includes all of Sutter and parts of Butte, Glenn, Tehama, Colusa, Yuba, Yolo, Solano, Placer, and Sacramento Counties. The Sacramento Valley Groundwater Basin is composed of several geological layers (alluvial or volcanic deposits) that provide the aquifers used for county groundwater pumping.

DWR reports land and water use within the county using geographical water inventory units and sub-units corresponding to the major water districts or watershed boundaries used for water accounting. The Plan Area encompasses several subbasins. Figure 9-3 shows these sub-units which are used in the county water inventory and planning documents, including the GMP. Table 9-3 gives a general summary of the area and water supply resources (surface and groundwater pumping for the water inventory sub-units within the Plan Area of the county; part of the Mountain unit is located outside of the Plan Area).

The Butte County Department of Water and Resource Conservation have undertaken a major effort to monitor the groundwater resources and groundwater uses within the County. The County, in cooperation with DWR and supported by competent consultants, has produced a GMP, an IWRP, several water inventory and analysis reports, and a groundwater model to assist in management and planning efforts. The most detailed description of the groundwater resources and uses is the Butte County Groundwater Inventory Report (California Department of Water Resources 2005).

Table 9-3. Summary of Butte County Water Inventory Units and Water Supplies

Inventory Unit	Inventory Sub-Unit	Total Area (acres)	Irrigated with Surface (acres)	Surface Water Supply (TAF/yr)	Irrigated with GW (acres)	Irrigation Wells (number)	M&I Wells (number)	Domestic Wells (number)	Total GW Pumping (TAF/yr)	GW Applied Rate (AF/acre)	Recharge from GW (TAF/yr)	Net GW Pumping (TAF/yr)
Vina	Vina	74,395	900	3	35,800	621	55	2,096	138	3.3	27	111
West Butte	Durham/Dayton	40,000	4,000	13	26,600	568	40	1,195	95	3.2	19	76
	M&T	8,200	6,000	20	2,100	38	0	18	7	3.2	2	5
	Angel Slough	5,400	300	1	3,700	43	0	8	10	2.7	2	9
	Llano Seco	18,400	5,000	17	1,100	16	0	1	2	1.6	0	2
	Western Canal (33%)	14,750	1,300	65	1,000	36	0	15	7	4.1	1	6
East Butte	Pentz	1,900	-	0	0	39	0	172	0	0.0	0	0
	Esquon	11,600	7,000	25	3,100	108	0	291	17	4.6	4	13
	Cherokee	14,700	1,500	5	4,900	62	0	104	24	4.7	6	18
	Western Canal (67%)	30,000	26,000	150	2,300	76	0	32	15	5.3	4	11
	Richvale	39,400	33,000	182	35	72	0	87	0	5.9	0	0
	Thermalito	25,500	500	2	4,500	56	0	140	22	4.2	5	17
	Biggs-West Gridley	34,000	27,300	180	2,500	92	4	246	13	5.1	4	9
	Butte	21,400	15,000	70	6,100	183	8	571	27	3.6	6	21
Butte-Sink	10,300	4,500	15	100	11	0	4	6	8.0	0	6	
North Yuba	North Yuba	47,500	4,000	13	12,000	178	8	504	50	3.9	14	36
Foothill	Total (3 sub-units)	217,600	6,500	22	140	86	28	2,604	3	2.9	2	1
Mountain	Mountain	410,000	2,500	8	100	11	20	1,954	2	2.0	1	1
	Butte County	1,025,045	145,300	791	106,075	2,296	163	10,042	439		96	344

Source: Butte County 2001.

TAF = thousand acre-feet.

AF = acre-feet.



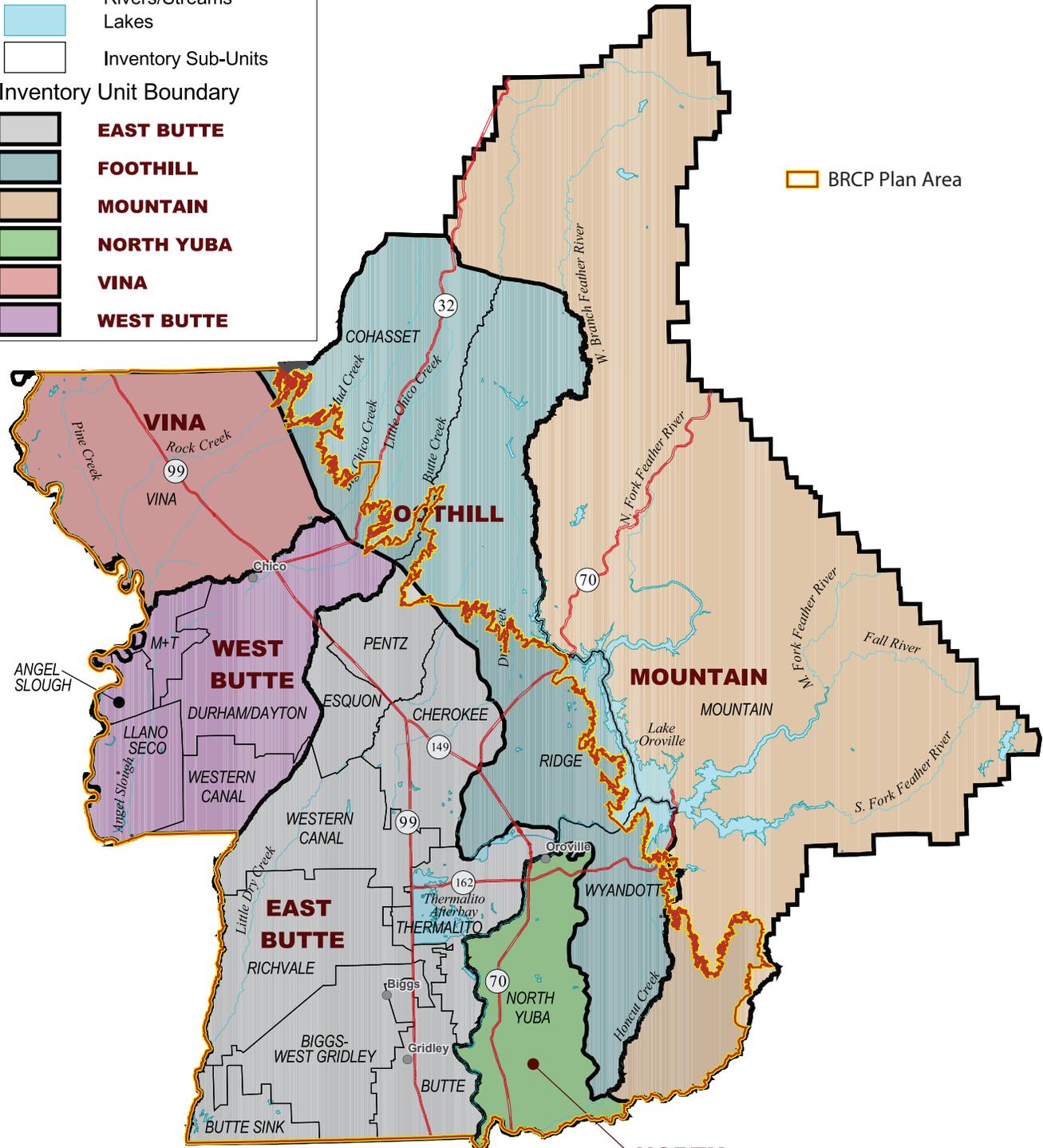
LEGEND

- Major Roads
- Rivers/Streams
- Lakes
- Inventory Sub-Units

Inventory Unit Boundary

- EAST BUTTE**
- FOOTHILL**
- MOUNTAIN**
- NORTH YUBA**
- VINA**
- WEST BUTTE**

BRCP Plan Area



Scale: 1:500,000

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Source: Butte County Department of Water and Resources Conservation 2001.



Figure 9-3
Butte County Groundwater Inventory Units
within the BRCP Plan Area

Hydrogeologic Units

The main hydrogeologic unit and source of groundwater in the county is the Tuscan Formation (California Department of Water Resources 2005). Other units that supply lesser amounts of groundwater to the county are the Laguna, Riverbank, and Modesto Formations. The Tuscan and Laguna Formations are the source of water for deeper wells such as irrigation and municipal wells.

Tuscan Formation

The Tuscan Formation is considered an important deep system that is theorized to underlie most of the valley area. It extends from east of Redding to west of Oroville and from the Cascade Range and Sierra Nevada into the subsurface about 5 miles west of the Sacramento River (California Department of Water Resources 2005:2-8).

The Tuscan Formation consists of four units, Units A through D (Butte County 2004). The total thickness of the Tuscan Formation ranges from about 1,700 feet in the east to approximately 300 feet at the westward extent (California Department of Water Resources 2005:2-8). Unit A is the oldest (deepest) deposit and is approximately 250 feet thick. Unit B is approximately 600 feet thick and lies on Unit A. Unit C is 600 feet thick and overlies Unit B. Unit D is not present in the county. Units A and B (Lower Tuscan aquifer) contain the majority of groundwater in the Tuscan Formation (Butte County 2004:2-3, 2001:3-11). Unit C (Upper Tuscan aquifer) contains groundwater in the western portion of the valley, and acts as a confining layer above Unit B (Butte County 2004:2-3). Units A, B, and C are all exposed on the east side of the valley along the foothills. Unit D is the youngest unit and is exposed only in localized areas northeast of Red Bluff and is not present in the county.

Tuscan Formation groundwater in the Sacramento Valley region is contained primarily within the pore spaces of the reworked sand and gravel layers. Much of the groundwater in the Tuscan Formation is confined by layers of impermeable clays, lahars, or tuff breccia. The permeable layers of the Unit B sediments compose the main aquifer material for groundwater storage in the valley. The fine-grained, consolidated lahars of Unit C form thick, low permeability confining layers for groundwater contained in the more permeable sediments of Unit B. Although the Tuscan Formation is unconfined where it is exposed near the valley margin, at depth the Tuscan Formation is confined and forms the major aquifer system in the county (California Department of Water Resources 2005:2-1).

Laguna Formation

The Laguna Formation is located along the eastern edge of the Sacramento Valley, from Oroville southward to Lodi. The only surface exposures of the formation within the county occur southwest of Oroville. The thickness of the Laguna Formation is difficult to determine because the base of the unit is rarely exposed. Estimates of the maximum thickness range from 180 feet to 1,000 feet (Butte County 2001:3-12: 2-4).

Quantitative water-bearing data for the Laguna Formation is limited, especially in the county area. Wells completed in the finer-grained sediments of the Laguna Formation yield only moderate quantities of water.

Riverbank Formation

The Riverbank Formation consists of gravel, sand, and silt eroded from the surrounding Coast Ranges, Klamath Range, Cascade Range, and Sierra Nevada and deposited in the Sacramento Valley. Exposures of the Riverbank Formation within the county are observed primarily west of Oroville and southward. Thickness of the Riverbank Formation ranges from less than 1 foot to over 200 feet, depending on location (Butte County 2001:3-12).

The thickness of the Riverbank Formation can be a limiting factor to the water-bearing capabilities of the formation. The Riverbank Formation is moderately to highly permeable and yields moderate quantities of water to domestic and shallow irrigation wells. It also provides water to deeper irrigation wells that have multiple zones of perforation. Well yields are higher in areas where concentrations of gravel and sand are present. Groundwater occurs generally under unconfined conditions.

Modesto Formation

The Modesto Formation consists of gravel, sand, and silt eroded from the surrounding Coast, Klamath, and Cascade ranges and the Sierra Nevada and deposited in the Sacramento Valley. Exposures of the Modesto Formation are present along most of the major streams and rivers within the county. The Modesto Formation is widespread throughout the Sacramento Valley, occurring from Redding southward into the San Joaquin Valley. The most notable occurrences are found along the Sacramento and Feather rivers. Similar to the Riverbank Formation, the Modesto Formation ranges in thickness from less than 10 feet in many of the terraces and along the margins of the valley to nearly 200 feet across the valley floor (California Department Water Resources 2005:2-11).

Like the Riverbank Formation, the thickness of the Modesto Formation limits the water-bearing capabilities of the formation. These deposits provide water to domestic and shallow irrigation wells, as well as to deeper wells with multiple zones of perforations. In locations where gravel and sand predominate, groundwater yields are moderate. Lesser yields are found in areas with high silt and clay content. Groundwater occurs generally under unconfined conditions.

Groundwater Pumping and Levels

Ninety percent of the agricultural and municipal wells are completed in the upper 600 feet and 750 feet of the aquifer, respectively. The Modesto and Riverbank formations and younger stream channel and basin deposits comprise the shallower groundwater bearing units, reaching from ground surface to maximum depth of about 200 feet. Many domestic wells draw water from this aquifer system. There are no general layers of clay separating these geological strata; the water levels in each layer are similar, and most deep wells are screened within several hundred feet of the aquifer layer(s). The groundwater resources of the county can be most easily understood by considering all of the wells to be located within one large aquifer that extends from the Sacramento River to the foothills. The groundwater elevations (i.e., water table) generally slope to the southwest, with water elevations (in wells) of about 150 to 175 feet in the vicinity of Chico and 150 to 175 feet in the vicinity of Oroville. The water elevations decrease to about 100 feet at Honcut, at the southwest corner of Thermalito Forebay, and along the border with Glenn County. The groundwater elevation is approximately 50 feet at the southwest corner of the county where Cherokee Canal meets Angel Slough.

The county groundwater elevations are controlled by the rivers and streams that form the boundaries of the county. Recharge from the rivers and streams occurs during periods of runoff and flow; seepage (e.g., springs) from the shallow groundwater to the creek channels and streams may occur during the spring and early summer because the creek channels are the lowest surface elevations throughout the Plan Area. The general southwestward water elevation pattern within the county is disrupted by a moderate groundwater depression under the city of Chico resulting from municipal pumping for the city's water supply. There is a groundwater mound near the Thermalito Afterbay associated with recharge from the facility. The extensive well monitoring in the county indicates that the depth to groundwater throughout most of the Plan Area is relatively shallow, generally ranging from less than 5 feet along Butte Sink to about 50 feet along the foothill boundary of the Sacramento Valley Groundwater Basin. Groundwater management is generally protecting the existing groundwater resources to provide sustainable pumping that is balanced by the recharge to the aquifers from upstream areas (where the aquifer is exposed), from the streams, rivers, and impoundments (Thermalito Forebay), and from rainfall infiltration and irrigation deep percolation.

The existing groundwater pumping from the county and the Plan Area is the basic data needed for effective groundwater management in the county. The Butte County GMP is based on the observed groundwater levels as well as historical and current groundwater trends based on the county's extensive groundwater monitoring program. Seasonal drawdown, which is caused by pumping for irrigation and fall flooding of rice fields, with winter-spring recharge from rainfall, streamflow, and irrigation practices, must be balanced for sustainable groundwater use. A long-term decline in the groundwater levels would indicate that the current groundwater pumping is greater than the sustainable yield of the aquifer (i.e., recharge capacity). Groundwater levels are dependent on the balance between groundwater extraction (pumping) or natural discharge (seepage) and recharge from rainfall, irrigation, and streams. Groundwater extraction or natural discharge represents the groundwater losses, whereas recharge represents groundwater replenishment (sources).

Numerous groundwater wells are used for both crop irrigation and drinking water supply in the Plan Area. The Sacramento Valley portion of the county has approximately 10,000 wells (Butte County 2005). Although groundwater provides 30–31% of the total water supply in the county, approximately 75% of the county's residential water supply (municipal or individual) is extracted from groundwater (Butte County 2010). The average depth of domestic wells in the county is about 150 feet. Irrigation and municipal wells have a greater average depth than domestic wells. The average depth for irrigation wells is about 350 feet, and the average depth for municipal wells is about 450 feet (California Department of Water Resources 2005).

Groundwater levels are monitored in the Sacramento Valley region of the county by a number of different private and public agencies, such as DWR, Butte County Department of Water and Resource Conservation (BCDWRC), and the California Water Service Company (CWSC). DWR has maintained the largest long-term groundwater level monitoring grid for over the last 50 years in the Sacramento Valley region of the county (California Department of Water Resources 2005; Butte County Water Commission 2010). CWSC currently measures monthly groundwater levels in approximately 60 municipal groundwater supply wells in the Chico urban area. These are typically deep wells that draw from the Tuscan Formation aquifer system (Butte County Water Commission 2010).

Groundwater level is monitored on a semi-annual basis. Groundwater levels typically fluctuate seasonally and from year to year. Seasonal fluctuation of groundwater levels is usually highest in the spring and lowest following the irrigation season in the fall months (Butte County Water

Commission 2010). Spring to fall fluctuation of groundwater levels in the unconfined portion of the aquifer system averages only 1 to 2 feet during years of normal precipitation and years of drought. Groundwater levels rise during the summer months as the upper aquifer recharges due to flood irrigation for rice production (Butte County Water Commission 2010).

Long-term fluctuations in groundwater level are of primary concern for water supply and environmental effects. These fluctuations occur when there is a difference between the volume of water recharged into the aquifer and the volume of water removed from the aquifer, either by extraction or natural discharge to surface water bodies. Long-term changes can be attributed to various factors including changes in groundwater extraction volumes or variations in recharge associated with wet or dry climatic cycles. The DWR Butte County Groundwater Inventory Analysis (2005) indicates that the amount of annual groundwater extraction is currently within the aquifer sustainable yield in the aquifer system beneath the Sacramento Valley region of the county. Although increased groundwater extraction can decrease groundwater levels over time if extraction volumes exceed those of recharge, the decrease in groundwater levels is not expected to change the rate of groundwater recharge, which is primarily based upon soil infiltration characteristics.

Review of historical hydrographs for long-term comparison of spring-to-spring groundwater levels indicates a decline in groundwater levels associated with the 1976–77 and 1987–94 droughts, were followed by a recovery in groundwater levels to pre-drought conditions of the early 1970s and 1980s (California Department of Water Resources 2005). The most recent groundwater level data for 2009 indicate that the southern portion of the Plan Area (i.e., Biggs-West Gridley, Richvale, and Western Canal areas) shows no significant declining trend in groundwater levels. However, wells within the Chico urban area show declining water levels ranging from less than 5 feet to more than 20 feet, and with the below-average precipitation during water years 2007 through 2009, levels continued to decline. Areas east of Durham and within Chico experienced the most significant declining trends, with groundwater levels averaging approximately 20 feet below the previous levels recorded in the mid-1980s (Butte County Water Commission 2010). Generally, however, the groundwater elevations in the county are stable, with no long-term decline; this indicates that the existing pumping (highest in dry years) should be sustainable.

Surface Water Quality

The following sections discuss specific water quality parameters and contaminants of concern in creeks and rivers in the Plan Area.

Total Suspended Solids and Turbidity

Total suspended solids (TSS) are suspended or colloidal particles in water which do not readily settle out by gravity. Streams carry much more suspended sediment during high flow periods. In surface water, TSS is indicative of upstream scouring, bank erosion, and agricultural return flow transporting and depositing sediment. Suspended sediment is considered a pollutant by the Central Valley Regional Water Board and can transport other contaminants (e.g., phosphorus) and hydrophobic contaminants (e.g., organochlorine pesticides).

Turbidity is the reduction of water clarity due to the presence of suspended or colloidal particles and is commonly used as an indicator for the general condition of water clarity. Turbidity in surface water is comprised of naturally occurring and/or introduced organic matter and inorganic minerals, such as silt, clay, industrial waste, sewage, and algae. It is quantified according to the amount of light which is reflected by the suspended particles and is measured in nephelometric turbidity units (NTUs). Turbidity is closely related to TSS, but also includes plankton and other organisms (Murphy 2009).

Water Temperature, Salinity (Electrical Conductivity), and pH

Water temperature affects the concentration of DO and is an important water quality variable for aquatic life. The Basin Plan water temperature objective requires that the temperature not exceed 56°F in the Sacramento River from Keswick Dam to Hamilton City, and not exceed 68°F from Hamilton City to the I Street Bridge during periods when temperature increases would be detrimental to the fishery (California Regional Water Quality Control Board 2009). In addition, the Basin Plan water temperature objective also requires that the temperature not deviate more than 5°F from ambient river temperature.

Electrical conductivity (EC) of water is directly related to the concentration of total dissolved solids (TDS). TDS and EC are general indicators of salinity and are regulated under the Basin Plan. Basin Plan objectives for the Feather River from the Fish Barrier Dam at Oroville to the Sacramento is 150 micromhos/cm or less in well-mixed waters of the Feather River.

Potential of hydrogen (pH) represents the effective concentration (activity) of hydrogen ions in water is reported on a scale from 0 (acidic) to 14 (alkaline). The Basin Plan objective for pH is between 6.5 and 8.5, and discharges cannot result in changes of pH that exceed 0.5 above normal ambient pH with designated cold or warm beneficial uses.

Water Quality of Major Surface Water Features

Surface water quality in the Plan Area is variable depending on the water body. Several of the larger water bodies in the Plan Area are listed as impaired according to Section 303(d) of the CWA (Section 9.1, *Regulatory Setting*). The following list of 303(d) listed impaired water bodies is based on the 2010 303(d) list. Table 9-4 summarizes water quality impairments in major surface waters in the Plan Area and the sources of these impairments.

Table 9-4. CWA Section 303(d)-Listed Impaired Water Bodies and Associated Potential Sources for Major Water Bodies within the Plan Area Watershed

Water Body	Listed Pollutants	Associated Potential Sources
Big Chico Creek	Mercury	Resource Extraction
Butte Creek	Mercury pH	Resource Extraction Source Unknown
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	Chlorpyrifos Group A Pesticides Mercury PCBs Unknown Toxicity	Agriculture Agriculture Resource Extraction Unknown Unknown
Sacramento River (Red Bluff to Knights Landing)	DDT Dieldrin Mercury PCBs Unknown toxicity	Agriculture Agriculture Resource Extraction Source Unknown Source Unknown

Source: State Water Resources Control Board 2010.

PCBs = Polychlorinated biphenyls.

DDT = Dichlorodiphenyltrichloroethane.

Big Chico Creek

Water quality in Big Chico generally meets state standards and is protective of designated beneficial uses. Potential sources of water quality impairment in the watershed include erosion from forest and rangeland roads, urban runoff in Chico residential and commercial areas, and agricultural runoff and associated pesticides, fertilizers, etc. in the lower watershed reach. Big Chico Creek is 303(d) listed as impaired for mercury (State Water Resources Control Board 2010).

Butte Creek

Overall water quality in Butte Creek is considered to be good to excellent in the upper portions of the watershed but degrades in quality lower in the system. Water quality generally varies seasonally, corresponding to precipitation and diversions, as well as annually, depending on drought or wet conditions. Major storm events typically increase turbidity and mobilize pollutants and salts, and low flows can reduce water quality by concentrating contaminants. Within the county, Butte Creek is 303(d) listed as impaired for mercury, due to resource extraction, and pH (State Water Resources Control Board 2010).

Lower Feather River

EPA and the Central Valley Regional Water Board have classified the lower Feather River (from the Oroville Dam to the confluence with the Sacramento River) as 303(d) impaired for diazinon,

chlorpyrifos, Group A pesticides,¹ mercury, and unknown toxicity (State Water Resources Control Board 2010).

Sacramento River

The Sacramento River and its tributaries are generally characterized as having good overall water quality, with relatively cool water temperatures, low biochemical oxygen demand, medium to high DO, and low mineral and nutrient content. Snowmelt serves as the primary water source for the river system. Further downstream, as water flows through the Central Valley, the river receives various pollutants and constituents associated with human activities, and water quality typically decreases. Major sources of added constituents include eroded soils, agricultural return flows, urban runoff, and discharges from municipal wastewater treatment facilities.

Known contaminants in the Sacramento River include dioxin (from paper mills), mercury, organophosphate pesticides, and constituents in acid mine drainage, agricultural runoff, and municipal non-point source pollution (U.S. Geological Survey 2011). Both total mercury and methylmercury have been detected at elevated levels in samples from the American, Feather, and Sacramento Rivers by the California State Toxic Substance Monitoring Program (U.S. Geological Survey 2011). Several reaches of the Sacramento River and its tributaries have been classified as impaired. The state's 303(d) list indicates that the reach bordering the Plan Area is impaired for dichlorodiphenyltrichloroethane (DDT), dieldrin, mercury, polychlorinated biphenyls (PCBs), and unknown toxicity (State Water Resources Control Board 2010).

Groundwater Quality

This section includes information on the quality of groundwater resources within the county and the Plan Area.

Since 2001, the Butte County Groundwater Quality Trend Monitoring Program has collected annually measurements for temperature, pH, and EC on 10 wells throughout the county, as required by Chapter 33A. Data is consistently collected at the height of the irrigation season each July/August to establish baseline levels across the county so that any future changes in water quality can be detected and further investigation and monitoring can subsequently be developed. Overall, the results of the water quality sampling indicate that groundwater in the basin is high quality, low in TDS, free of saline intrusion, and is in good health (Butte County Water Commission 2010). Although these data may provide good information on salinity, they neither fully characterize the quality of local groundwater nor provide enough information to ensure that water is safe to drink (Butte County Water Commission 2010).

According to the Department of Toxic Substances Control (DTSC), the county has two groundwater contamination plumes: the Central Plume and the Southwest Plume. Both plumes are contaminated with perchloroethylene (PCE), an organic compound originating from former dry cleaner operations, and are located in Chico. The Central Plume is the largest contaminated groundwater plume in the county, with an area of approximately 1 by 1.5 miles in size, and is located in downtown Chico. PCE concentrations have been as high as 2,900 parts per billion (ppb), causing two public wells to be closed by the CWSC in 1990. In July of 1995, DTSC installed a remediation well and

¹ Group A pesticides include aldrin, dieldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (including lindane), endosulfan, and toxaphene.

pump, which continue to remove a significant amount of PCE from the groundwater. The Southwest Plume extends about 2 miles in length and seven blocks in width in the southwest portion of Chico. In 1991, 14 private wells were shut down due to PCE contamination. In 1992, a carbon treatment unit was installed in Well 46 near the center of the plume which has significantly reduced PCE concentrations, but the average is still not below California Department of Public Health (DPH) Maximum Contaminant Level for Drinking Water of 5 ppb. Therefore, treatment is expected to continue.

Nitrate contamination of groundwater from septic tank leakages has been documented in the Chico area of the county. A Nitrate Compliance Plan, adopted by the Board of Supervisors on September 25, 2001, provides for case-by-case evaluation of non-residential septic systems and recognizes that sewer connection may not be practical or feasible in all cases.

Flooding

Butte County completed an assessment of flood hazards as part of the county's Flood Mitigation Plan. Several water bodies within the Plan Area were identified as being located within a FEMA-designated 100-year floodplain or other principal flood hazard areas. Flooding is an important safety issue in the Local Agencies' general plans. Flooding in Rock Creek and Keefer Slough has resulted in inundation of SR 99, SR 32, and county roadways, and adversely affected agricultural and residential areas around Chico and the unincorporated community of Nord. Figure 9-4 shows the FEMA-identified areas within the 100-year floodplain in the Plan Area; they are primarily located along the Sacramento River, along the Feather River, and along Butte Creek and Cherokee Canal.

Floods can occur as a result of extreme precipitation, whereby water levels of drainage ways, such as streams, creeks, and rivers, are overwhelmed by high flows from stormwater runoff that causes overtopping of banks and inundates the surrounding area. There are a number of levees in the county that provide various levels of protection for the citizens and property in the county from flooding hazards. There are also dams that serve as water storage features in the county and surrounding areas. Failure of these flood control and water storage features could lead to inundation of populated areas of the Plan Area. Figure 9-5 shows a map of the potential dam inundation areas within the Plan Area for dam and levee failures. The county and the cities of Chico, Biggs, Gridley, and Oroville are all located within dam inundation areas. However, the city of Gridley is not protected by levees.

There are a number of levees constructed by both private individuals and government agencies within the Plan Area. Many of these are aging and may need repair and maintenance in order to adequately control flood flows. Given the number of levees, and the fact that most are owned or maintained by private individuals or other public agencies, it is not feasible for Local Agencies' general plans and policies to completely address maintenance and improvements to all levees to the extent necessary to entirely eliminate risks from levee failure.

In addition, FEMA recently adopted new criteria for determining whether an area is protected by a levee from the 100-year flood. These criteria consider whether a particular segment of levee has been certified to meet the criteria to withstand the 100-year flood event. Due to these new criteria, a number of levees have been deemed to be uncertified by FEMA when they developed the 2011 FIRMs. This change in criteria led to significant areas along surface waters as being designated as being in some form of flood zone that were not before the change. The levees on the following creeks were not designed or constructed to provide the FEMA 100-year level of protection: Butte Creek

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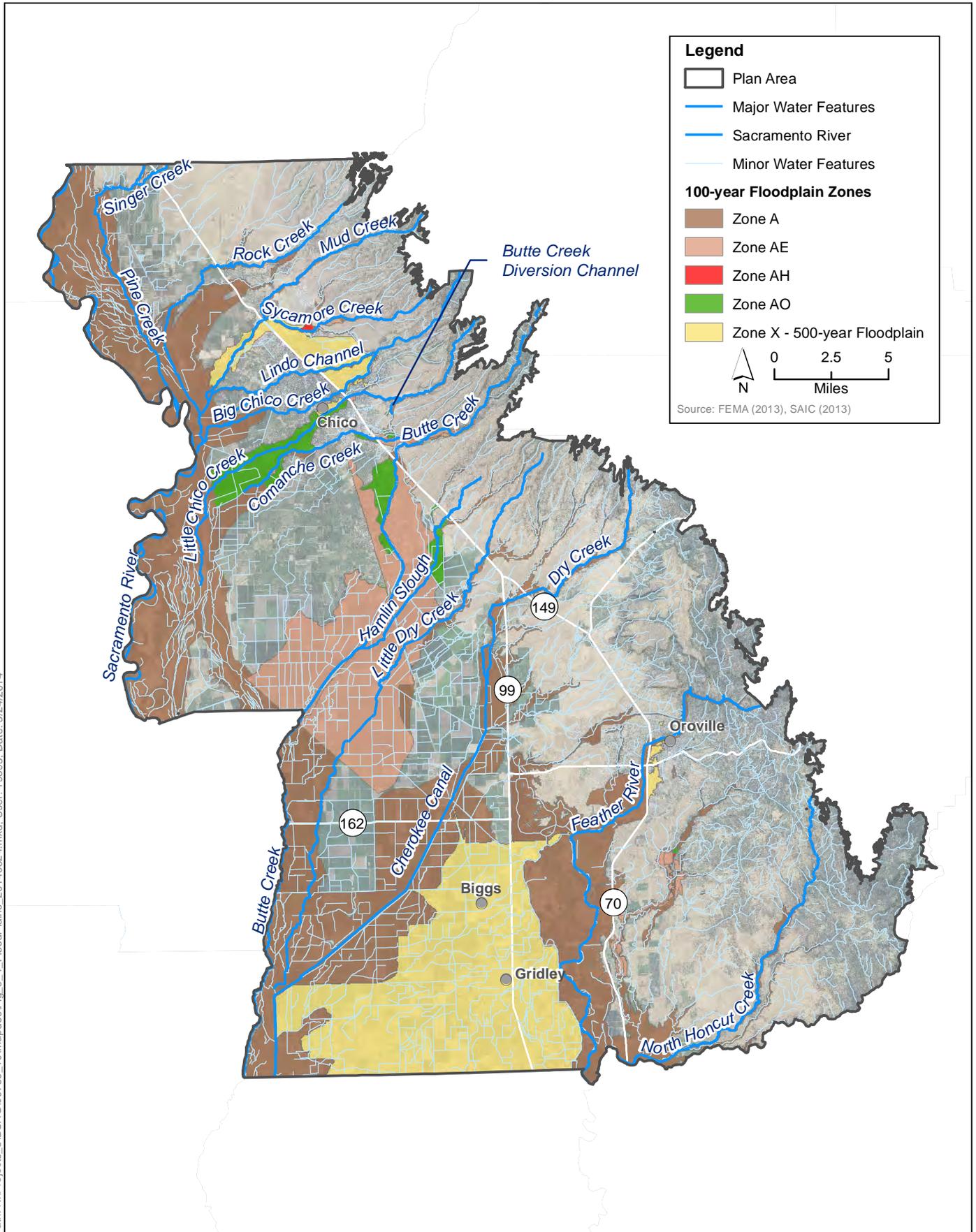
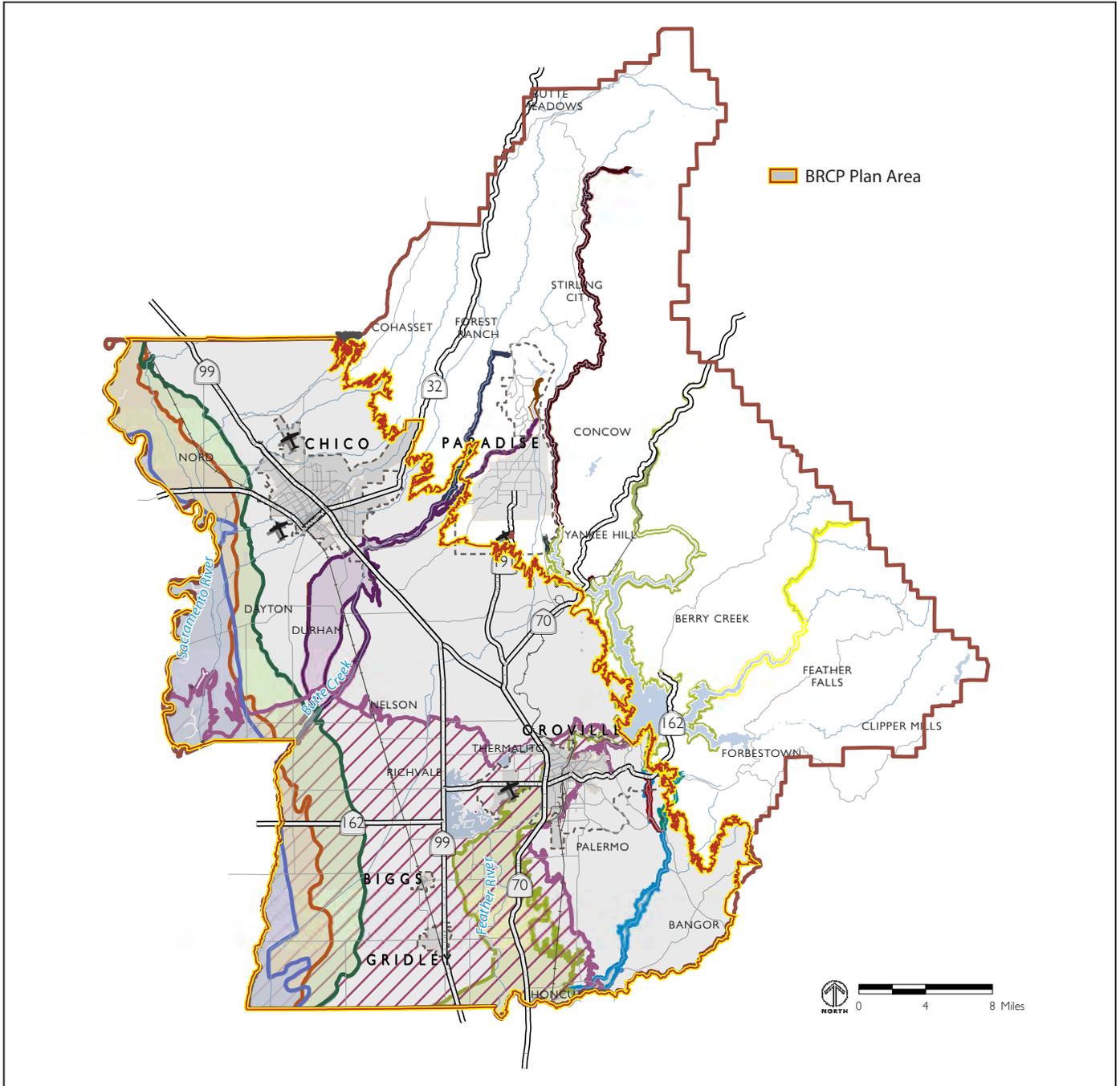


Figure 9-4
FEMA Flood Zones within the BRCP Plan Area



Sources: Butte County Geographic Information Systems, 2009; California Office of Emergency Services, 2006.



Source: Butte County, 2010.

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Figure 9-5
Dam Inundation Areas within the BRCPP Plan Area

downstream of the Skyway, Hamlin Slough, Little Chico Creek downstream of the Butte Creek Diversion Channel, Comanche Creek, and Cherokee Canal. During intense storms, water could flow over the top or otherwise breach these levees and break out of the channel, not returning to the main channel for several thousand feet downstream, if at all. Therefore, areas on the landside of these levees are shown on the 1998 and 2000 FIRMs as being subject to inundation in the base flood (i.e., flood that has a 1% chance of occurring in any year). FEMA is in the process of developing flood plans for potential levee failures along Sycamore Creek, Mud Creek, Big Chico Creek, and the west side of the Feather River (Butte County 2012).

Flood control projects on Little Chico Creek, Big Chico Creek, and Lindo Channel have helped attenuate the amount of runoff that flows through the city of Chico, reducing potential flooding problems. However, portions of the Chico adjacent to Little Chico Creek are identified as being at risk of flooding during a 100-year event. FEMA and DWR are in the process of evaluating whether various flood control infrastructure meet 100-year flood protection standards. These agencies have taken the position that various levees and flood control structures, for which adequate data is unavailable, cannot be certified or accredited as adequate to provide the required 100-year level of flood protection. As part of the flood remapping effort for the county, FEMA has indicated that areas of Chico previously mapped as protected from flooding, such as Sycamore Creek and Mud Creek, will be reclassified as subject to a 1% per year chance of flooding unless the levees are accredited. The reclassification of these areas would result in the imposition of flood insurance requirements on property owners and enhanced building permit requirements for areas in a mapped floodplain. The City of Chico and the County have entered into a Provisionally Accredited Levee (PAL) agreement with FEMA in order to postpone a reclassification of flood hazard areas until the levees are accredited (City of Chico 2011a).

Portions of the county would be subject to inundation caused by dam failure. The failure of the Oroville Dam or Thermalito Afterbay Dam, although considered unlikely, would have the potential to inundate a substantial portion of southwestern Butte County. A major seismic event, if sufficiently intense, would be the most likely cause of dam failure as a number of geologic faults have been identified in the Oroville area. The Oroville Dam could withstand a 6.5-magnitude earthquake, which is considered to be the largest credible event projected for the region. In addition, the western edge of the county is within the inundation areas of the Shasta Dam, Black Butte Dam, and Whiskeytown Dam. The Magalia Dam on Little Dry Creek (Paradise) has been found to have inadequate stability under seismic loading conditions.

9.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for hydrology, water resources, and water quality in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).² The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

² These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

9.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on water resources (including hydrology and surface and groundwater quality) are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on water resources (including hydrology and surface and groundwater quality).

In adopting the EIRs for the local general plans, each Local Agency determined the programmatic impacts on water quality and hydrology (runoff and drainage) would be mitigated to a less-than-significant level through the implementation of general plan policies and the adoption of specific actions or mitigation measures. All potential effects on groundwater resources, such as reduction in groundwater levels or overdraft of the aquifer would also be reduced to less-than-significant level through the implementation of general plan policies and the associated actions or strategies. All potential effects on local flooding would also be mitigated to a less-than-significant level through the implementation of general plan policies and mitigation measures identified in the EIRs for the general plans. It is assumed that all covered activities approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to any mitigation measures identified, such that impacts would be adequately mitigated. For development-related activities, no additional mitigation measures are identified in this EIS/EIR chapter beyond the policies identified in the general plans and mitigation measures identified in the general plan EIRs. The impact analysis related to those activities within Local Agencies' jurisdictions is organized into short-term and long-term effects where appropriate. Short-term effects would typically be those associated with construction, and long-term effects would typically be those associated with recurring maintenance or increased impervious surfaces associated with permanent development.

A qualitative impact analysis was performed activities within water and irrigation districts as they have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals; replacement of water delivery structures; replacement of large weirs; mowing and trimming vegetation along service roads; and removing aquatic vegetation from canals. Potential impacts on water resources could occur primarily during construction or maintenance of these activities. A qualitative impact analysis was performed for the conservation strategy. The impact analysis is organized into short-term and long-term effects where appropriate.

The methodology for evaluating impacts on hydrologic and water resources within and outside Local Agencies' jurisdictions also incorporates standard BMPs required by Caltrans during construction of transportation projects and summarized in Appendix D. The analysis assumes that Caltrans would implement these BMPs, when appropriate, during transportation projects within the Plan Area.

Potential impacts from implementing the BRCP on water supply facilities in the Plan Area are addressed in Chapter 12, *Public Services and Public Utilities*, and potential impacts on aquatic habitat for covered species are discussed in Chapter 6, *Biological Resources*, and are not discussed in this chapter.

9.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they result in any of the conditions listed below. Closely related CEQA thresholds have been combined in the list below. However, all CEQA significance thresholds have been considered in the analysis.

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff, in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Place housing within a 100-year flood hazard area or place structures that would impede or redirect flood flows 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
- 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.
- Contribute to inundation by seiche, tsunami, or mudflow.

The largest lake in the Plan Area is the Thermalito Forebay. Although high winds can produce large waves and a downwind increase in the water elevation, the levees are designed to provide sufficient freeboard to prevent any damage from seiche (oscillating) waves. There is no risk of damages from a tsunami (ocean wave) following a seismic event in the county, and there are no steep mountain slopes in the Plan Area that would be subject to damaging mudflows following high intensity rainfall or a seismic event. Because these hydrological events are not expected in the Plan Area, the potential for the proposed action to contribute to inundation by seiche, tsunami, or mudflow will not be discussed in the analysis for any of the alternatives.

9.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. Under the Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, benefits to or impacts on hydrology and water quality would not occur.

Impact WQ-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality (NEPA: less than significant; CEQA: less than significant)

The County and the Cities of Chico, Oroville, and Gridley determined that implementation of their general plans and activities that would occur under those general plans may have short-term and/or long-term effects on water quality that would violate water quality standards (i.e., water quality objectives, beneficial uses, TMDLs), WDRs, or otherwise degrade water quality. The City of Biggs determined that implementation of its general plan would result in less-than-significant impacts. Short-term and long-term effects of the implementation of the Local Agencies' general plans are described below.

Short-Term Effects

The Local Agencies' general plans state that construction and grading activities for residential and commercial development projects could degrade water quality in the short term by increasing the potential for soil erosion and associated contaminants from stormwater discharges, thereby resulting in higher sediment loads, turbidity, and other contaminants in receiving waters. Contaminated runoff from project sites during and potentially immediately following construction could ultimately be transported offsite via drainage channels. Many construction-related wastes (i.e., solvents, lawn chemicals, paint, petroleum products, metals, and other materials) have the potential to degrade existing water quality in the short term. Project construction activities that are implemented without mitigation could violate water quality standards or cause direct harm to aquatic organisms. For example, pollutants from construction could enter 303(d)-Listed Impaired Water Bodies of Butte Creek, the Lower Feather River, and the Sacramento River (Table 9-4) since these rivers are designated as impaired by unknown sources for pH and unknown toxicity. However, general plan policies and provisions (i.e., building codes) and continued implementation of city and county standards (i.e., grading and erosion control ordinances) would ensure that water quality impacts are addressed (City of Chico 2011a). Where appropriate, new development projects would incorporate LID measures to minimize impervious area, minimize runoff and pollution, and incorporate BMPs (Butte County 2010).

Long-Term Effects

Water quality can be affected in the long term by non-point source pollution from increased runoff volumes primarily as a result of the increase of impervious surfaces (e.g., pavements and buildings) under operating conditions of permanent development. For example, development of new roads, bridges, and parking lots would result in an increase in the potential for oil, grease, and other contaminants from vehicles to accumulate on these impervious surfaces and enter water bodies through runoff (City of Gridley 2009; City of Oroville 2009a; Butte County 2010; City of Chico 2011a; City of Biggs 2013). Long-term water quality impacts that could violate water quality standards could occur from increased impervious surfaces within the Plan Area. These impacts could result in the loss of wetland and riparian habitat, introduction of urban pollutants, introduction of dry weather discharges (e.g., from pavement watering, water leaks), and reduced groundwater recharge. The loss of land and riparian habitat from the increase in impervious surfaces, the resulting downstream sedimentation can reduce in-channel habitat, cause channel widening, and cause flooding at flow constriction points (e.g., culverts and road crossings). Alterations to the storm runoff peak and increased storm flow volume result from reduced natural groundwater recharge and uptake from native soils and vegetation. Larger and faster runoff peaks restrict natural groundwater recharge, deposition of sediment and pollutants from the water column, and floodplain connectivity. Increases in developed areas can result in loss of vegetative cover, which reduces the potential for bio-filtration of pollutants and increases pollutant transport. Pollutants, including sediment, nutrients, and toxic chemicals, are naturally removed from surface waters to a degree through soil infiltration and vegetative uptake. Disconnection of an aquatic resource to its natural floodplain, loss of wetlands, and reduction in riparian areas would reduce this natural filtration function.

Other non-point pollution sources, which could result in long-term water quality impacts would include agricultural activities (e.g., livestock operations, pesticide application), industrial activities (e.g., auto body and repair shops), and urban activities (landscape and infrastructure maintenance) (City of Gridley 2009; City of Oroville 2009a; Butte County 2010; City of Chico 2011a; City of Biggs 2013). For example, pollutants from non-point sources could enter 303(d)-Listed Impaired Water Bodies of Butte Creek, the Lower Feather River, and the Sacramento River (Table 9-4) since these rivers are designated as impaired by agricultural sources for chlorpyrifos, Group A pesticides, DDT and dieldrin.

However general plan policies and stormwater programs address potential impacts on water quality. Specifically, the Local Agencies cooperate with state and local agencies in efforts to identify and eliminate or minimize all sources of existing and potential point and non-point sources of pollution to ground and surface waters, including leaking fuel tanks, discharges from storm drains, auto dismantling, dump sites, sanitary waste systems, parking lots, and roadways.

Individual projects carried out by Local Agencies, Caltrans, and water and irrigation districts may be required to implement BMPs to avoid violating water quality requirements or waste discharge requirements. For example, Caltrans requires specific BMPs to be implemented during construction and operation of projects to reduce project-site discharges that might affect the water quality of receiving waters. These BMPs are summarized in Appendix D and would be used on any Caltrans project. In addition, individual projects carried out by Local Agencies and Caltrans are required to comply with NPDES regulations (as described in Section 9.1.1, *Regulatory Setting*).

NEPA Determination: Under Alternative 1, new development considered in all Local Agencies' general plan implementation could increase non-point source pollution from increased impervious

surfaces and increased sediment loads in receiving waters. Further, Alternative 1 would result in increased potential for urban contaminants to be directly and indirectly introduced to surface water and groundwater through construction, agricultural, and urban development activities. However, implementation of applicable general plan policies, Butte County's Stormwater Management Program and Stormwater Management and Discharge Control Ordinance, and other applicable federal, state, and local regulations would ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, new permanent development part of general plan implementation could increase non-point source pollution as a result of increasing impervious surfaces, increasing sediment loads in receiving waters, increasing the potential urban contaminants to be directly and indirectly introduced to surface water and groundwater through construction, agricultural, industrial, and urban activities. Implementation of applicable general plan policies, Butte County's Stormwater Management Program and Stormwater Management and Discharge Control Ordinance, and other applicable federal, state, and local regulations would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

The City of Biggs determined that implementation of its general plan would result in less-than-significant impacts. However, the County and the Cities of Chico, Oroville, and Gridley determined that implementation of their general plans and activities that would occur under the general plans would result in increased groundwater pumping and reduced groundwater recharge during and following construction. This increased pumping and reduced recharge could potentially result in reduced groundwater supplies or interfere with groundwater pumping from existing wells for existing or permitted land uses. Some urban development and agricultural uses would involve groundwater use. New construction could include impervious surfaces, which would decrease the amount of land area available for rainfall to infiltrate into the ground and recharge the underlying water table. In addition, increased contaminants from domestic septic systems or from unintentional discharge of contaminants would potentially degrade groundwater quality and could limit existing uses of groundwater for domestic and municipal uses. Further, minor reductions in irrigation water could reduce the volume of groundwater recharge.

The Local Agencies' general plans contain actions and policies designed to maintain groundwater supplies and sustain groundwater resources. Major development projects must provide an evaluation of potential cumulative impacts on surrounding groundwater users and the environment. The Butte County Groundwater Management Plan and Groundwater Management Ordinance requires that groundwater transfers and substitution programs be regulated to protect the sustainability of the county's economy, communities, and ecosystem. New development must adopt BMPs for water use efficiency and demonstrate specific water conservation measures. The general plans also contain policies and actions designed to promote groundwater recharge, minimize impervious land cover, and prevent groundwater contamination from septic systems, leaking storage tanks, or chemical waste disposal practices.

NEPA Determination: Under Alternative 1, increased groundwater pumping and reduced groundwater recharge as part of general plan implementation could result in reduced groundwater supplies or interfere with groundwater pumping from existing wells for existing or permitted land uses. This effect could be adverse. However, implementation of applicable general plan policies,

goals, actions, and implementation strategies, the Butte County Groundwater Management Plan and Groundwater Conservation Ordinance, and other applicable local, state, and federal regulations would ensure that there would be no adverse effect. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, increased groundwater pumping and reduced groundwater recharge as part of general plan implementation could result in reduced groundwater supplies or interfere with groundwater pumping from existing wells for existing or permitted land uses. This effect could be significant. However, implementation of applicable general plan policies, goals, actions, and implementation strategies, the Butte County Groundwater Management Plan and Groundwater Conservation Ordinance, and other applicable local, state, and federal regulations would ensure that the impact would be less than significant. No mitigation is required.

Impact WQ-3: Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

The City of Biggs determined that implementation of its general plan would result in less-than-significant impacts. However, the County and the Cities of Chico, Oroville, and Gridley determined that implementation of their general plans would result in alterations to drainage patterns and cause an increase in the volume and rate of surface runoff during pre- and post-construction, potentially resulting in substantial erosion, siltation, or flooding. In addition, increased stormwater runoff resulting from the increased amount of impervious surfaces could create erosive velocities and higher bank shear stress. This could cause bank and bed erosion and/or sedimentation in drainages and streams in the Plan Area. Sedimentation could increase the rate of deposition in natural receiving waters and reduce conveyance capacities, which could result in an increased risk of flooding in the Plan Area. Minor increases in tributary flows could also exacerbate creek bank erosion and/or cause destabilizing channel incision by altering the channel-forming flow (City of Oroville 2009a; City of Gridley 2009; Butte County 2010; City of Chico 2011a; City of Biggs 2013).

The Local Agencies have adopted general plan policies and stormwater programs designed to address these potential impacts. These policies require developers in the Plan Area to prepare an assessment of the existing runoff conditions and the potential effects of runoff from the development project, and specify measures to be implemented to ensure postconstruction runoff conditions will not exceed preconstruction runoff conditions (Butte County 2010). Additionally, Caltrans requires specific BMPs to be implemented during construction and operation of projects to reduce runoff, erosion, and siltation. These BMPs are summarized in Appendix D and would be used on any Caltrans project that would take place under Alternative 1.

NEPA Determination: Under Alternative 1, general plan implementation would potentially alter the existing drainage and cause an increase in the volume and rate of surface runoff. This could result in substantial erosion, siltation, or flooding due to development projects part of implementation of the Local Agencies' general plans. This would have an adverse effect on drainage patterns within the Plan Area. Implementation of general plan policies, goals, actions, and/or implementation strategies designed to minimize the impact of erosion, siltation, and flooding, in conjunction with the Butte County Stormwater Management Program, Butte County Stormwater Management and Discharge Control Ordinance, and other applicable local, state, and federal regulations, would ensure that these effects would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, general plan implementation would potentially alter the existing drainage and cause an increase in the volume and rate of surface runoff in the Plan Area. This could result in substantial erosion, siltation, or flooding due to development projects part of implementation of the Local Agencies' general plans. This could be a significant impact.

Implementation of general plan policies, goals, actions, and/or implementation strategies designed to minimize the impact of erosion, siltation, and flooding, in conjunction with the Butte County Stormwater Management Program, Butte County Stormwater Management and Discharge Control Ordinance, and other applicable local, state, and federal regulations, would ensure that potential effects would be less than significant. No mitigation is required.

Impact WQ-4: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

The City of Biggs determined that implementation of its general plan would result in less than significant impacts (City of Biggs 2013). However, the County and the Cities of Chico, Oroville, and Gridley determined that implementation of their general plans and activities that would occur under their general plans would result in more impervious surfaces associated with residential, commercial, industrial development, and would thereby increase stormwater runoff to levels that could exceed the capacity of existing or planned stormwater drainage systems (City of Oroville 2009a; City of Gridley 2009; Butte County 2010; City of Chico 2011a).

Further, as discussed for Impact WQ-1, the County and the Cities of Chico, Oroville, and Gridley determined that implementation of their general plans could degrade water quality by increasing non-point source pollution from increased runoff volumes as a result of increasing impervious surfaces (e.g., pavements and buildings); increasing sediment loads in receiving waters by increasing erosion through construction activities; increasing the potential for pollutants (e.g., oil and grease) to accumulate on road surfaces due to increases in traffic; and contributing to the pollutant load of stormwater runoff and water bodies through agricultural activities (e.g., livestock operations) and urban activities (e.g., landscape and infrastructure maintenance). However, the City of Biggs determined that implementation of its general plan would result in less than significant impacts (City of Biggs 2013).

The Local Agencies have adopted general plan policies, goals, actions and/or implementation strategies designed to minimize the impact of erosion, siltation, and flooding. The Butte County Stormwater Management Program, Butte County Stormwater Management and Discharge Control Ordinance, and other applicable local, state, and federal regulations also minimize this impact. The Local Agencies also require developers to prepare an assessment of the existing runoff conditions and the potential effects of runoff from the development project and specify the measures to be implemented to ensure postconstruction runoff conditions will not exceed preconstruction runoff conditions (Butte County 2010).

NEPA Determination: Under Alternative 1, increases in impervious surfaces associated with development projects and related construction activities part of general plan implementation could introduce sediment and other pollutants to stormwater runoff and potentially contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or add substantial sources of polluted runoff. This could be an adverse effect. Implementation of Local Agency general plan policies, goals, actions and/or implementation strategies, stormwater programs

and ordinances, and other applicable local, state, and federal regulations would ensure that these effects would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, increases in impervious surfaces associated with development projects and related construction activities part of general plan implementation could introduce sediment and other pollutants to stormwater runoff and potentially contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or add substantial sources of polluted runoff. This could be a significant impact. Implementation of Local Agency general plan policies, goals, actions and/or implementation strategies, stormwater programs and ordinances, and other applicable local, state, and federal regulations would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-5: Place housing within a 100-year flood hazard area or place structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

The county includes areas currently designated as 100-year flood zones (Figure 9-4), and the Local Agencies' general plans allow occupied development within these flood hazard areas. Implementation of Alternative 1 would potentially place housing within a 100-year flood hazard area or place structures that would impede or redirect flood flows 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. In addition, development within 100-year flood zones could result in a significant impact by impeding or redirecting flood flows. However, several Local Agency policies and actions are designed to prevent flooding of occupied developments (with elevated structures) and restrict new development within the 100-year flood zone, as identified on the most current available maps from FEMA. In addition, flood control projects, such as the construction of new channels, levees/dikes, flood walls, and retention/detention basins would help to alleviate potential flooding impacts. Recent state legislation provides additional precautions against placing habitable structures within areas prone to floods. The County will update General Plan 2030 within 24 months of adoption of the CVFPP to reflect the CVFPP policies and to identify state and local flood management facilities and flood hazard zones. Therefore, although implementation of the Local Agencies' general plans could allow limited new development within the 100-year flood hazard zone, Local Agency policies and actions, the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations would ensure that 100-year flood hazard zone impacts would be less than significant.

NEPA Determination: Under Alternative 1, implementation of the general plans could allow limited new development within the 100-year flood hazard zone. However, Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations, would ensure that effects associated with 100-year flood hazard zone impacts would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, implementation of the general plans could allow limited new development within the 100-year flood hazard zone. However, Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations, would

ensure that impacts associated with 100-year flood hazard zones would be less than significant. No mitigation is required.

Impact WQ-6: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 1, people and structures would be exposed to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. The County and the Cities of Chico, Gridley, and Oroville determined that implementation of their general plans would allow for occupied development within designated 100-year flood zones. The City of Biggs determined that implementation of its general plan would result in less-than-significant impacts. Design of all new development in levee and dam inundation areas is required to consider risks resulting from failure of these levees and dams because Local Agency general plan policies, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations would reduce potential flooding impacts on people and property that are a result of a levee or dam failure. Some of the Local Agencies' general plan EIRs determined this impact to be less than significant because implementation of general plan update policies and implementation of city and county standards would ensure the flooding is adequately addressed (City of Gridley 2009; City of Chico 2011a; City of Biggs 2013).

However, some general plan EIRs determined that activities that would occur under the general plans could expose people or structures to the risk of loss, injury, or death due to flooding because the plans and policies do not completely eliminate risks to people and property since the County does not control or maintain all levees and dam facilities (City of Oroville 2009a; Butte County 2010). As stated in the County general plan EIR, it is not within Butte County's authority to require or complete maintenance and improvements to levees in the County owned and maintained by private individuals and other public agencies (Butte County 2010). Dams within and around Butte County that pose risks to people and property resulting from dam inundation are owned and/or operated by other agencies (i.e., Department of Water Resources, U.S. Bureau of Reclamation, irrigation districts). In addition, recently-adopted policies by FEMA would de-certify a number of levees in the County, which indicates that larger areas of the County would be subject to levee inundation than realized under previous policies. Seismic activity in the region could also cause dam failure. The County general plan EIR concluded, therefore, that it is not feasible for its general plan to completely address improvements to all dams to the extent necessary to eliminate risks from dam failure, and this impact would be significant and unavoidable.

NEPA Determination: Under Alternative 1, implementation of the Local Agencies' general plans would expose people and structures to a significant risk of loss, injury or death involving flooding, including as a result of levee or dam failure. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. In addition, federal policies and seismic activity is out of the control of the Local Agencies' and could add to these risks. Therefore, this would effect would be significant and unavoidable.

CEQA Determination: Under Alternative 1, implementation of the Local Agencies' general plans would expose people and structures to a significant risk of loss, injury or death involving flooding, including as a result of levee or dam failure. Although implementation of the policies and actions in

the Local Agencies' general plans would reduce risks associated with levee failure, it would not eliminate risks to people and property. In addition, federal policies and seismic activity is out of the control of the Local Agencies' and could add to these risks. Therefore, this impact would be significant and unavoidable.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA and relevant NEPA review for construction and operations-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics including small projects or infill projects. Covered activities within the Local Agencies' jurisdictions include development or maintenance of residential, commercial, public, or industrial facilities; recreational facilities; transportation facilities; pipeline facilities; utility service and waste management facilities; and flood control and stormwater management facilities. The following analysis of Alternative 2 references the analysis of Alternative 1 because impacts for these covered activities would be the same.

Potential impacts on water resources could occur primarily during construction or maintenance of covered activities within water and irrigation districts. These activities have not been analyzed in previous CEQA documents.

The proposed BRCP conservation strategy and conservation measures have not been analyzed in previous CEQA documents and include habitat management and enhancement, habitat restoration, general maintenance, AMMs, and species population enhancement. Not all conservation measures would result in physical changes to the environment, thus the following conservation measures have the potential, either during construction or maintenance, to impact water resources: CM4–CM12 CM14 and Activities to Improve Urban Stormwater Water Quality. The remaining four conservation measures (i.e., CM1, CM2, CM3, and CM13) are not anticipated to result in physical changes to the environment and thus would have very low potential or no potential to affect water resources; therefore, they are not discussed below.

Impact WQ-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality (NEPA: less than significant; CEQA: less than significant)

Implementation of covered activities within and outside of the UPAs, within the water and irrigation districts, and for CM4–CM12 CM14 and Activities to Improve Urban Stormwater Water Quality could result in significant impacts on surface and groundwater quality in the Plan Area in the in the short- and long-term. Construction and maintenance activities which result in ground and/or channel disturbances could increase water turbidity. The use of heavy equipment during construction, as well as the use of chemicals (e.g., pesticides) during construction or maintenance, could result in inadvertent pollutant spills or releases to drainage systems and migrate to surface waters and

groundwater. Increases in impervious surfaces associated with permanent development could result in additional pollutant runoff.

Short-Term Effects

Covered Activities within UPAs

Under Alternative 2, short-term impacts on water quality primarily from covered construction activities within the UPAs would be the same as under Alternative 1, Impact WQ-1. These include physical impacts on vernal pools and other wetlands in the Plan Area resulting from fill associated with the construction of residential, commercial, and industrial developments. As described in Chapter 2, *Proposed Action and Alternatives*, the Permit Applicants are seeking a Programmatic General Permit (PGP) under Section 404 from USACE to accompany the BRCP. If issued, this PGP would streamline the permitting process for certain activities covered by the BRCP that would result in the discharge of dredged or fill material into waters of the United States. As part of the evaluation to issue a PGP under Section 404, USACE must follow EPA's Section 404(b)(1) regulations. If a PGP is not issued, covered activities that fill or otherwise alter a USACE jurisdictional wetland would still be required to obtain a Section 404 permit from USACE.

Individual projects carried out by Local Agencies and Caltrans may be required to implement BMPs to avoid violating water quality requirements or waste discharge requirements. For example, Caltrans requires specific BMPs to be implemented during construction and operation of projects to reduce project-site discharges that might affect the water quality of receiving waters. These BMPs are summarized in Appendix D and would be used on any Caltrans project that would take place under Alternative 2. In addition, individual projects carried out by Local Agencies and Caltrans are required to comply with NPDES regulations (as described in Section 9.1.1, *Regulatory Setting*).

Furthermore, as discussed below under *Conservation Strategy*, AMMs from the BRCP would eliminate or reduce physical and water quality impacts on vernal pools and other wetlands. AMMs would be implemented during the design and construction phases of covered activities. Those AMMs that would be protective of water quality are AMM1, 4–8, 11, 12, 14–16, 18–21, 26, and 27. These AMMs are presented in detail in Chapter 5 of the BRCP.

Covered Activities outside UPAs

Covered activities outside UPAs, including wastewater management facilities, transportation facilities, and agriculture-related service facilities, could increase the potential to violate water quality standards or waste discharge requirements over the short-term. Implementation of these covered activities would include the construction of up to 5 miles of trunk sewer line construction associated with the WWTP in Chico and up to 3 miles of new mainline to the Gridley WWTP; construction of new roads and rural bridges, replacement of rural bridges, and rural road improvements and reconstruction; and construction of agricultural processing facilities and alternative energy facilities (e.g., wind turbine towers). For a detailed description of the projects that would be implemented as covered activities outside the UPAs, as well as their locations, please see the Chapter 2 of the BRCP.

Earth-disturbing activities, such as grading, trenching, excavation (e.g., as would take place for covered activities such as construction of sewer lines, agricultural processing facilities, and alternative energy facilities), as well as pavement removal and demolition activities, could potentially cause erosion and the subsequent release of sediment to adjacent water bodies or

drainage areas (e.g., agricultural drainages) in the Plan Area. Further, the use of construction equipment could result in pollutant spills or leaks. Trenching and excavation associated with certain covered activities (e.g., pipeline installation during development of wastewater management facilities) could reach the depth of the water table, exposing an immediate and direct path for contaminants to enter the groundwater.

In-channel work associated with covered activities could increase surface water turbidity and other pollutant loads (e.g., fuel and oil from leaking construction equipment, concrete, and asphalt) in the immediate area as well as downstream. Covered transportation facility projects that require activity within streams, canals, and other water bodies include roadway and bridge construction and replacement projects. These projects could involve building new or replacing existing bridges and associated supports, increasing bridge widths, and improving guardrails and drainage. Additionally, cofferdams and in-stream excavation for bridge foundation construction may be required.

Sewer line construction could result in the inadvertent discharge of sewage if the process entails connecting new lines to existing, operating lines. If a considerable release of raw sewage infiltrates to the water table, it could adversely affect groundwater quality through the potential introduction of pathogens.³ Surface waters could be similarly affected either directly or indirectly if the discharge is released to an area that drains to surface waters in the Plan Area. With the exception of culverts placed in small, intermittent drainages along roads within the right of way (ROW) of new facilities, activities associated with the construction of waste and wastewater management facilities are not expected to include development of in-water structures. For example, new sewer lines that would require stream crossings are expected to be bored under or placed above stream channels, thus minimizing the risk for direct effects on surface water quality for those activities. In addition, the County's Stormwater Management and Discharge Ordinance, Onsite Wastewater Ordinance, and other County-required BMPs during grading and construction activities would be enforced during these types of construction activities to reduce sediment from activities from entering surface waters.

Covered Activities within Water and Irrigation Districts

Covered activities within water and irrigation districts (West Canal Water District, Biggs-West Gridley Water District, Butte Water District, and Richvale Irrigation District [Figure 9-2]) include rerouting up to 12 miles of existing canals, averaging 55 feet wide, that are operated by the water and irrigation districts over the term of the BRCP. Each of the four districts uses open canals comprised of compact earth to convey water throughout the rice fields within their districts. Some portions of the existing decommissioned canals may be reclaimed to a natural state by removing any concrete and other non-natural materials and restored to better functioning habitat. Other decommissioned canals may be converted to agricultural uses, planted with trees, continued to be used as canals, or used to store riprap or other materials. Construction activities required for rerouting existing canals, reclaiming existing decommissioned canals, and planting trees would result in ground disturbance, consequently increasing the risk of erosion and sedimentation in site drainage areas, the stormwater drainage system, and nearby surface waters, and increase the risk of pollutant spills from construction equipment (e.g., fuel, oil, coolants).

³ The term *pathogens* refers to viruses, bacteria, and protozoa that pose human health risks.

Conservation Strategy

The implementation of certain conservation measures (i.e., CM4–CM12 and CM14) would require ground-disturbing activities during the construction phase, including excavation, grading, site clearing, seed and vegetation planting, and installation or modification of water irrigation and drainage infrastructure (Chapter 2, *Proposed Action and Alternatives*, Table 2-4). These activities would temporarily disturb soils, potentially resulting in erosion from wind and rain and consequently transport sediment to nearby surface waters (e.g., rivers, streams, wetlands), which could significantly impact water quality and aquatic habitat. Sediment can affect surface water quality through interference with photosynthesis, oxygen exchange, and the respiration, growth, and reproduction of aquatic species. Other pollutants, such as nutrients (e.g., fertilizer in soils), trace metals, and pesticides that can adsorb to soil and sediment could be transported with soil/sediment to downstream locations and adversely affect water quality. For example, pollutants from construction could enter 303(d)-Listed Impaired Water Bodies of Butte Creek, the Lower Feather River, and the Sacramento River (Table 9-4) since these rivers are designated as impaired by unknown sources for pH and unknown toxicity. The potential effects of construction activities associated with the conservation measures on aquatic habitat are discussed in Chapter 6, *Biological Resources*.

In addition to erosion-related water quality effects, construction activities involving heavy construction equipment (e.g., backhoes, excavators, dozers) carry the risk of introducing contaminants (e.g., fuels, lubricants, hydraulic fluids, coolants) into the environment. Activities such as grading, excavation, or other work near streams would require the use of heavy construction equipment and could result in accidental fuel and/or oil spills or leaks, potentially contaminating groundwater (through soil infiltration) or surface water. In-channel activities, such as the ones that would take place under CM9–CM11, listed below, would directly impact surface water quality in the short term at the indicated locations:

- Placement of spawning gravel—Up to 30,000 cubic yards of spawning gravels would be placed within Big Chico Creek, Little Creek, Butte Creek, Little Dry Creek, Rock Creek, and/or Mud Creek.
- Removal of fish passage barriers—Fish passage barriers such as debris build-up, large boulders, and existing non-functional fish ladders could be removed at Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo Channel, Little Chico Creek, Butte Creek, and Little Dry Creek.
- Installation of fish screens—Up to 25 existing diversions along Big Chico and Butte Creeks in the Cascade Foothills, Northern Orchards, and Basin CAZs would be modified by installing fish screens, moving, consolidating, or otherwise modifying to reduce entrainment loss of juvenile salmonids.

The restoration of wetlands, as would take place under CM4, and the enhancement of wetlands, as would take place under CM5, may result in localized impacts on water quality at those restored/enhanced locations due to an increase in pathogens via metabolic waste (i.e., droppings) from migratory birds, for example. However, this would not be expected to substantially compromise water quality because properly functioning wetlands act as natural filters of pollutants such as nutrients, pathogens, and metals through sedimentation and plant uptake, among other mechanisms.

Long-Term Effects

Covered Activities within UPAs

Under Alternative 2, longer term impacts on water quality from covered activities within the UPAs (i.e., increase impervious surface areas associated with development under implementation of the general plans and recurring maintenance) would be the same as under Alternative 1, Impact WQ-1, and would be less than significant.

Covered Activities outside UPAs

Recurring maintenance activities associated with wastewater management facilities would reoccur over the 50-year permit term that could impact water quality include excavating, trenching, removing or storing overburden materials, and replacing force mains, effluent lines, trunk/sewer lines, discharge lines, reclamation lines, and mainlines and all related appurtenant infrastructure. To the extent that any of the activities would result in soil disturbances, inadvertent spills/leaks of chemicals or other water pollutants, or the accidental discharge of sewage, surface water and groundwater quality could be significantly impacted, as previously discussed above under short-term effects. Without natural filtration mechanisms, these urban pollutants have the potential to concentrate and be transported throughout the watershed by stormwater runoff. In addition, the maintenance activities associated with wastewater treatment lines have the potential to result in a discharge of sewage into receiving waters. As discussed above, compliance with NPDES, BMPs, and the BRCP AMMs would help to reduce the potential effect on receiving water quality as a result of these urban pollutants.

Some maintenance activities would include in-channel work. For example, maintenance of bridges and associated drainage structures would include in-stream operation of equipment to repair and prevent streambed scour; debris and woody debris removal from bridge piers and pilings; vegetation management (e.g., pesticide application, vegetation removal) beneath and adjacent to bridge structures; and erosion/sediment control beneath and adjacent to bridge structures. Maintenance activities associated with wastewater management facilities, flood control and stormwater management, and vegetation management are not expected to include in-channel work.

Covered Activities within Water and Irrigation Districts

Covered recurring maintenance activities within water and irrigation districts include the replacement of water conveyance structures (weirs, siphons, pipes and water elevation control check structures); replacement of pipes extending from canals and ditches to irrigated fields; replacement of laterals; mowing and trimming of vegetation to maintain service road widths throughout the districts; and removal of vegetation and debris from canals, ditches, and laterals. Most maintenance activities are expected to be completed in the winter after the water conveyance structures have been dewatered. Smaller projects would generally be completed every year and larger projects less frequently (i.e., every 4 to 5 years). As previously discussed, any ground disturbing activities, use of heavy construction equipment or chemicals (e.g., pesticides, fertilizer), or any in-channel activities could result in significant water quality impacts. For example, pollutants from non-point sources such as use of pesticides or fertilizers could enter 303(d)-Listed Impaired Water Bodies of Butte Creek, the Lower Feather River, and the Sacramento River (Table 9-4) since these rivers are designated as impaired for, Group A pesticides, DDT and dieldrin. Recurring maintenance activities within the water and irrigation districts, such as replacement of weirs, pipes, and vegetation maintenance, would increase the risk for significant, although relatively short-term,

periodic water quality effects through the potential introduction of sediment and turbidity to nearby surface waters and of other pollutants to surface waters and groundwater.

Maintenance activities associated with implementation of certain BRCP conservation measures, such as the application of herbicides, as would occur with non-native plant control as part of habitat management activities (e.g., CM5, *Enhance Protected Natural Communities for Covered Species*) if performed near streams or drainage areas, could potentially introduce toxic chemicals to adjacent water bodies via air drift and precipitation runoff, or affect water quality through increases in turbidity (e.g., through erosion). Although these activities would take place periodically, and thus impacts would be short-term, impacts on water quality could be potentially significant.

Activities to improve urban stormwater water quality (see BRCP Section 5.4.4), which would support the Cities of Chico, Oroville, Gridley and Biggs in obtaining funding to implement programs to improve urban stormwater quality and support compliance with NPDES stormwater systems for MS4s, would be expected to benefit water quality in the Plan Area over the long term. Actions that could be funded could include LID measures, such as construction of stormwater retention ponds, stormwater curb extensions, and bioretention systems.

Implementation of certain BRCP AMMs intended to protect natural communities and covered species habitat would help protect water quality. These AMMs would be implemented during the design and construction phases of covered permanent development projects inside and outside of the UPAs, and others would be implemented specifically for all roadway construction and maintenance actions. Those AMMs that would be protective of water quality are AMM1, 4–8, 11, 12, 14–16, 18–21, 26, and 27. These AMMs are presented in detail in Chapter 5 of the BRCP.

NEPA Determination: Covered activities within and outside the UPAs, as well as within the water and irrigation districts, and CM4–CM12 CM14, and Activities to Improve Urban Stormwater Water Quality could result in adverse effects on surface and groundwater quality in the Plan Area in the short- and long term. Construction and maintenance activities that result in ground and/or channel disturbances could increase water turbidity. The use of heavy equipment during construction, as well as the use of chemicals during maintenance, could result in inadvertent pollutant spills or releases to drainage, which could migrate to surface and groundwater. The expansion of wastewater effluent and reclamation lines and the maintenance of wastewater lines could result in the discharge of sewage to surface or groundwater. Increases in impervious surfaces associated with development over the long term could result in increases in pollution runoff. Adherence to applicable federal, state, and local regulations, including Butte County's Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, and implementation of applicable BRCP AMMs would ensure that the effect would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Covered activities within and outside the UPAs, as well as within the water and irrigation districts, and CM4–CM12 CM14, and Activities to Improve Urban Stormwater Water Quality could result in significant impacts on surface and groundwater quality in the Plan Area in the short- and long term. Construction and maintenance activities which result in ground and/or channel disturbances could increase water turbidity. The use of heavy equipment during construction, as well as the use of chemicals during maintenance, could result in inadvertent pollutant spills or releases to drainage, which could migrate to surface and groundwater. The expansion of wastewater facilities could result in the discharge of sewage to surface or groundwater. Increases in impervious surfaces with development over the long-term could result in increases in

pollution runoff. Adherence to applicable federal, state, and local regulations, including Butte County's Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, and implementation of applicable BRCP AMMs, would ensure that impacts on surface and groundwater quality are less than significant. No mitigation is required.

Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

Short-Term Effects

Covered Activities within UPAs

Under Alternative 2, impacts on groundwater supplies from covered construction activities within the UPAs would be the same as under Alternative 1, Impact WQ-2. If shallow groundwater dewatering is required for excavation for sewer lines and other underground construction activities, these impacts would be temporary and are not expected to have a large or permanent impact on groundwater supplies.

Covered Activities outside UPAs

Under Alternative 2, construction of covered activities within the Plan Area but outside the UPAs would not likely have direct effects on groundwater resources; construction effects would most likely affect surface water runoff and water quality and are described for Impact WQ-1 and Impact WQ-3. Any necessary shallow groundwater dewatering activities would be temporary and are not expected to have a large or permanent impact on groundwater supplies.

Covered Activities within Water and Irrigation Districts

The construction of covered facilities within water and irrigation districts would not likely have any effects on groundwater resources. There are relatively few irrigation wells within the water and irrigation districts, and any construction of new or replacement wells would follow well spacing guidelines and BMPs to minimize any effects on nearby wells. If shallow groundwater dewatering is required for excavation for canal re-routing and other underground construction activities, these impacts would be temporary and are not expected to have a large or permanent impact on groundwater supplies. Some activities may have benefits on groundwater recharge due to increases in pervious areas associated with the reclamation of existing decommissioned canals to their natural states and the conversion of canals to agricultural uses.

Conservation Strategy

None of the conservation measures are expected to have any direct or indirect impacts on groundwater resources. Protection of the grassland and vernal pool areas may allow the existing groundwater recharge of the exposed aquifer layers (e.g., Tuscan and Laguna formations), but because the conservation measures generally preserve or enhance the natural habitat areas, the natural infiltration of rainfall and deep percolation to the shallow groundwater would also be preserved. There would be no impacts from any of the protection measures on groundwater resources. None of the construction activities associated with the habitat restoration measures would have any direct or indirect effects on groundwater resources.

Long-Term Effects

Covered Activities within UPAs

Under Alternative 2, impacts on groundwater resources from covered activities within the UPAs would be the same as under Alternative 1, Impact WQ-2. Some urban development and agricultural uses allowed by the Local Agencies' general plans would use groundwater, and this increased demand on groundwater could result in a net deficit in aquifer volume or significantly lower groundwater levels. In addition, development could include additional impervious surfaces, which would decrease the amount of land area available for rainfall to infiltrate into the ground and recharge the underlying water table.

Covered Activities outside UPAs

Maintenance activities outside the UPAs would not likely have any direct or indirect effects on groundwater resources; these activities would most likely affect surface water runoff and water quality and are described for Impact WQ-1 and Impact WQ-3.

Covered Activities within Water and Irrigation Districts

Maintenance activities within water and irrigation districts could potentially have an indirect effect on groundwater recharge because some of the activities may involve rerouting of distribution canals and lining of some canals to conserve water for delivery. This could reduce the groundwater recharge below the lined canals. As indicated in Table 9-3, there is a relatively small amount of groundwater pumping within the irrigation and water districts; most of the water is delivered to the fields and orchards from the canals. Some of the activities would help maintain surface water and groundwater connectivity. The vast majority of the distribution canals would remain unlined and continue to provide infiltration to the shallow groundwater. Even if some canals are lined for delivery efficiency, the large amount of recharge from the canal network and applied water would continue to provide a large amount of groundwater recharge. Consequently, the overall magnitude of the change in recharge volume would be small.

Conservation Strategy

None of the maintenance and operation activities associated with any conservation measures would have any direct or indirect adverse effects on groundwater resources. However, CM4, which would include restoration of wetlands, could assist groundwater percolation and improve groundwater quality in areas where there are appropriate soils.

NEPA Determination: Covered activities under Alternative 2 would result in increased groundwater pumping, particularly for development projects implemented within the UPAs, and could reduce groundwater recharge by increasing impervious surface areas. In addition, some urban development and agricultural uses allowed by the general plans would use groundwater, and this increased demand on groundwater could result in reduced groundwater levels. Any necessary shallow groundwater dewatering activities would be temporary and are not expected to have a large or permanent impact on groundwater supplies. Therefore, Alternative 2 would have the potential to result in reduced groundwater supplies within the Plan Area, which would be an adverse effect. It is not likely that implementation of covered activities outside UPAs, within water and irrigation districts, or implementation of the conservation measures would have any direct or indirect effects on groundwater resources. General plan policies, goals, actions, and/or implementation strategies of the Local Agencies were designed to minimize the impact of groundwater pumping, reduced

groundwater recharge, and groundwater pollution, and therefore would help reduce the severity of this effect. Adherence to general plan policies, the Butte County Groundwater Management Plan and Groundwater Ordinances, and other applicable local, state, and federal regulations would ensure that this effect would be not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Covered activities under Alternative 2 would result in increased groundwater pumping, particularly for development projects implemented within the UPAs, and could reduce groundwater recharge by increasing impervious surface areas. In addition, some urban development and agricultural uses allowed by the general plans would use groundwater, and this increased demand on groundwater could result in reduced groundwater levels. Any necessary shallow groundwater dewatering activities would be temporary and are not expected to have a large or permanent impact on groundwater supplies. Therefore, Alternative 2 would have the potential to result in reduced groundwater supplies within the Plan Area, and this impact could be potentially significant. It is not likely that implementation of covered activities outside UPAs, within water and irrigation districts, or implementation of the conservation measures would have any direct or indirect impacts on groundwater resources. General plan policies, goals, actions, and/or implementation strategies of the Local Agencies were designed to minimize the impact of groundwater pumping, reduced groundwater recharge, and groundwater pollution, and therefore would help reduce the severity of this impact. Adherence to general plan policies, the Butte County Groundwater Management Plan and Groundwater Ordinances, and other applicable local, state, and federal regulations would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-3: Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, impacts related to drainage, surface runoff, and erosion or siltation within the UPAs would be the same under Alternative 1, Impact WQ-3.

Site grading or excavation needed to construct any of the covered activities outside the UPAs, as well as within the water and irrigation districts, has the potential to block, reroute, or temporarily detain and impound surface water in existing drainages, which would result in increases and decreases in flow rates, velocities, and water surface elevations. Changes in drainage patterns would vary depending on the specific conditions at each individual project location. For example, surface drainage paths blocked by construction activities could result in the temporary ponding of drainage water, causing decreases in drainage flow rates downstream of the new facilities. In addition, in-stream channel work, such a pile driving for bridge construction, may involve the use of coffer dams, which would temporarily alter stream flows.

Paving, compaction of soil, and other activities that would increase land imperviousness would result in decreases in precipitation infiltration into the soil, and consequently increase drainage runoff flows into receiving drainages and increase the risk for localized flooding. As described under Impact WQ-1, increases in impervious surface area can result in an increase flow velocity, as well as the peak and quantity of stormwater runoff. The velocity and erosive force of stormwater runoff can cause scouring of streambanks and channel erosion, which can lead to downstream sedimentation. Downstream sedimentation can reduce in-channel habitat and cause channel widening and flooding

at flow constriction points, such as culverts and road crossings. Alterations to the stormwater runoff peak and increased storm flow volume result from reduced natural infiltration and uptake from native soils and vegetation. Larger and faster runoff peaks restrict natural groundwater recharge and thus increase the risk for localized flooding. Increased storm flow volume causes flooding of developed areas, particularly when flood control structures are inadequate or floodplain areas have been disconnected from stream channels.

The implementation of certain conservation measures (i.e., CM4–CM11) could alter the existing drainage pattern of areas where implementation occurs through the creation and restoration of certain types of habitat in the short term. For example, site clearing of debris and existing vegetation, and site grading, as could take place with riparian habitat restoration, could result in increased erosion, runoff volume, and velocity. BRCP AMMs identified in the conservation strategy would reduce or avoid substantial site runoff, erosion, and/or inadvertent flooding in the short term as discuss further below (e.g., AMM 8: Implement Standard Urban Stormwater Management Plans). Conservation measures are intended to restore, enhance, and preserve natural habitat function for the preservation of covered species in the long-term and are overall expected to reduce or avoid substantial site runoff, erosion and/or inadvertent flooding. For example, establishing properly functioning wetland areas, as would take place with implementation of CM5, would improve water quality and flood control by slowing flow velocity and causing sediment and pollutants to settle and absorb into wetland vegetation and bottom sediments. Activities to improve urban stormwater water quality (see BRCP Section 5.4.4), which would support the Cities of Chico, Oroville, Gridley and Biggs in obtaining funding to implement programs to improve urban stormwater quality, would potentially fund actions that would slow runoff velocities and support onsite drainage through construction of stormwater retention irrigation holding ponds, vegetated buffer strips, bioretention systems, and pervious pavement to substitute for asphalt and concrete. These measures could be implemented at drainage areas near Big Chico Creek, Lindo Channel, Little Chico Creek, Sycamore/Mud Creek, Butte Creek, and the Feather River.

Actions implemented as part of other conservation measures, such as CM9–CM11, would alter the course of a stream or river by enlarging channels (e.g., remove barriers to fish passage) or constricting channels (e.g., adding large woody debris). Although these activities are expected to increase available habitat for covered fish species and thus provide an overall benefit to these species, if not implemented properly, they could adversely affect downstream flow velocities and natural geomorphological processes. If not implemented properly, fish passage barrier would enlarge channels and may result in upstream channel incision (i.e., the overall lowering of a streambed over time). The channel typically deepens due to a change in the proportionality between the amount and size of sediment, water volume and flows, and the stream slope. If not designed properly, the addition of large woody debris across the width of the channel has the potential to retain sediment and alter the channel profile. When the debris obstructs only a portion of the channel, it can redirect flow, which alter patterns of scour and deposition (Curran 2010), and ultimately can affect the natural channel meandering processes.

Adherence to applicable, federal, state, and local regulations regarding erosion surface runoff and drainage control, as well as implementation of BRCP AMMs would reduce the effects to existing drainage patterns in the Plan Area and control the rate or amount of surface runoff. The AMMs would require that covered activities comply with applicable NPDES permits, including preparation and implementation of SWPPPs that include construction-related erosion-control BMPs. Further, implementation of the AMMs intended to protect natural communities and covered species habitat would also help minimize site erosion, increased runoff, and impact on storm drainage areas. The

following AMMs would be implemented during the design and construction phases of covered permanent development projects inside and outside of the UPA, and for all covered roadway construction and maintenance actions. These AMMs are presented in detail Chapter 5 of the BRCP.

- AMM8: Implement Standard Urban Stormwater Management Plans
- AMM12: Confine and Delineate Work Area
- AMM16: Install Erosion Control Barriers
- AMM19: Implement Wet Weather Erosion Control Plan
- AMM21: Implement Additional Avoidance and Minimization Measures and Best Management Practices.
- AMM26: Implement Caltrans Construction BMPs to Maintain Water Quality

In addition the BMPs identified in Appendix D would be implemented for all roadway construction activities, which would also reduce effects to existing drainage patterns and control the rate or amount of surface water runoff.

NEPA Determination: Under Alternative 2, implementing covered activities within the UPAs, outside the UPAs, and within the water and irrigation district, as well as implementing certain BRCP conservations measures could adversely and substantially alter the existing drainage pattern of multiple sites or areas within the Plan Area and potentially substantially increase the rate or amount of surface runoff such that there may be substantial erosion, siltation, or flooding onsite or offsite. However, adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable, federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable BRCP AMMs and Caltrans BMPs cited in Appendix D, would ensure that this impact would not be adverse. Furthermore, the CMs are expected to increase and encourage naturally functioning hydrologic systems that would reduce substantial site runoff, erosion, and/or inadvertent flooding over the long term. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 2, implementation of the BRCP would have potentially significant impacts on the drainage pattern of sites or areas, and/or substantially cause erosion, siltation, or flooding through site clearing and grading, excavation, increasing land imperviousness, and altering channel geomorphology. However, adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable, federal, state and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable BRCP AMMs and Caltrans BMPs cited in Appendix D, would ensure that this impact would be less than significant. Furthermore, the CMs are expected to increase and encourage naturally functioning hydrologic systems that would reduce substantial site runoff, erosion, and/or inadvertent flooding over the long term. Impacts would be less than significant. No mitigation is required.

Impact WQ-4: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, impacts of implementing covered activities within the UPAs as they relate to drainage and surface runoff and water quality would be the same under Alternative 1.

As previously described for Under Alternative 1, Impact WQ-3, paving, compaction of soil and other short-term and long-term activities that would increase land imperviousness outside the UPAs, within the water and irrigation districts, and within areas where certain conservation measures would be implemented (particularly if there would be new infrastructure) would result in decreases in precipitation infiltration into the soil. This would result in increasing drainage runoff flows into receiving drainages. These activities could result in adverse effects if the runoff volume exceeds the capacities of local drainages. Additionally, an increase in permanent urban development could result in an increase in the type and quantity of pollutants in stormwater runoff, such as oil and sloughed brake material from vehicles, pesticides, metals, and nutrients (e.g., nitrogen and phosphorus in fertilizers). As runoff flows over areas altered by development, such as roads, parking lots and other impervious surfaces or disturbed soil areas, it picks up sediment and chemicals that often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams.

Activities to improve urban stormwater water quality (see BRCP Section 5.4.4), which would support the Cities of Chico, Oroville, Gridley, and Biggs in obtaining funding to implement programs to improve urban stormwater quality would also potentially fund actions that would slow runoff velocities and support onsite drainage, as well as pollutant retention through construction of stormwater retention irrigation holding ponds, vegetated buffer strips, bioretention systems, and pervious pavement to substitute for asphalt and concrete, when practicable. These measures could be implemented at drainage areas near Big Chico Creek, Lindo Channel, Little Chico Creek, Sycamore/Mud Creek, Butte Creek, and the Feather River, and would help avoid impacts on drainage systems and water quality. Additionally, Permit Applicants would adhere to the Butte County Stormwater Management Program, Butte County Stormwater Management and Discharge Control Ordinance, as well as to other applicable, federal, state, and local regulations that pertain to controlling pollutant runoff and ensuring that projects are designed and implemented such that they do not exceed existing drainage capacities. Further, BRCP AMMs 8, 12, 16, 19, 21, and 26 would help reduce potential impacts that would slow, contain and/or filter stormwater runoff.

NEPA Determination: Under Alternative 2, implementation of the BRCP, particularly of covered activities that result in increases in impervious surfaces would increase stormwater runoff relative to existing conditions. Increased stormwater runoff, both during and after development, at project sites could exceed existing storm drainage systems and contribute additional pollutants, such as sediment, oil, and pesticides, to the drainage system. This would be a potentially adverse effect. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable, federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable BRCP AMMs, and Caltrans BMPs cited in Appendix D, would ensure that this effect would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 2, implementation of the BRCP, particularly of covered activities that result in increases in impervious surfaces, would increase stormwater runoff relative to existing conditions. Increased stormwater runoff, both during and after development, at project sites could exceed existing storm drainage systems and contribute additional pollutants, such as sediment, oil, and pesticides, to the drainage system. This would be a potentially significant impact. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable, federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable BRCP AMMs, would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-5: Place housing within a 100-year flood hazard area or place structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, covered activities within or outside the UPAs or within the water and irrigation districts would place people and structures within a 100-year flood hazard area. The largest impacts may be experienced within UPAs where development is most dense and more structures and people would be affected. In addition, if not designed properly, construction of new bridges for transportation projects would affect channel capacities in streams and increase flood risks.

However, as part of covered activities that include flood control projects within the UPAs including: construction of new channels, levees/dikes, flood walls, and retention/detention basins would ultimately reduce potential flooding impacts within the Plan Area. Construction of covered activities outside UPAs and within water and irrigation districts, including wastewater management facilities, transportation facilities, and agriculture-related service facilities would not have a large overall effect on flooding risk because the facility footprint would be small compared to the overall surrounding pervious areas that already provide for flood control.

Most of the conservation measures do not involve placing structures within a 100-year floodplain and therefore would not have the potential to impede or redirect flood flows. The addition of large woody debris as part of CM9–CM11 in stream channels may reduce channel capacity during high rain events. However the woody debris is not expected to be placed within high flood risk areas or within an area large enough to increase flood risk. Furthermore, using woody debris rather than armoring the channels provides a hydrologic benefit to the channels because it slows river velocities and provides beneficial habitat to covered fish species.

NEPA Determination: Under Alternative 2, implementation of covered activities within and outside the UPAs, within the water and irrigation districts, and for BRCP conservation measures would result in some limited new development within the 100-year flood hazard zones that could potentially adversely affect flood flows. Implementation of Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other applicable state and federal regulations regarding flooding would ensure that this effect would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 2, implementation of covered activities for permanent development projects within and outside the UPAs, within the water and irrigation districts, and for BRCP conservation measures would result in some limited new development within the 100-year flood hazard zones that could potentially adversely affect flood flows. Implementation of Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other applicable state and federal regulations related to flooding would ensure that impacts would be less than significant. No mitigation is required.

Impact WQ-6: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under Alternative 2, covered activities within or outside the UPAs or within the water and irrigation districts would place people and structures within a dam or levee inundation area and impacts would be the same as under Alternative 1 for WQ-6. Although the general plan policies and actions of the Local Agencies are intended to reduce flood hazard damage and exposure risks associated with dam and levee failure within the county, and thus the Plan Area, they do not entirely eliminate risks to people and property from potential floods. In addition, recently-adopted policies by FEMA would de-certify a number of levees in the county, which indicates that larger areas of the county are subject to levee inundation than realized under previous policies. It is not within Butte County's authority to require or complete maintenance and improvements to levees in the county owned and maintained by private individuals and other public agencies, as discussed under Alternative 1, Impact WQ-6; however, covered activities implemented by Local Agencies within and outside the UPAs would still expose people or structures to significant risk of loss, injury, or death involving flooding.

The BRCP conservation strategy and conservation measures are designed to protect, enhance, and restore natural communities. None of the measures would result in the exposure of people or structures to increased risks associated with levee or dam failure.

NEPA Determination: Under Alternative 2, implementation of the covered activities would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. The conservation measures would not result in an increased exposure to risks of levee or dam failures. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. Therefore, this would be an adverse effect. Impacts would be significant and unavoidable.

CEQA Determination: Under Alternative 2, implementation of the covered activities would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. The conservation measures would not result in an increased exposure to risks of levee or dam failures. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. Therefore, this impact would be significant and unavoidable.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described Alternative 2 but would be limited to the reduced development footprint and reduce the permit term to 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction

of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Since the conservation strategy would be similar, applicable AMMs (as described under Alternative 2) would be incorporated to reduce impacts to water quality and reduce sedimentation, erosion, flooding, including those listed below.

- AMM8: Implement Standard Urban Stormwater Management Plans
- AMM12: Confine and Delineate Work Area
- AMM16: Install Erosion Control Barriers
- AMM19: Implement Wet Weather Erosion Control Plan
- AMM21: Implement Additional Avoidance and Minimization Measures and Best Management Practices.
- AMM26: Implement Caltrans Construction BMPs to Maintain Water Quality

Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact WQ-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality (NEPA: less than significant; CEQA: less than significant)

Covered activities within the UPAs under Alternative 3 would be more concentrated in existing urbanized areas. Therefore, implementation of Alternative 3 would result in similar but less substantial impacts related to water quality as those determined by the Local Agencies for implementation of their general plans under Alternative 2 (City of Oroville 2009a; City of Gridley 2009; Butte County 2010; City of Chico 2011a; City of Biggs 2013). Further, because there would be less fill related to the construction of residential, commercial, and industrial development under this alternative compared with Alternative 2, water quality impacts within the UPAs would be also be reduced. Under Alternative 3, in areas outside UPAs and within water and irrigation districts and conservation lands, less undeveloped land would be disturbed and less impermeable surface area would be created than under Alternative 2, thereby reducing the extent of impacts related to increased stormwater runoff and contamination. Impacts on water quality as a result of construction and maintenance activities carried out as part of implementing conservation measures, covered activities outside the UPAs, and covered activities within the water and irrigation districts would be as described under Alternative 2, Impact WQ-1. The conservation measures, and any activities undertaken by the water districts or irrigation districts, would be the same as Under Alternative 2, although there would be an overall reduced amount and extent of conserved lands.

NEPA Determination: Under Alternative 3, surface and groundwater quality effects resulting from covered activities within and outside the UPAs, within the water and irrigation districts, and for CM4–CM12, CM14, and Activities to Improve Urban Stormwater Water Quality would be similar to those described for Alternative 2, Impact WQ-1. However, the extent of these potentially adverse effects would likely be smaller because less undeveloped land would be disturbed and less impermeable surface area would be created. Adherence to applicable federal, state, and local regulations, including Butte County's Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, and implementation of applicable AMMs, as well as BMPs cited in

Appendix D, would ensure that effects would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 3, surface and groundwater quality impacts resulting from covered activities within and outside the UPAs, within the water and irrigation districts, and for CM4–CM12, CM14, and Activities to Improve Urban Stormwater Water Quality would be similar to those described for Alternative 2, Impact WQ-1. However, the extent of these potentially significant impacts would likely be smaller because less undeveloped land would be disturbed and less impermeable surface area would be created. Adherence to applicable federal, state, and local regulations, including Butte County’s Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, and implementation of applicable AMMs, would ensure that impacts would be less than significant. No mitigation is required.

Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 3 would be the nearly the same as Impact WQ-2 under Alternative 2. Potential effects on groundwater supplies could be greater within the UPAs than under Alternative 2 because, in some cities, Alternative 3 would include higher densities in and around the existing urban area. However, under Alternative 3, there would be an overall less impervious surface area within the Plan Area than under Alternative 2 because less undeveloped land would be disturbed. Therefore, the impacts related to reduced groundwater recharge under this alternative would be less substantial relative to Alternative 2. It is not likely that implementation of covered activities outside UPAs, within water and irrigation districts, or implementation of the conservation measures would have any direct or indirect impacts on groundwater resources.

NEPA Determination: Implementation of Alternative 3 would result in similar effects on groundwater (i.e., increased groundwater pumping) as under Alternative 2, particularly for covered activities within the UPAs, and could reduce groundwater recharge by increasing impervious surface areas. However, because there would likely be less impervious surface area under this alternative relative to Alternative 2, the effect on groundwater supplies in the Plan Area would not be as substantial because there would potentially be greater recharge. It is not likely that implementation of covered activities outside UPAs, within water and irrigation districts, or implementation of the conservation measures would have any direct or indirect impacts on groundwater resources. General plan policies, goals, actions, and/or implementation strategies of the Local Agencies were designed to minimize the impact of groundwater pumping, reduced groundwater recharge, and groundwater pollution, and therefore would help reduce the severity of this effect. Adherence to general plan policies, the Butte County Groundwater Management Plan and Groundwater Ordinances, and other applicable local, state, and federal regulations would ensure that this effect would be not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 3 would result in similar impacts on groundwater (i.e., increased groundwater pumping) as under Alternative 2, particularly for covered activities within the UPAs, and could reduce groundwater recharge by increasing impervious surface areas. However, because there would likely be less impervious surface under this alternative relative to Alternative 2, the impact on groundwater supplies in the Plan Area would not be as substantial. It is not likely that implementation of covered activities outside UPAs, within water and irrigation districts, or implementation of the conservation measures would have any direct or

indirect impacts on groundwater resources. General plan policies, goals, actions, and/or implementation strategies of the Local Agencies were designed to minimize the impact of groundwater pumping, reduced groundwater recharge, and groundwater pollution, and therefore would help reduce the severity of this impact. Adherence to general plan policies, the Butte County Groundwater Management Plan and Groundwater Ordinances, and other applicable local, state, and federal regulations would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-3: Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

Permanent new development within the UPAs under Alternative 3 would be directed to existing urbanized areas. The Local Agencies determined that implementation of Alternative 3 would result in similar but less substantial impacts related to altering drainage patterns and surface runoff than under Alternative 2. Less undeveloped land would be disturbed and less impervious surface area created, thereby reducing the potential for impacts related to drainage patterns and surface runoff, including erosion, siltation and flooding through site clearing and grading, excavation, increasing land imperviousness, and altering channel geomorphology in the Plan Area (City of Gridley 2009; City of Oroville 2009a; Butte County 2010; City of Chico 2011a; City of Biggs 2013). Impacts on surface drainage and the rate or volume of surface runoff as a result of construction and maintenance activities carried out as part of implementing covered activities outside the UPAs, within the water and irrigation districts, and for the conservation measures would be the same as described under Alternative 2, Impact WQ-3.

NEPA Determination: Implementation of Alternative 3 could have adverse effects on the existing drainage pattern of sites or areas, and/or substantially cause erosion, siltation, or flooding through site clearing and grading, excavation, increasing land imperviousness, and altering channel geomorphology. Although the extent of these potential effects under this alternative would be smaller relative to under Alternative 2 due to reduced development and fill, this effect could still be adverse. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable federal, state, and local regulations regarding erosion, surface runoff, and drainage control, as well as implementation of applicable AMMs, as well as the Caltrans BMPs cited in Appendix D, would ensure that this effect would not be adverse. Furthermore, the CMs are expected to increase and encourage naturally functioning hydrologic systems that would reduce substantial site runoff, erosion, and/or inadvertent flooding over the long term. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 3 could have significant impacts on the drainage pattern of sites or areas, and/or substantially cause erosion, siltation, or flooding through site clearing and grading, excavation, increasing land imperviousness, and altering channel geomorphology. Although the extent of these potential impacts under this alternative would be smaller relative to under Alternative 2 due to reduced development and fill, this impact could still be significant. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable federal, state, and local regulations regarding erosion, surface runoff, and drainage control, as well as implementation of applicable AMMs, as well as Caltrans BMPs cited in Appendix D, would ensure that this impact

would be less than significant. Furthermore, the CMs are expected to increase and encourage naturally functioning hydrologic systems that would reduce substantial site runoff, erosion, and/or inadvertent flooding over the long term. Impacts would be less than significant. No mitigation is required.

Impact WQ-4: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

Covered activities within the UPAs under Alternative 3 would result in similar but less substantial impacts related to surface runoff, stormwater drainage, and polluted stormwater runoff than those determined by the Local Agencies for implementation of their general plans under Alternative 2 (City of Gridley 2009; City of Oroville 2009a; Butte County 2010; City of Chico 2011a; City of Biggs 2013). This would be true for covered activities outside the UPAs and water and irrigation districts as well as for conservation measures that, once implemented, would result in an increase in impervious surface areas. Under this alternative, less undeveloped land would be disturbed and less impervious surface area would be created. Consequently, there would be reduced potential for impacts related to the rate and amount of surface runoff and contaminants typically contained in urban runoff, particularly from impervious surfaces such roads and parking lots.

NEPA Determination: Implementation of Alternative 3, particularly of covered activities that result in increases in impervious surfaces would increase stormwater runoff relative to existing conditions. Increased stormwater runoff, both during and after development, at project sites could exceed existing storm drainage systems and contribute additional pollutants, such as sediment, oil, pesticides to the drainage system. Although the extent and/or severity of these impacts under this alternative would be reduced relative to Alternative 2 because there would be less development and less impervious services, this would still be a potentially adverse effect. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and other applicable, federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable AMMs, and Caltrans BMPs cited in Appendix D, would ensure that this would not be an adverse effect. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 3, particularly of covered activities that result in increases in impervious surfaces would increase stormwater runoff relative to existing conditions. Increased stormwater runoff, both during and after development, at project sites could exceed existing storm drainage systems and contribute additional pollutants, such as sediment, oil, pesticides, to the drainage system. Although the extent and/or severity of these impacts under this alternative would be reduced relative to Alternative 2 because there would be less development and less impervious services, this would still be a potentially significant impact. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, as well as to other applicable, federal, state and local regulations, regarding erosion, surface runoff, and drainage control, and implementation of applicable AMMs, and Caltrans BMPs cited in Appendix D, would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-5: Place housing within a 100-year flood hazard area or place structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 3 would be similar to Impact WQ-5 under Alternative 2. Potential effects on flood risk would be greatest within the UPAs because there would be higher density development in and around the existing urban areas. However, under Alternative 3, there would be less overall development within the Plan Area than under Alternative 2; consequently, there would be less housing and fewer structures placed within 100-year flood-hazard areas.

NEPA Determination: Although implementation of the Local Agencies' general plans would allow limited new development within the 100-year flood hazard zones, implementation of Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations regarding flooding, would ensure that this effect is not adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Although implementation of the Local Agencies' general plans would allow limited new development within the 100-year flood hazard zones, implementation of Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations regarding flooding, would ensure that impacts would be less than significant. No mitigation is required.

Impact WQ-6: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

This impact under Alternative 3 would be the same as Impact WQ-6 under Alternative 2. Alternative 3 would place people and structures in areas with risk of levee or dam inundation. Although the Local Agencies' general plan policies and actions are intended to reduce flood hazard damage and exposure risks associated with dam and levee failure within the county, they do not entirely eliminate risks to people and property from potential floods. In addition, recently adopted policies by FEMA would de-certify a number of levees in the county, which indicates that larger areas of the county are subject to levee inundation than realized under previous policies. As stated in the County general plan EIR, it is not within Butte County's authority to require or complete maintenance and improvements to levees in the county owned and maintained by private individuals and other public agencies, as discussed under Alternative 1, Impact WQ-6.

Because Alternative 3 focuses development in targeted locations within the city, the dam inundation areas within the cities of Biggs, Gridley, and Oroville would be most affected (the majority of Chico does not fall within a dam inundation area) as well as urban areas surrounded by levees. Development associated with covered activities within or outside the UPAs or within the water and irrigation districts would be less affected by the potential for exposure to flood risk from a levee or dam failure. Under Alternative 3, there would be less overall development within the Plan Area than under Alternative 2; consequently, people and structures would have less exposure to flood risks associated with dam or levee failure.

The conservation measures would not involve activities that would place people or structures within areas prone to risk of levee or dam failure.

NEPA Determination: Implementation of the activities under Alternative 3 would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. However, this effect would be less than that under Alternative 2 because there would be overall less development within the Plan Area. The conservation measures would not result in an increased exposure to risks of levee or dam failures. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. This would be an adverse effect. Therefore, impacts would be significant and unavoidable.

CEQA Determination: Implementation of the activities under Alternative 3 would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. However, this impact would be less than that under Alternative 2 because there would be overall less development within the Plan Area. The conservation measures would not result in an increased exposure to risks of levee or dam failures. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. As a result, this impact would be significant and unavoidable.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures and AMMs as described in the BRCP under Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2.

The impacts of the covered activities within local jurisdictions of the Local Agencies would be the same under Alternative 4 as under Alternative 2, as would the water district and irrigation district covered activities.

Impact WQ-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 4 would be similar to Impact WQ-1 under Alternative 2. An increase in agricultural acreage devoted to rice farming would potentially result in an increase in existing pesticide-laden runoff to agricultural drainages and potentially to surface waters. However, the application of pesticides, herbicides, fungicides, and fertilizers would continue to be in compliance with DPR use requirements (Section 9.1.1, *Regulatory Setting*) as well as other regulations and programs to minimize water quality impacts.

NEPA Determination: Under Alternative 4, surface and groundwater quality effects resulting from the covered activities within and outside the UPAs, within the water and irrigation districts, and for CM4–CM12, CM14 and Activities to Improve Urban Stormwater Water Quality would be similar to those described for Impact WQ-1 under Alternative 2. However, because there would be additional land devoted to rice farming, there would be an increased potential for pollutant discharge (e.g., pesticides) to agricultural drainages and surface waters. These effects could be adverse. Adherence

to applicable federal, state, and local regulations, including Butte County's Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, as well as implementation of applicable AMMs, would ensure that the effect would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 4, surface and groundwater quality impacts resulting from the implementation covered activities within and outside the UPAs, within the water and irrigation districts, and for CM4–CM12, CM14, and Activities to Improve Urban Stormwater Water Quality would be similar to those described for Impact WQ-1 under Alternative 2. However, because there would be additional land devoted to rice farming, there would be an increased potential for pollutant discharge (e.g., pesticides) to agricultural drainages and surface waters. This impact would be potentially significant. Adherence to applicable federal, state, and local regulations, including Butte County's Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, as well as implementation of applicable AMMs, would ensure that impacts would be less than significant. No mitigation is required.

Impact WQ-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 4 would be nearly the same as Impact WQ-2 under Alternative 2. However, under Alternative 4, there would be additional conservation of grassland and rice land. Although the maintenance of existing rice lands still may require the use of groundwater supplies, there would be more land perviousness and, consequently, greater groundwater recharge relative to Alternative 2. Therefore, the impacts related to reduced groundwater recharge under this alternative would be less substantial relative to Alternative 2.

NEPA Determination: Implementation of Alternative 4 would result in similar effects on groundwater (i.e., increased groundwater pumping) as under Alternative 2, particularly for projects implemented within the UPAs, and could reduce groundwater recharge by increasing impervious surface areas. However, because there would likely be less impervious surface under this alternative relative to Alternative 2, the effect on groundwater supplies in the Plan Area would not be as substantial because there would potentially be greater recharge. It is not likely that implementation of covered activities outside UPAs, within water and irrigation districts, or implementation of the conservation measures would have any direct or indirect change in impacts on groundwater resources. General plan policies, goals, actions, and/or implementation strategies of the Local Agencies were designed to minimize the impact of groundwater pumping, reduced groundwater recharge, and groundwater pollution, and therefore would help reduce the severity of this effect. Adherence to general plan policies, the Butte County Groundwater Management Plan and Groundwater Ordinances, and other applicable local, state, and federal regulations would ensure that this effect would not be adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 4 would result in similar impacts on groundwater (i.e., increased groundwater pumping) as under Alternative 2, particularly for projects implemented within the UPAs, and could reduce groundwater recharge by increasing impervious surface areas. However, because there would likely be less impervious surface under this alternative relative to Alternative 2, the impact on groundwater supplies in the Plan Area would not be as substantial because there would potentially be greater recharge. Nonetheless, this impact could still be significant. It is not likely that implementation of covered activities outside UPAs, within water

and irrigation districts, or implementation of the conservation measures would have any direct or indirect change in impacts on groundwater resources. General plan policies, goals, actions, and/or implementation strategies of the Local Agencies were designed to minimize the impact of groundwater pumping, reduced groundwater recharge, and groundwater pollution, and therefore would help reduce the severity of this effect. Adherence to general plan policies, the Butte County Groundwater Management Plan and Groundwater Ordinances, and other applicable local, state, and federal regulations would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-3: Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 4 would be similar to Impact WQ-3 under Alternative 2. Covered activities would alter drainage patterns in areas where development would take place; alter channel geomorphology through aquatic habitat improvements as part of conservation measures; increase surface runoff by increased land imperviousness through new development; cause erosion and/or siltation through actions such as site clearing, grading, and excavation during construction; and potentially result in ponding or other flooding effects due to construction activities and new development. However, Alternative 4 would allow for greater preservation of existing pervious area for rice and grassland than would Alternative 2, thereby reducing potential for the creation of new impervious area. This would also result in greater volumes of existing surface runoff to agricultural drainages during certain times of the year. Therefore, while Alternative 4 would impact existing drainage patterns, it would also lessen the potential for the alteration of existing drainage patterns in conserved lands relative to Alternative 2.

NEPA Determination: Implementation of Alternative 4 would potentially have adverse effects on the existing drainage pattern of sites or areas and/or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and applicable federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable AMMs would ensure that this impact would not be adverse. Furthermore, the CMs are expected to increase and encourage naturally functioning hydrologic systems that would reduce substantial site runoff, erosion, and/or inadvertent flooding over the long term. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 4 would substantially alter the existing drainage pattern of sites or areas and/or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite. The extent of these impacts would potentially be less than under Alternative 2 because of the reduced amount of development and fill in the Plan Area under Alternative 4. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, and applicable federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable AMMs would ensure that this impact would be less than significant. Furthermore, the CMs are expected to increase and encourage naturally functioning hydrologic systems that would reduce substantial site runoff, erosion, and/or

inadvertent flooding over the long term. Impacts would be less than significant. No mitigation is required.

Impact WQ-4: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 4 would be similar to Impact WQ-4 under Alternative 2. However, this alternative would allow for the greater preservation of existing pervious land for rice and grassland, thereby reducing potential for the creation of new impervious area. This would also result in greater volumes of existing surface runoff to agricultural drainages during certain times of the year. An increase in agricultural acreage devoted to rice farming would potentially result in an increase in existing pesticide-laden runoff to agricultural drainages and, potentially, to surface waters. However, the application of pesticides, herbicides, fungicides, and fertilizers would continue to be in compliance with DPR use requirements (Section 9.1.1, *Regulatory Setting*) as well as other regulations and programs to minimize water quality impacts.

NEPA Determination: Implementation of Alternative 4, particularly of covered activities that result in increases in impervious surfaces would increase stormwater runoff relative to existing conditions. Increased stormwater runoff, both during and after development, at project sites could exceed existing storm drainage systems and contribute additional pollutants, such as sediment, oil, and pesticides to the drainage system. The extent and/or severity of these impacts under this alternative would be similar to Alternative 2 except the increase in agricultural acreage devoted to rice farming would potentially result in an increase in existing pesticide-laden runoff to agricultural drainages and, potentially, to surface waters. This could be an adverse effect. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, as well as to other applicable federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable AMMs and Caltrans BMPs cited in Appendix D would ensure that this would not be an adverse effect. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of Alternative 4, particularly of covered activities that result in increases in impervious surfaces would result in increased stormwater runoff relative to existing conditions. Increased stormwater runoff, both during and after development, at project sites could exceed existing storm drainage systems and contribute additional pollutants, such as sediment, oil, and pesticides to the drainage system. The extent and/or severity of these impacts under this alternative would be similar to Alternative 2 except the increase in agricultural acreage devoted to rice farming would potentially result in an increase in existing pesticide-laden runoff to agricultural drainages and, potentially, to surface waters. This impact would be potentially significant. Adherence to the Butte County Stormwater Management Program, the Butte County Stormwater Management and Discharge Control Ordinance, as well as to other applicable federal, state, and local regulations regarding erosion, surface runoff, and drainage control, and implementation of applicable AMMs and Caltrans BMPs cited in Appendix D would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-5: Place housing within a 100-year flood hazard area or place structures that would impede or redirect flood flows within a 100-year flood hazard area (NEPA: less than significant; CEQA: less than significant)

This impact under Alternative 4 would be similar to Impact WQ-5 under Alternative 2 because the same covered activities would be implemented. Alternative 4 would place new structures within a 100-year flood hazard area. However, increased acreages for rice and grassland would provide increased flood control in flood risk areas by allowing the flooding of fields and open space. Increased conserved lands would also reduce the area for potential future placement of structures within 100-year flood hazard areas.

NEPA Determination: Implementation of the Local Agencies' general plans would allow limited new development within the 100-year flood hazard zones. However, this impact would be less than that of Alternative 2 because there would be overall more open area for flood control and less area for potential future development. Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations related to flooding, would ensure that this effect is not adverse. Impacts would be less than significant. No mitigation is required.

CEQA Determination: Implementation of the Local Agencies' general plans would allow limited new development within the 100-year flood hazard zones. However, this impact would be less than that of Alternative 2 because there would be overall more open area for flood control and less area for potential future development. Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations related to flooding, would ensure that this impact would be less than significant. No mitigation is required.

Impact WQ-6: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

This impact under Alternative 4 would be the same as Impact WQ-6 under Alternative 2. Alternative 4 would place people and structures in areas with risk of levee or dam inundation. Although the general plan policies and actions of the Local Agencies are intended to reduce flood hazard damage and exposure risks associated with dam and levee failure within the county, they do not entirely eliminate risks to people and property from potential floods. In addition, recently adopted policies by FEMA would de-certify a number of levees in the county, which indicates that larger areas of the county are subject to levee inundation than realized under previous policies. Increased acreages for rice and grassland would provide increased flood control during a levee or dam failure by allowing the flooding of fields and open space. Increased conserved lands would also reduce the area available for potential future placement of structures within levee and dam inundation areas, thereby reducing the potential exposure of people or structures to flooding impacts associated with levee or dam failure.

NEPA Determination: Implementation of Alternative 4 would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. However, this impact would be less than that of Alternative 2 because there would be overall more open area for flood control during a levee or dam failure and less area

for potential future exposure of people or structures to associated flooding impacts. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. This would be an adverse effect. Therefore, impacts would be significant and unavoidable.

CEQA Determination: Implementation of Alternative 4 would expose people and structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of levee or dam failure in the Plan Area. However, this impact would be less than that of Alternative 2 because there would be overall more open area for flood control during a levee or dam failure and less area for potential future exposure of people or structures to associated flooding impacts. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not eliminate risks to people and property. As a result, this impact is considered significant and unavoidable.

9.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for hydrology, water resources, and water quality is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This analysis considered agricultural and urban development projects, including roadway projects, and water supply development projects; the Local Agency general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

This analysis determines whether the covered activities not analyzed in previous environmental documents would result in a cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past projects have resulted in various effects on hydrology, water resources, and water quality in the Plan Area. As disclosed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*, the Plan Area contains numerous surface water bodies and groundwater resources that have been negatively affected by development and use but have also benefitted from restoration projects. In addition, past and present flood control projects provide increased flood control in the Plan Area.

The conversion of natural lands to farmland, the subsequent urbanization of farmland to urban and rural residential uses, and the direct conversion of natural lands to urban and rural residential uses in the county have reduced water quality as a result of construction activities and increased polluted runoff. Increased development has also increased the use of surface water and groundwater supplies (see Chapter 12, *Public Services and Public Utilities*, for more information on cumulative impacts on water supply and development). As a result, groundwater pumping has increased in the county, and approximately 75% of the county's residential water supply currently is extracted from groundwater (Butte County 2010).

While urbanization and other activities have contributed to reduced water quality in the Plan Area, several restoration programs have been implemented to restore natural processes related to hydrology, stream channels, sediment, floodplains, and ecosystem water quality and to develop

habitat management and restoration actions, including restoration of river corridors, reconstruction of channel floodplain interaction, and restoration of aquatic habitat. In addition, a substantial amount of land preservation, including wetlands, has occurred along with the urbanization of the Plan Area.

Extensive work has been undertaken to improve flood protection for urban areas. Past and present flood control projects within the Plan Area include the CVFPP, Sacramento River Flood Control System Evaluation, Sacramento–San Joaquin Rivers Comprehensive Study, Sacramento River Bank Protection Project, and the Sutter Basin Project. These projects are aimed at improving the structural integrity of urban levees and other flood control facilities. While these projects generally have degraded instream and nearby wetland and riparian communities in the Plan Area, efforts have been underway to upgrade flood control systems while restoring natural stream channels to the extent possible along the Sacramento and Feather Rivers.

Alternative 1—No Action (No Plan Implementation)

The County of Butte determined that implementation of the County general plan would result in cumulatively considerable and significant impacts associated with flooding. In addition, implementation of the County General Plan 2030 2030 would contribute to development in levee and dam inundation areas, resulting in a significant cumulative impact (Butte County 2010). The City of Chico determined that implementation of its general plan would result in less than cumulatively considerable impacts related to flooding but could increase impervious surfaces and alter drainage conditions and rates in the Plan Area, which could contribute to cumulative flood conditions downstream (City of Chico 2011a). Accordingly, past, present, and reasonably foreseeable future projects would result in cumulatively considerable and significant impacts.

The City of Chico determined that implementation of its general plan would result in less than cumulatively considerable impacts related to water quality. (City of Chico 2011a). Butte County and the Cities of Biggs, Gridley, and Oroville determined that implementation of the general plans for the county and for those cities would not result in any cumulative impacts for hydrology, water resources, and water quality. Accordingly, past, present, and reasonably foreseeable future projects would not result in cumulatively considerable and significant impacts in this area.

Alternative 2—Proposed Action

The County determined that implementation of the County general plan would result in cumulatively considerable and significant impacts associated with flooding due to the increase in impervious surfaces and altered drainage conditions and rates in the Plan Area. Accordingly, past, present, and reasonably foreseeable future projects would result in cumulatively considerable and significant impacts. Implementation of covered activities under Alternative 2 would result in limited new development within the 100-year flood hazard zones. However, Local Agency policies and actions designed to prevent flooding of occupied developments and restrict new development within the 100-year flood zone, in combination with the Butte County Flood Hazard Prevention Ordinance, Butte County Flood Mitigation Plan, and other local, state, and federal regulations related to flooding would reduce flooding impacts. Therefore, implementation of the BRCP would not result in an additional incremental contribution to cumulative impacts, and cumulative impacts would be the same as under Alternative 1, cumulatively considerable and significant.

The County determined that implementation of the County general plan would result in cumulatively considerable and significant impacts associated with flooding due to development in

levee and dam inundation areas (Butte County 2010). Accordingly, past, present, and reasonably foreseeable future projects would result in cumulatively considerable and significant impacts. Implementation of the covered activities under Alternative 2 would expose people and structures to a significant risk of loss, injury, or death involving flooding, including as a result of levee or dam failure in the Plan Area. Although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not entirely eliminate risks to people and property. This is because the majority of levees and dams in the county are owned or maintained by private individuals or other public agencies, and it is not feasible for the Permit Applicants to completely address maintenance and improvements to all levees to the extent necessary to eliminate risks from levee failure. In addition, FEMA adopted a new policy that would de-certify a number of levees in the County and would not consider these levees when developing FIRMs. This policy has led to significantly larger areas being designated as flood zones. Consequently, Alternative 2 would result in a cumulatively considerable contribution to cumulative impacts on exposure of people and structures to flood risks as a result of levee or dam failure in the Plan Area.

The City of Chico determined that implementation of its general plan would result in less than cumulatively considerable impacts related to water quality. (City of Chico 2011a). The County and the Cities of Biggs, Gridley, and Oroville determined that implementation of the general plans for the county and for those cities would not result in any cumulative impacts for hydrology, water resources, and water quality. Accordingly, past, present, and reasonably foreseeable future projects would not result in cumulatively considerable and significant impacts in this area. Implementation of covered activities and BRCP conservation measures could result in significant impacts on water quality in the Plan Area. However, adherence to applicable federal, state, and local regulations, including Butte County's Stormwater Management Program, Stormwater Management and Discharge Control Ordinance, as well as implementation of applicable AMMs and Caltrans BMPs cited in Appendix D would reduce impacts on water quality. Furthermore, it is anticipated that the BRCP would regionally benefit hydrology and water quality because the restored habitat required by the conservation strategy would encourage naturally functioning hydrologic systems that would ultimately reduce large quantities of site runoff, erosion, flooding, and decreased water quality. Therefore, Alternative 2 would not result in an incremental contribution to cumulative impacts, and cumulative impacts would be less than significant.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

The effects on hydrology, water resources, and water quality under Alternatives 3 and 4 would be the same as under Alternative 2. These alternatives would not result in an incremental contribution to cumulative impacts associated with flooding due to the increase in impervious surfaces, altered drainage conditions and rates in the Plan Area, or impacts on water quality due to substantial grading, site preparation, or increase in urbanized development. However, neither Alternative 3 nor Alternative 4 would result in a cumulatively considerable contribution to cumulative impacts on exposure of people and structures to flood risks as a result of levee or dam failure in the Plan Area because, although implementation of the policies and actions in the Local Agencies' general plans would reduce risks associated with levee failure, they would not entirely eliminate risks to people and property.

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10.1 Affected Environment

This section describes the regulatory and physical environmental setting for land use planning and consistency, as well as existing land uses within the Plan Area. There are no tribal plans available that pertain to land use in the Plan Area; therefore, tribal plans are not discussed.

10.1.1 Regulatory Setting

Federal

The United States Bureau of Land Management (BLM) owns approximately 1,320 acres within the Plan Area (Figure 10-1). BLM completed a draft resource management plan (RMP) in 1990, and the final Record of Decision was completed in June 1993. The BLM Redding Field Office has no plans to update the RMP at this time (Cook pers. comm.). The existing RMP is a 15-year strategy for where and how BLM will administer public lands within the Redding resource area, which includes Butte County. The RMP has allowed for shifts in BLM public land ownership patterns of scattered parcels to combine into larger aggregates of accessible and useful public lands. The majority of land sales, exchanges, and interjurisdictional transfers between other agencies and organizations have taken place in Tehama and Trinity Counties. The goal of the RMP is to ensure that land sales, exchanges, and transfers meet BLM's long-term objectives for land preservation.

State

The State of California manages significant land resources in the Plan Area through a variety of planning documents. State-owned lands (Figure 10-1), include the Lake Oroville State Recreation Area (42,000 acres total, of which 4,060 acres are within the Plan Area), Thermalito Forebay/Afterbay (5,230 acres), Oroville Wildlife Area (5,500 acres), Gray Lodge Wildlife Area (8,375 acres), Table Mountain Ecological Reserve (3,500 acres), Sacramento River Wildlife Area (approximately 500 acres), Upper Butte Basin Wildlife Area Little Dry Creek Unit (3,762 acres), Llano Seco Unit (1,521 acres), Stone Ridge Ecological Reserve (752 acres), Butte Creek Ecological Reserve (500 acres), several thousand acres of conservation easements and many miles of rivers and streams. Plans for state-owned lands include those listed below.

- The State wildlife areas have management plans that specify the purpose for which the land was acquired and how it will be managed for the passive use and enjoyment of the public for identified recreational purposes compatible with supporting activities that benefit wildlife and habitat.
- The State ecological reserves are designated at the time of purchase for the management of specific resources, including, but not limited to, wildlife, rare plants, aquatic or other sensitive habitat, and may specify limited allowable public access or uses.

- The Lake Oroville State Recreation Area General Plan addresses resource management, site development, and the provision of recreational facilities at the Lake Oroville State Recreation Area by the State Parks Department.
- The State Water Plan Update of 2009 addresses land use, planning, and operations management by DWR for the SWP, which includes the Thermalito Forebay/Afterbay.

Local

This section presents the Local Agencies' general and specific plans, as well as the Butte County Airport Land Use Compatibility Plan (ALUCP). The BRCP would not supersede any of these plans; rather, it would facilitate their implementation by providing incidental take permit coverage for planned land uses.

Butte County General Plan 2030

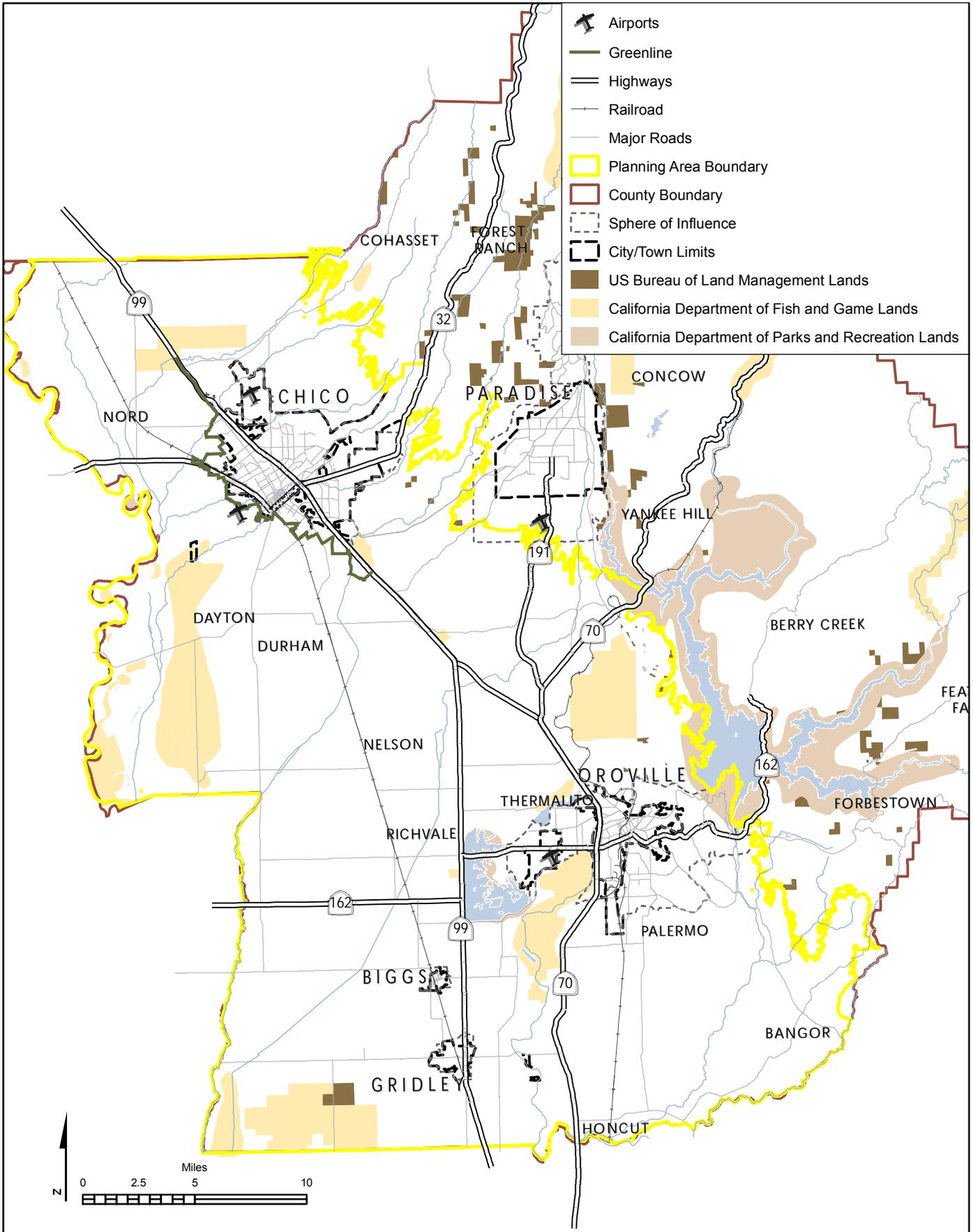
The County adopted General Plan 2030 in October 2010 and amended it in November 2012; it covers a planning period through 2030. General Plan 2030's objectives are outlined in its Guiding Principles, which address the following topics: cooperative planning; balancing growth, urban development, and housing; context-sensitive rural development; airport land use planning; multi-modal circulation; sustainability; natural resources and environment; water resources; agriculture; equitable economic development; recreation; cultural resources; public health and safety; and public services.

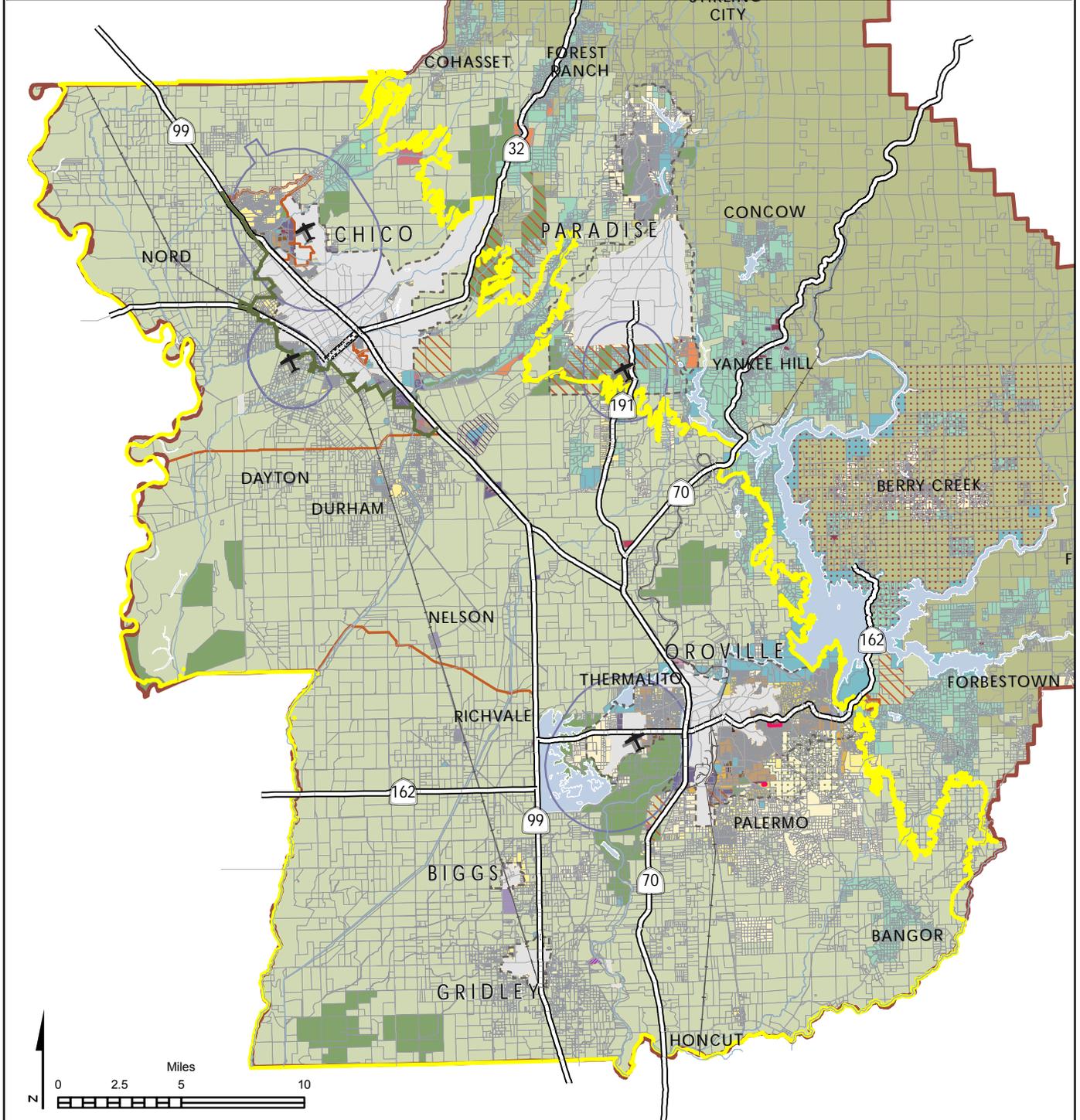
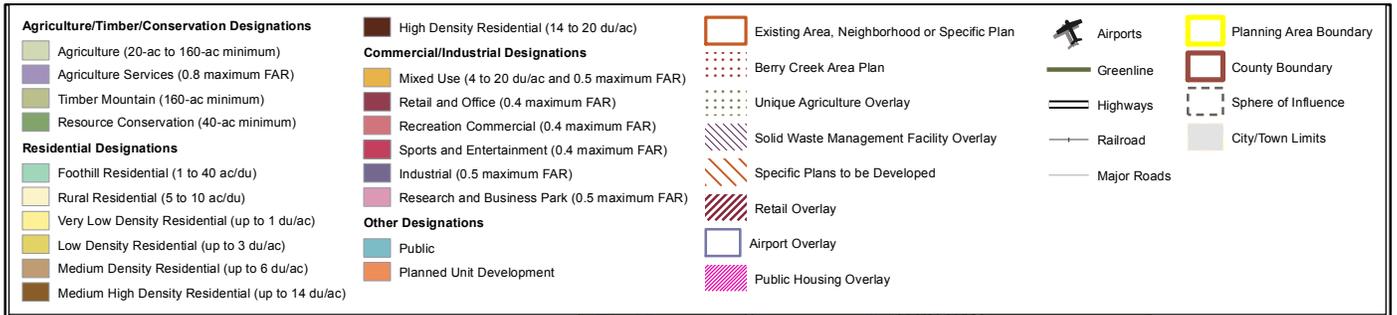
The General Plan 2030 land use map is shown in Figure 10-2. General Plan land use designations are countywide and extend beyond the Plan Area, but they only apply to unincorporated land in the County. General Plan 2030 also includes the Chico Area Greenline, which acts as an urban growth boundary just outside the western Chico city limits. The Chico Area Greenline is also shown in Figure 10-2.

The land use designations described in General Plan 2030 establish the types and intensity or density of uses allowed on each parcel. Standards of building intensity for non-residential uses are stated as maximum floor-area ratios (FAR) based on gross acreage. FAR is a ratio of the gross building square footage permitted on a lot to the gross square footage of the lot. For example, on a site with 10,000 square feet of land area, a FAR of 1.0 will allow 10,000 gross square feet of building floor area to be built. On the same site, a FAR of 2.0 would allow 20,000 square feet of floor area (e.g. a two-story building with 100% of lot coverage, or a four-story building with 50% lot coverage), and a FAR of 0.4 would allow 4,000 square feet of floor area.

The land use designations for General Plan 2030 include the following:

- **Agriculture.** This designation allows the cultivation, harvest, storage, processing, sale, and distribution of all plant crops, as well as livestock grazing, animal husbandry, intense animal uses, and animal matter processing. Residential uses are limited to one single-family home and one secondary unit per parcel, as well as farm labor housing. The minimum parcel size ranges from 20 to 160 acres.
- **Agriculture Services.** This designation allows all agricultural uses described above, as well as agriculture-related services that are complementary to existing agricultural uses, including industrial uses such as processing facilities, commercial uses such as agricultural equipment





sales, and technologies that use agricultural byproducts. This designation allows a maximum FAR of 0.8.

- **Timber Mountain.** This designation allows forest management and the harvesting and processing of forest products. Residential uses are limited to one single-family home per parcel. The minimum parcel size is 160 acres.
- **Resource Conservation.** This designation allows natural, wilderness, and study areas, as well as limited recreational and commercial recreational uses. Residential uses are limited to one single-family home per parcel, except in the North Chico Specific Plan area, where residential uses in the Resource Conservation designation are prohibited. The minimum parcel size is 40 acres.
- **Foothill Residential.** This designation allows single-family homes at rural densities of 1 to 40 acres per dwelling unit, depending on the zoning.
- **Rural Residential.** This designation allows single-family homes at rural densities of 1 dwelling unit per 5 acres or more (up to 0.2 units per acre).
- **Very Low Density Residential.** This designation allows single-family homes at densities up to 1 dwelling unit per acre.
- **Low Density Residential.** This designation allows single-family homes at densities up to 3 dwelling units per acre.
- **Medium Density Residential.** This designation allows detached and attached single-family homes at densities up to 6 dwelling units per acre.
- **Medium High Density Residential.** This designation allows detached and attached single-family homes, duplexes, townhomes, condominiums, multiple-dwelling structures, mobile home parks, group quarters, and care homes, at densities up to 14 dwelling units per acre.
- **High Density Residential.** This designation allows higher-density urban residential uses, including townhomes, condominiums, multiple-dwelling structures, mobile home parks, group quarters, and care homes, at densities of 14 to 20 dwelling units per acre.
- **Very High Density Residential.** This designation allows high-density urban residential uses, including townhomes, condominiums, multiple-dwelling structures, mobile home parks, group quarters, and care homes, at densities of 20 to 30 dwelling units per acre. This designation is not applied to any parcels in the county in the General Plan 2030 land use map, but may be applied through General Plan Amendments in the future.
- **Mixed Use.** This designation allows mixed but compatible uses in close proximity to each other, including residential, retail, service, lodging, and office uses. This designation allows 4 to 20 dwelling units per acre and a maximum FAR of 0.5.
- **Retail and Office.** This designation allows structures and activities providing a full range of merchandise and services to the general public, as well as professional/office uses. Residential uses are allowed when it can be shown that such uses will be operated in conjunction with a commercial use. This designation allows for a maximum FAR of 0.4.
- **Recreation Commercial.** This designation allows recreation and tourism-related uses. This designation allows for a maximum FAR of 0.4.

- **Sports and Entertainment.** This designation allows sports and entertainment uses as primary uses, including sports facilities, golf courses, theaters, and amphitheaters, as well as a range of related commercial uses that are compatible with the primary uses. The related uses may include localized retail, commercial retail, and service establishments. This designation allows for a maximum FAR of 0.4.
- **Industrial.** This designation allows the processing, manufacturing, assembly, packaging, storage, and distribution of goods and commodities. It also allows for warehouses, storage, logistics centers, trucking terminals, and railroad facilities. This designation allows for a maximum FAR of 0.5.
- **Research and Business Park.** This designation allows office, research, and technology-related uses, and is intended to promote green industry. This designation allows for a maximum FAR of 0.5.
- **Public.** This designation allows large facilities owned and operated by government agencies, including schools, colleges, airports, dams and reservoirs, disposal sites, recreation facilities, conservation areas, fire stations, and other government buildings and property. It also allows quasi-public uses such as churches, hospitals, private schools, day cares, cemeteries, and educational and institutional uses.
- **Planned Unit Development.** This designation identifies future developments that will be considered under a Planned Unit Development application.
- **Berry Creek Area Plan Overlay.** This overlay designation calls for the development of an Area Plan for the Berry Creek area by the Berry Creek community. The Plan will include rural residential, retail, public, and agricultural uses. Until an Area Plan is adopted, any development within this area is subject to the underlying land use designations.
- **Specific Plans to be Developed Overlay.** This overlay applies to areas that are expected to be developed under a specific plan. Each specific plan will be intended to implement the vision identified in the general plan. Until a specific plan is adopted, any development within this area is subject to the underlying land use designations.
- **Unique Agriculture Overlay.** This overlay designation allows agricultural support and specialty agriculture uses either by right or under discretionary permit, regardless of whether such uses are allowed in the underlying Agriculture, Rural Residential, or Foothill Residential designation, as a means to protect and promote small-scale agriculture. Allowed uses include wineries, roadside stands, farm-based tourism, bed and breakfasts, and ancillary restaurants and/or stores, as well as the uses allowed by the underlying designation.
- **Retail Overlay.** This overlay allows retail, service, or office uses, in addition to the uses allowed in the underlying designation.
- **Solid Waste Management Facility Overlay.** This overlay allows uses that are accessory and/or related to solid waste and/or septage disposal, as well as uses that are compatible with landfill operations. Compatible uses do not involve on-going occupation by people; are not bothered by the visual, noise, odor, and traffic issues associated with the landfill; and have their own visual, noise, odor, and traffic issues that are not desired elsewhere.
- **Airport Overlay.** This overlay pertains to areas that are within Airport Land Use Compatibility Zones and are subject to additional restrictions under the Butte County Airport Land Use Compatibility Plan.

- **Deer Herd Migration Area Overlay.** This overlay includes Winter and Critical Winter deer herd migration areas. The Winter Deer Herd Migration Area Overlay requires a minimum lot size of 20 acres, and the Critical Winter Deer Herd Migration Area Overlay requires a minimum lot size of 40 acres. This overlay designation is shown in Figure 10-3.
- **Public Housing Overlay.** This overlay is intended to support the continued operation of existing public housing facilities and those facilities under the direct ownership, operation, control, or oversight of a governmental or quasi-governmental agency. This overlay is also intended to support the implementation of the County's Housing Element and to support the County's agricultural labor, special needs, and low- and moderate-income housing communities. This overlay may be combined with the "Public" base zone.
- **Military Airspace Overlay.** This overlay pertains to areas that are located within the Military Operations Areas (MOAs). The MOAs are comprised of a three-dimensional airspace designated for military training and transport activities that have a defined floor (minimum altitude) and ceiling (maximum altitude).

Butte County Airport Land Use Compatibility Plan

On December 20, 2000, the Butte County Airport Land Use Commission (ALUC) adopted the Butte County ALUCP, although it was not adopted by the Board of Supervisors. It establishes procedures and criteria for the ALUC to review proposed land use development and affected municipalities for compatibility with airport activity. State law requires public access airports to develop comprehensive land use plans, designating airport vicinity land use and clear zones. Such plans are to be adopted by the County's ALUC, which includes two members appointed by the municipalities, two members appointed by the airport managers, two members appointed by the County Board of Supervisors, and one member from the public-at-large appointed by the ALUC.

The Butte County ALUCP is distinct from airport master plans, which address planning issues within a specific airport. The purpose of a compatibility plan is to ensure that incompatible development does not occur on lands surrounding the airport. The 2000 ALUCP encompasses the four largest airports in the county: Chico Municipal Airport, Oroville Municipal Airport, Paradise Skypark Airport, and Ranchoero Airport. Figure 10-4 displays the Butte County Airport Land Use Compatibility Zones.

City General Plans

There are four incorporated cities within the Plan Area: Biggs, Chico, Gridley, and Oroville. Each city has adopted a general plan guiding development within its limits and larger Plan Area. The following discussion briefly summarizes the provisions of each city general plan.

City of Biggs

The City of Biggs adopted its current General Plan in November 1998 and is currently in the process of preparing an updated General Plan and environmental review of that plan. The 1998 General Plan covers a planning period through 2015. The Plan prescribes land uses for the area within the city limits and Sphere of Influence (SOI), which was last adjusted by the Butte Local Agency Formation Commission (LAFCO) in 1994. A primary land use goal of the general plan is to "maintain and promote the qualities which make Biggs a desirable community." In addition, economic development is a guiding principle throughout the 1998 Biggs General Plan.

The general plan land use map is shown in Figure 10-5, and it includes the following land use designations:

- **Low Density Residential.** This designation allows single-family homes at densities of 2 to 6 dwelling units per acre.
- **Medium Density Residential.** This designation permits single-family homes, duplexes, triplexes, and fourplexes at densities of 6 to 14 dwelling units per acre.
- **High Density Residential.** This designation permits a range of dwelling unit types at densities of 6 to 20 dwelling units per acre.
- **Commercial.** This designation permits commercial uses, including retail, office, and other commercial services. Residential uses may also be permitted under this designation.
- **Industrial Light.** This designation permits light industrial uses. Commercial uses may also be permitted under this designation.
- **Heavy Industrial.** This designation permits heavy industrial uses such as agricultural processing and heavy manufacturing.
- **Public.** This designation allows public uses such as schools, parks, libraries, utility infrastructure, and police stations.
- **Rail.** This designation is for the Union Pacific Railroad corridor. Development is not permitted within this corridor.

As noted above, the City of Biggs is currently pursuing an update to its General Plan and an amendment to its SOI boundary. One of the goals of the General Plan Update is to increase retail, industrial, and office uses to increase employment opportunities (Friend pers. comm.).

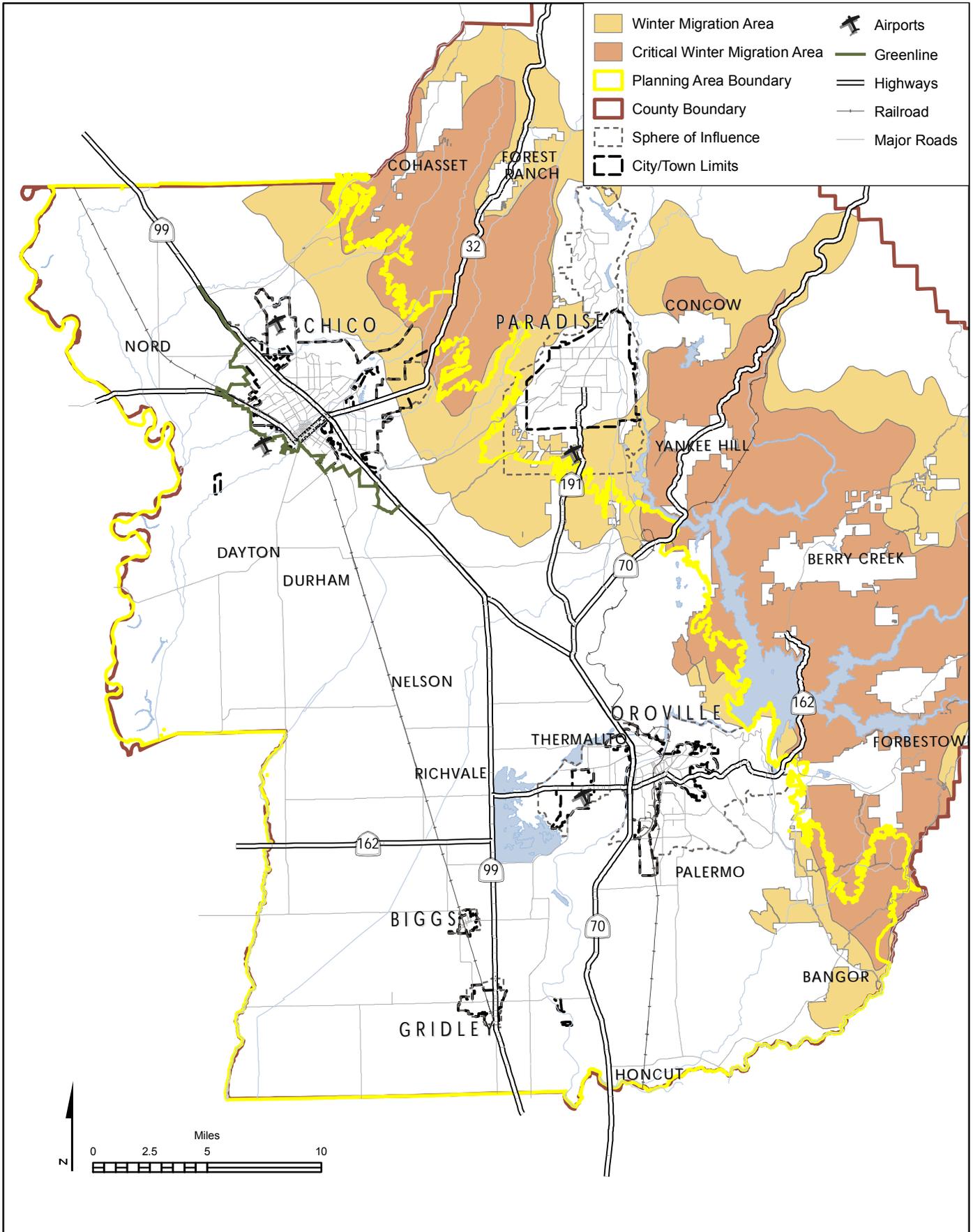
The City released a preferred land use alternative for its General Plan Update on June 22, 2009, which is shown in Figure 10-6. The preferred land use alternative establishes land use designations for parcels within the city limits and within the larger Plan Area for the General Plan Update. The preferred land use alternative adds a Downtown Mixed Use designation within the city limits and designates Commercial, Mixed Use, High Density Residential, and Light Industrial in areas outside the existing city limits along B Street and Highway 99. The preferred land use alternative also designates other land beyond the existing city limits for Agriculture, Agriculture Commercial, and Agriculture Industrial.

City of Chico

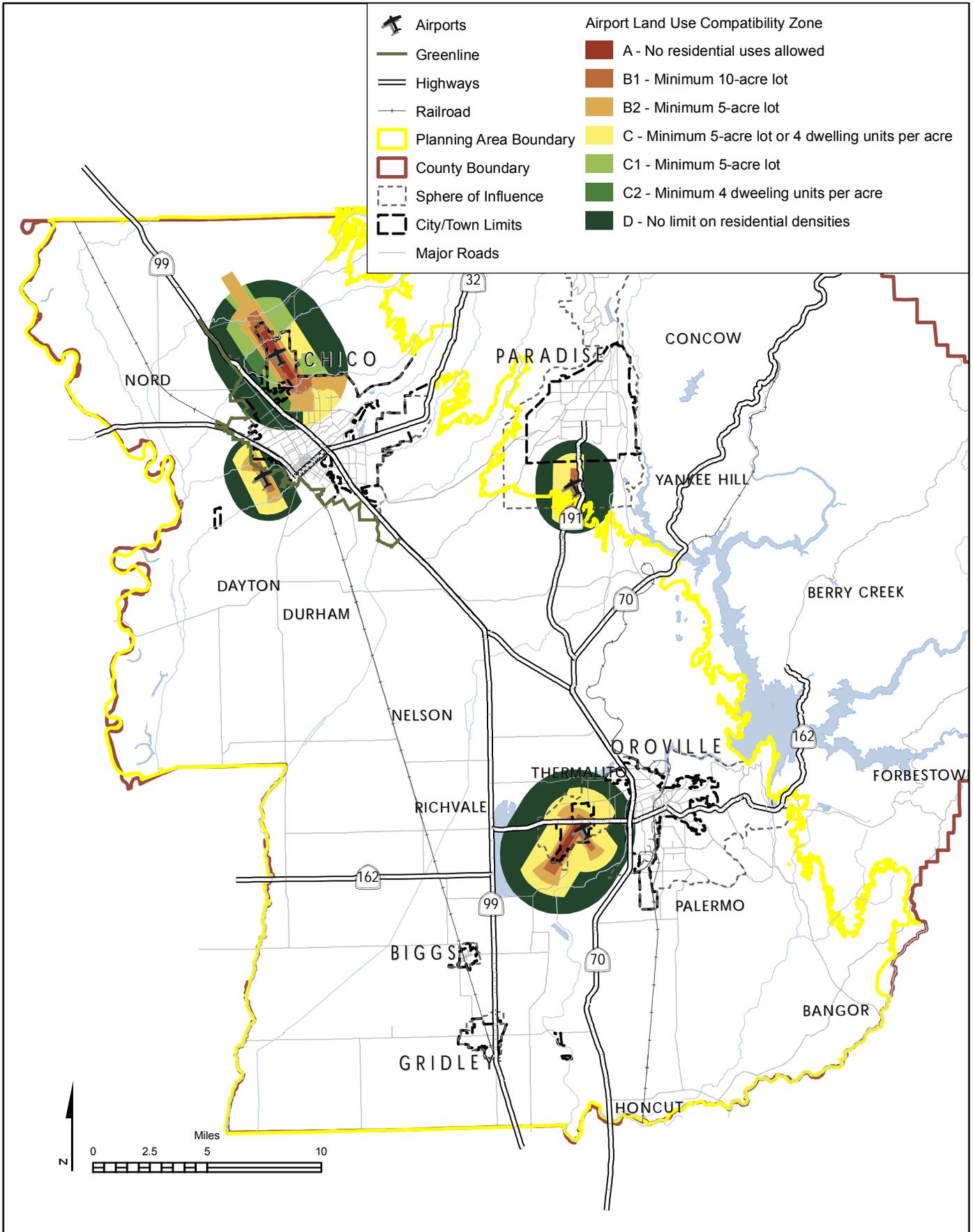
The City of Chico adopted its current General Plan in April 2010. The Plan's guiding policies are to promote orderly and balanced growth, conserve and protect resources, support a strong local economy, reinforce the unique identity of Chico, foster complete neighborhoods, promote a multi-modal transportation system, encourage sustainability, and facilitate a healthy community. The general plan's horizon year is 2030 and plans for land use for areas within the SOI.

The Chico General Plan land use map is shown in Figure 10-7 and includes the following land use designations:

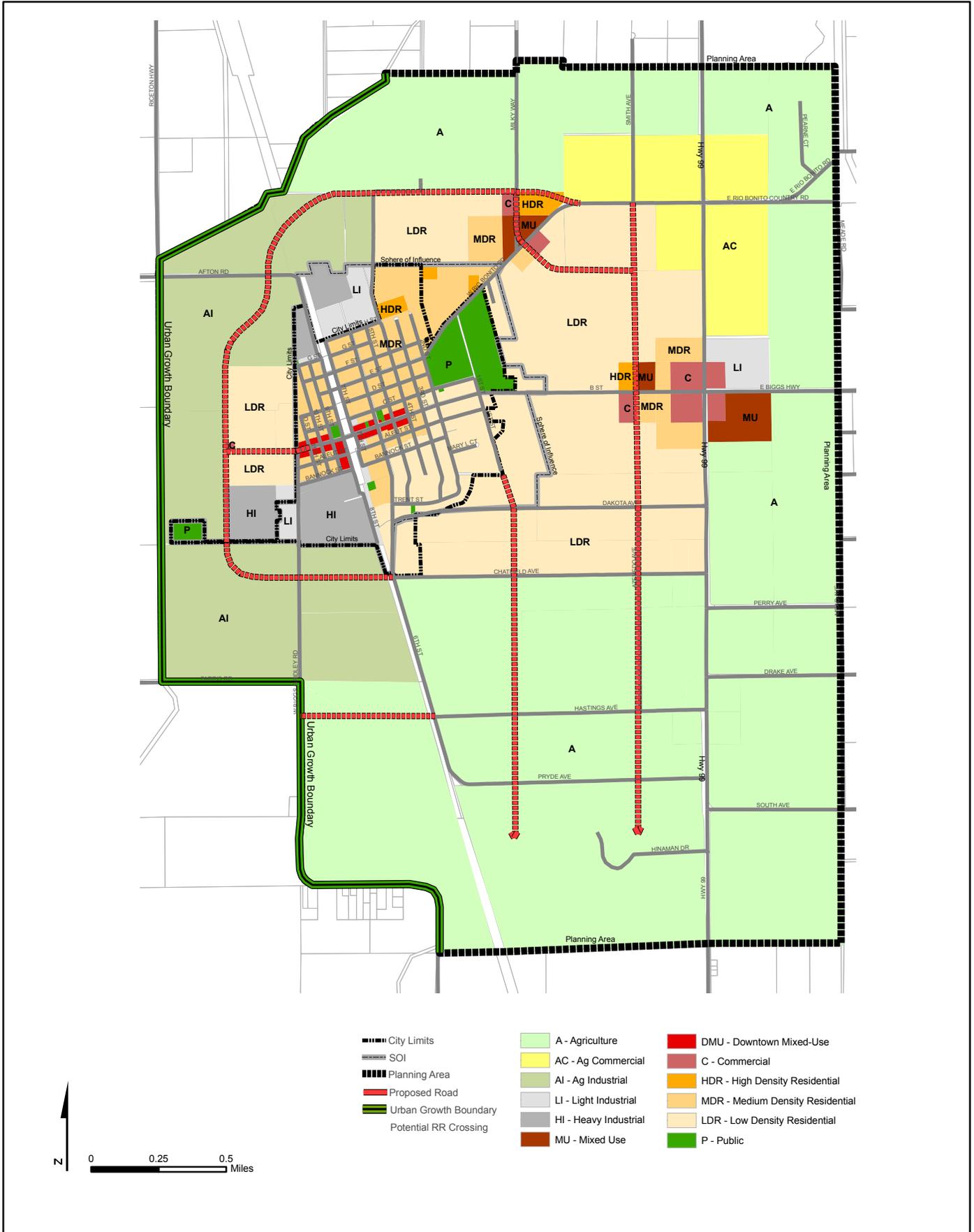
- **Primary Open Space.** This designation protects sensitive habitats in perpetuity.
- **Secondary Open Space.** This designation permits recreational uses.



Butte County Deer Herd Migration Overlay Area
Figure 10-3

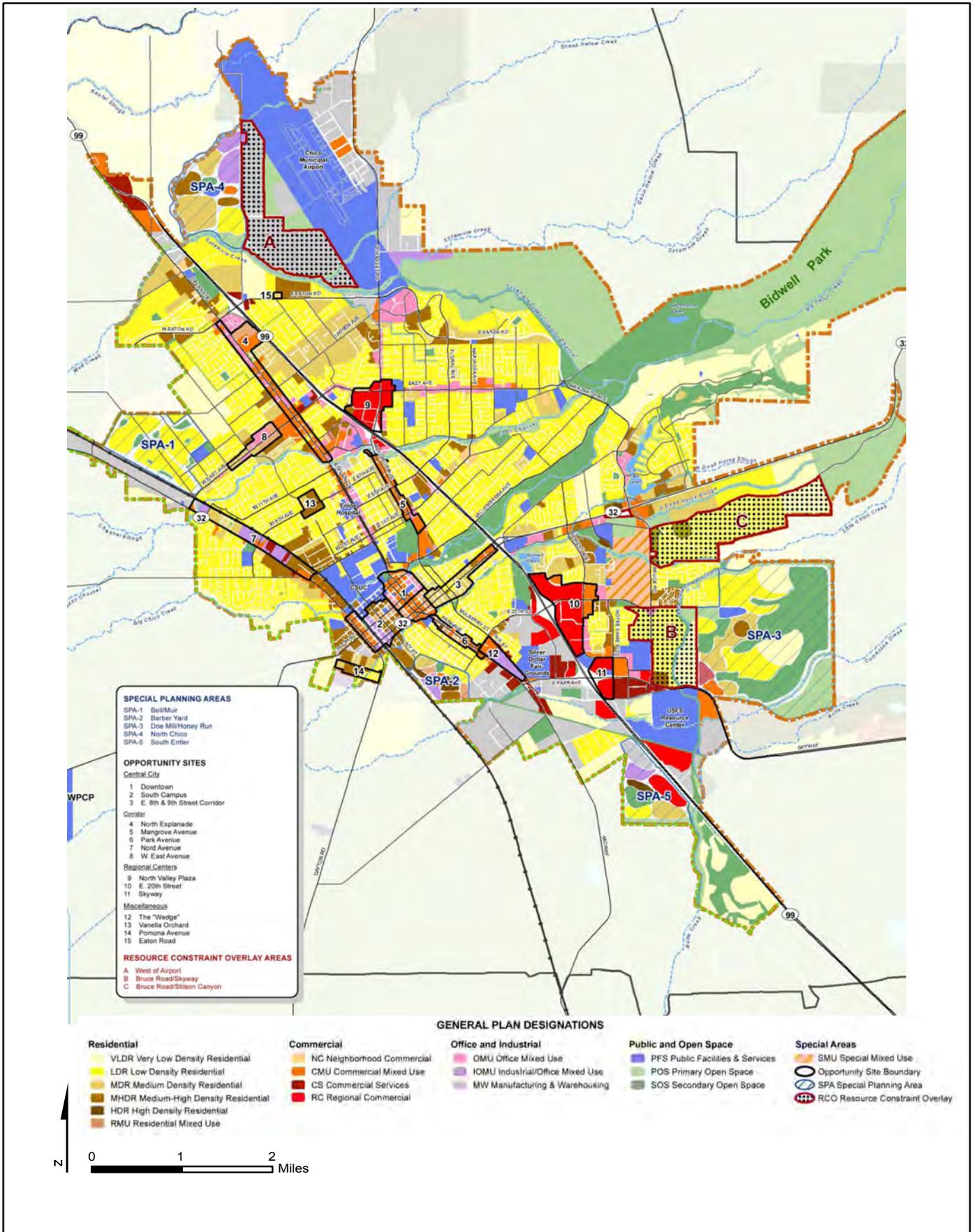


Butte County ALUCP Zones
Figure 10-4



Biggs General Plan Preferred Land Use Alternative
Figure 10-6





Chico General Plan Land Use Map
Figure 10-7

- **Very Low Density Residential.** This designation permits single-family homes at rural densities of 0.2 to 2 dwelling units per acre.
- **Low Density Residential.** This designation permits single-family homes and duplexes at densities of 2.1 to 7 dwelling units per acre.
- **Medium Density Residential.** This designation permits single-family homes, duplexes, apartments, townhomes, and condominiums at densities of 7.1 to 14 units per acre.
- **Medium-High Density Residential.** This designation permits multi-family homes at densities of 14 to 22 dwelling units per acre.
- **High Density Residential.** This designation permits multi-family homes at densities of 20 to 70 dwelling units per acre.
- **Residential Mixed Use.** This designation permits residential, commercial, and office uses at densities of 10 to 20 dwelling units per acre and a maximum FAR of 2.5.
- **Neighborhood Commercial.** This designation permits a mix of uses including residential, commercial, and office at densities of 6 to 22 dwelling units per acre and a FAR of 0.2 to 1.5.
- **Commercial Mixed Use.** This designation permits residential, commercial, and office uses at densities of 6 to 22 dwelling units per acre and a FAR of 0.25 to 1.
- **Commercial Service.** This designation permits commercial uses at a FAR of 0.2 to 0.5.
- **Regional Commercial.** This designation permits regional commercial uses at a FAR of 0.2 to 2.
- **Office Mixed Use.** This designation permits residential, office, and commercial uses at densities of 6 to 24 dwelling units per acre and a FAR of 0.3 to 2.
- **Industrial Office Mixed Use.** This designation permits light industrial and office as the predominate uses. Commercial and other support services are also allowed. The allowed FAR is 0.25 to 1.5. Live-work uses are also permitted as a special use at densities of 7 to 14 dwelling units per acre.
- **Manufacturing and Warehouse.** This designation permits industrial uses such as manufacturing and agricultural processing at a FAR of 0.2 to 0.75.
- **Public Facilities and Services.** This designation permits public uses such as government offices, schools, airports, and hospitals. The maximum FAR is 1.
- **Special Mixed Use.** This designation encourages pedestrian-oriented neighborhoods at a residential density of 7 to 35 dwelling units per acre.
- **Special Planning Area.** This designation identifies growth areas that require additional planning.
- **Resource Constraint Overlay.** This overlay identifies significant environmental resources. Proposed development within this overlay is subject to additional studies to determine the permitted location and intensity of development.

City of Gridley

The City of Gridley General Plan consists of nine elements that were adopted in December 2009, and covers a planning period through 2030. The Plan designates land uses within the city limits, SOI, and a Planned Growth Area. The Planned Growth Area, north of the city limits, is where the majority of

new growth is expected to occur. The general plan includes policies that promote a safe and healthy living environment, provide adequate and well-maintained public facilities and services, maintain a rural atmosphere, preserve agricultural land, provide jobs, maintain the quality of life, and minimize restrictions on the use of private property.

The Gridley General Plan land use map is shown in Figure 10-8 and includes the following land use designations:

- **Agriculture.** This designation permits large- and small-scale agricultural uses.
- **Agricultural Industrial.** This designation permits manufacturing, storage, processing, and other similar uses that support agriculture. The maximum lot coverage for this designation is 80%.
- **Open Space.** This designation provides for habitat protection, passive recreation, bicycle/pedestrian pathways, landscape buffers, community gardens, and other similar uses.
- **Park.** This designation permits active and passive recreation with a maximum lot coverage of 20%.
- **Residential, Very Low Density.** This designation permits single-family homes and second units on large lots at densities of 0.5 to 2 dwelling units per acre.
- **Residential, Low Density.** This designation permits single-family homes and second units at densities of 2 to 4 dwelling units per acre.
- **Residential, Medium Density.** This designation permits single-family homes, attached homes, second units, duplexes, and other similar uses at densities of 5 to 8 dwelling units per acre.
- **Residential, High Density 1.** This designation permits small-lot single-family homes, attached units, duplexes, apartments, condominiums, and townhomes at densities of 9 to 15 dwelling units per acre.
- **Residential, High Density 2.** This designation permits single-family homes, duplexes, apartments, condominiums, townhomes, and other similar uses at densities of 15 to 30 dwelling units per acre.
- **Commercial.** This designation permits a range of commercial uses with a maximum lot coverage of 90%.
- **Neighborhood Center Mixed Use.** This designation permits retail, office, residential, and public and quasi-public uses with a maximum lot coverage of 90%.
- **Downtown Mixed Use.** This designation permits commercial, office, public and quasi-public, and residential uses with a maximum lot coverage of 100%. Residential units are permitted at densities of 10 to 30 units per acre.
- **Industrial.** This designation permits light industrial uses with a maximum lot coverage of 80%.
- **Public.** This designation permits public and quasi-public uses at a maximum lot coverage of 60%.
- **Urban Reserve.** This overlay indicates where future development is anticipated beyond the 2030 horizon of the Gridley General Plan.

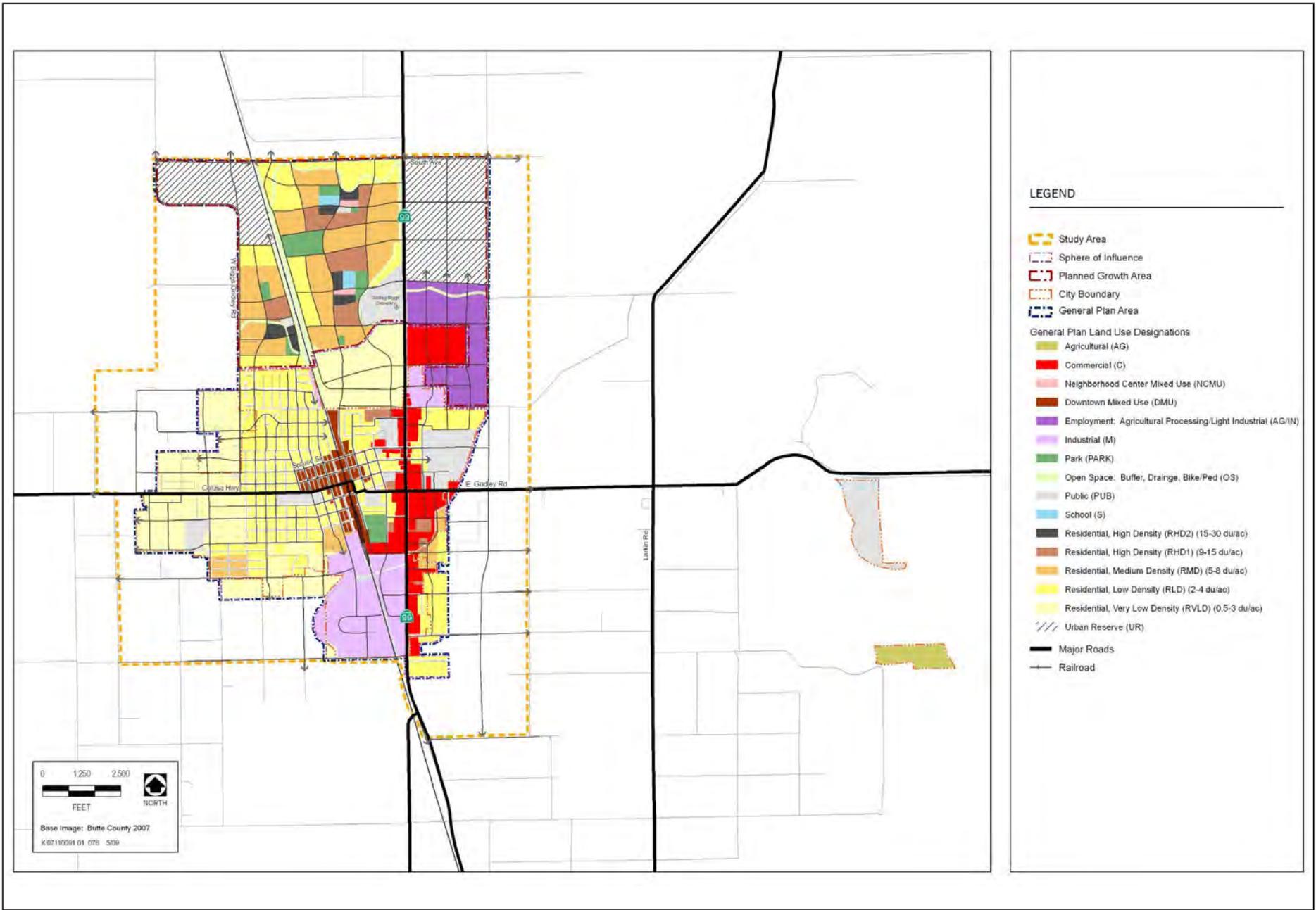


Figure 10-8
Gridley General Plan Land Use

City of Oroville

The City of Oroville adopted an updated General Plan in June 2009. The jurisdictional boundaries described in the general plan are the city limits, the SOI, and the Plan Area. The SOI is considered to be the ultimate service area of the City and the area that the City anticipates it will annex at some point in the future.

Additionally, the City of Oroville is preparing to initiate a targeted update of its 2030 General Plan. This update will serve to adjust Oroville's General Plan to both changing economic circumstances and to new trends in development and transportation. Specifically, the targeted General Plan Update will seek to: adjust Oroville's SOI; review and revise existing mixed-use designations in outlying areas; calibrate land uses in the community of Thermalito; support complete streets and walkability; spur economic development; and ensure the 2030 General Plan is compliant with recent State statutes and directives.

The targeted update of the Oroville 2030 General Plan will leave intact its guiding principles, which address livability, enhanced mobility, a vibrant local economy, natural resources and the environment, recreation, community infrastructure, health and safety, and an involved citizenry.

The Oroville 2030 General Plan land use map is shown in Figure 10-9 and includes the following land use designations:

- **Resource Management.** This designation is applied to areas that are primarily devoted to agricultural use, including grazing, crop production, and animal husbandry, and to areas that may contain significant resources, such as wetlands.
- **Environmental Conservation and Safety.** This designation denotes areas with significant wildlife habitat and/or physical development constraints. No subdivisions of land are permitted for properties completely covered by an Environmental Conservation and Safety designation unless acceptable evidence is provided by the developer which demonstrates that the classification is not appropriate for the entire site. The Environmental Conservation and Safety overlay allows for one residential unit on each existing legal parcel, provided there are suitable building site(s).
- **Parks and Recreation.** This designation allows public parks, golf courses, and other appropriate recreational uses.
- **Rural Residential Density.** This designation encourages large lot development with a rural character, generally on the urban edge, at densities of up to 0.2 dwelling units per net acre (i.e. one unit for every 5 acres).
- **Very Low Density Residential.** This designation permits single-family homes at densities of 0.2 to 1 dwelling unit per net acre.
- **Low Density Residential.** This designation allows single-family homes at densities of 1 to 3 dwelling units per net acre.
- **Medium Low Density Residential.** This designation permits single-family detached homes on ¼-acre lots at densities of 3 to 6 dwelling units per net acre.
- **Medium Density Residential.** This designation permits small-lot single-family attached homes, duplexes, and townhomes at densities of 6 to 14 dwelling units per net acre.

- **Medium High Density Residential.** This designation permits townhomes and apartments at densities of 14 to 20 dwelling units per net acre.
- **High Density Residential.** This designation permits townhouses, apartments, and condominiums at 20 to 30 units per net acre.
- **Mixed Use.** This designation permits a mix of residential, commercial, and offices uses at densities of 10 to 30 dwelling units per net acre and a maximum FAR of 0.4.
- **Retail and Business Services.** This designation permits business activities that offer goods and services to the community and allows for a maximum FAR of 0.4, except in the Historic Downtown where an FAR of 2 is allowed.
- **Office.** This designation permits business and professional uses to be developed with a maximum FAR of 0.4.
- **Industrial.** This designation permits general manufacturing at a maximum FAR of 0.4.
- **Airport Business Park.** This designation allows for light manufacturing, limited industrial, food processing, wholesale trade, and offices. Retail businesses and public services are permitted to a lesser extent and would generally be allowed as an accessory use. The allowed FAR ranges from 0.2 to 0.35.
- **Public Facilities and Services.** This designation permits schools, governmental offices, airports, and other facilities that have a unique public character.
- **State Water Project.** This designation refers to land areas of the State-owned Oroville-Thermalito Complex.
- **Unique Agriculture Overlay.** This designation allows agricultural support and specialty agriculture uses to protect and promote small-scale agriculture, regardless of whether such uses are allowed in the underlying designation. Such uses include wineries, road-side stands, farm-based tourism, and ancillary restaurants and/or stores.
- **Oro Bay Specific Plan Area.** The Oro Bay Specific Plan will determine the mix of uses that will occur on this 409-acre site. This Specific Plan will limit development to not more than 2,400 dwelling units of mixed residential types. Commercial areas for this Specific Plan are limited to 5 acres of Retail and Business Serving designation to be located along the Highway 162 frontage. The Specific Plan will specify a maximum permissible FAR of 0.4 for the proposed retail use.
- **Rio d'Oro Specific Plan Area.** The Rio d'Oro Specific Plan will determine the mix of uses that will occur on this 647-acre site. This Specific Plan will limit development to not more than 2,700 dwelling units of mixed residential types. Commercial areas for this specific plan are limited to 30 acres of Retail and Business Serving designation to be located along the northern portion of the Specific Plan area. The Specific Plan will specify a maximum permissible FAR of 0.4 for the proposed retail use.
- **South Ophir Specific Plan Area.** The South Ophir Specific Plan will determine the mix of uses that will occur on this 784-acre site. A primary goal of the Specific Plan will be to provide a mix of uses that includes a business/technology park complex for clean industry. The amount of development to be included in this area is not outlined in the Oroville General Plan.

Specific Plans

A specific plan is fundamentally a tool for the “systematic implementation” of a general plan, typically within a defined area. Because a general plan must address policy issues on a broad scale throughout an agency’s jurisdiction, it lacks the specificity needed to deal with a smaller area. Although a specific plan must be consistent with the general plan that governs its jurisdiction, it can address infrastructure, land use, and financial issues in a more appropriately focused and detailed manner.

Specific plans represent an opportunity for a local government to protect environmental resources and implement the relevant general plan for an identified area of the community. A specific plan contains the regulations, conditions, programs, and legislation necessary to implement each of the seven mandated elements of a general plan. It offers a unique opportunity to combine zoning regulations, capital improvement programs, detailed site development standards, and other regulatory schemes into one document tailored to the needs of a particular area.

North Chico Specific Plan

The North Chico Specific Plan was adopted by the Butte County Board of Supervisors in January 1995. The Specific Plan area encompasses 3,590 acres of unincorporated county land bounded by Sycamore Creek to the south, Highway 99 to the west, Rock Creek to the north, and the Chico Municipal Airport to the east. The Board of Supervisors initiated the preparation of the Specific Plan to comprehensively respond to development proposals and incorporate them into a concept of land use for the area, while evaluating and providing for area-wide solutions to drainage, circulation, and provision of public services. The majority of the Specific Plan is designated for residential uses, and particularly low density suburban homes. The Specific Plan is expected to generate approximately 2,800 new dwelling units, approximately 580 acres of open space and parks, 380 acres of industrial uses, 50 acres of commercial and office uses, and 65 acres of public/quasi-public uses. Although development impact fees have been adopted to help fund various improvements within the Specific Plan area, the funding mechanisms necessary to pay for all needed infrastructure have yet to be established.

Stringtown Mountain Specific Plan

The Stringtown Mountain Specific Plan was adopted by the Butte County Board of Supervisors in September 1994. The Specific Plan addresses design criteria and development standards for the future development of a health resort and residential community in the foothills east of Oroville, located at Highway 162 and Forbestown Road. The Specific Plan includes approximately 125 acres of residential uses, 13 acres for a resort, 3 acres of commercial uses, 28 acres of park and open space, and 1 acre for a fire station. The development foreseen in the Specific Plan has encountered obstacles to its implementation, primarily due to issues with provision of sewer service. The proponent is working to overcome these constraints and develop the project. County General Plan 2030 also calls for a significant expansion of this Specific Plan area to the northeast, as indicated through the Specific Plans to be Developed Overlay.

Northwest Chico Specific Plan

The Northwest Chico Specific Plan was adopted by the Chico City Council in December 2005. The Specific Plan area encompasses 700 acres bounded to the north and northwest by Mud and Sycamore Creeks, to the east by Hicks Lane, and to the south by Eaton Road. The Specific Plan

includes land within the city limits as well as land within unincorporated Butte County. The goals of the Specific Plan include creating new well-connected and multi-modal residential neighborhoods that include a mix of uses. In particular, the Plan includes 360 acres of single-family residential uses, 160 acres of multi-family residential uses, 24 acres of mixed uses, 65 acres of parks and open space, and 6 acres of public facilities and services.

10.1.2 Environmental Setting

Existing Land Use

This section provides an overview of the existing land use pattern within the Plan Area based on data provided by the Butte County Assessor's Office and BCAG in 2008. Table 10-1 shows the acreages of various existing land uses in the Plan Area, while Figure 10-10 illustrates existing land uses.

Table 10-1. Acreage of Existing Land Uses within the Plan Area

Land Use	Acres
Agriculture	392,030
Residential – Single-Family	61,950
Residential – Multi-Family	6,880
Commercial and Office	7,320
Industrial	2,500
Public/Quasi-Public	34,380
Tribal Lands	410
Vacant	41,140
Undefined	21,570

Source: Butte County Assessor's Office and Butte County Association of Governments unpublished data.

Agriculture

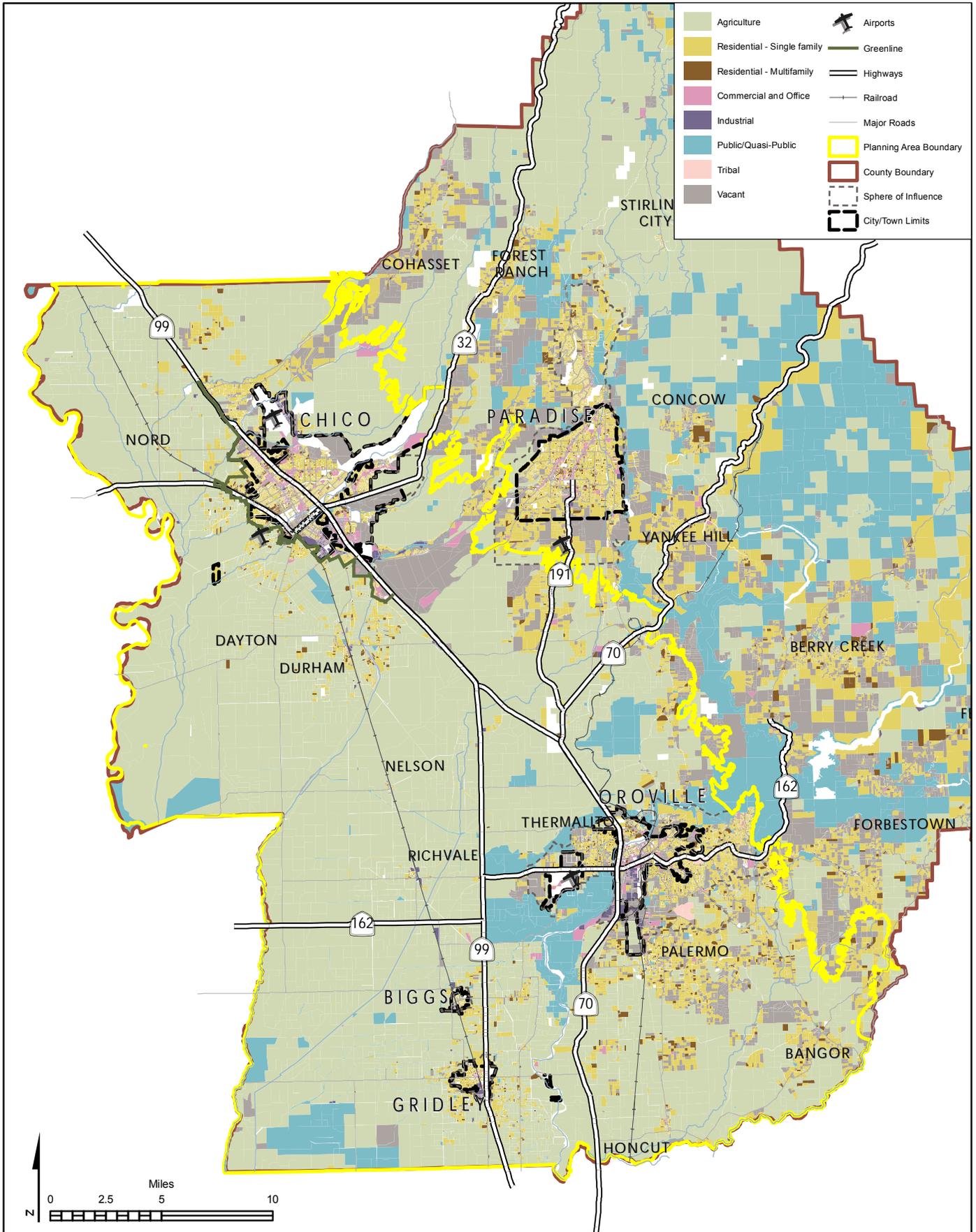
Agriculture is the dominant land use within the Plan Area, accounting for approximately 392,030 acres (69% of the Plan Area). Agricultural lands include field and row crops, orchards, rice, grazing, dry farming, and timber.

Single-Family Residential

Most households in the Plan Area are in single-family dwelling units. Single-family units are dispersed throughout the Plan Area on approximately 61,950 acres (11% of the Plan Area). This acreage includes large parcels that have only one house on them.

Multi-Family Residential

Multi-family residential development includes any housing type with more than one unit in a building, including duplexes, triplexes, fourplexes, apartment buildings, and condominiums. There are approximately 6,880 acres (1% of the Plan Area) of multi-family residential uses interspersed throughout much of the same residential areas as the single-family units within the Plan Area.



Commercial and Office

Commercial uses include retail, office, service, and lodging uses. There are 7,320 acres of land (1% of the Plan Area) within the Plan Area in commercial use. Commercial and office uses are concentrated within the cities and in unincorporated communities.

Industrial

Existing industrial uses include light manufacturing, heavy industrial, service and repair, processing, and warehousing, as well as industrial uses related to timber, oil, and gas rights. There are approximately 2,500 acres (0.4% of the Plan Area) in industrial use within the Planning Area. Industrial uses are primarily located near the cities, along major transportation corridors, and in timber-producing regions.

Public/Quasi-Public

The Public/Quasi-Public category encompasses several types of uses, including parcels owned by federal, State, County, and municipal agencies; parcels owned by special districts; and parcels that accommodate civic and institutional uses such as churches, hospitals, and utilities. Public and quasi-public uses account for approximately 34,260 acres (6% of the Plan Area) within the Plan Area.

Tribal Lands

There are two tribal reserves in the Plan Area comprising approximately 410 acres in the Oroville area. Both reserves are anchored by casinos. Gold Country Casino occupies about 90 acres located off of Olive Highway and is operated by the Tyme Maidu of Berry-Creek Rancheria. The Feather Falls Casino and tribal reserve lands occupy over 300 acres off Ophir Road. The casino is operated by the Concow Maidu of Mooretown Rancheria.

Vacant Land

For the purposes of this EIS/EIR, vacant land is defined as privately-owned land that is designated for development or agricultural production but which currently has no structure or building improvement and is not used for active agricultural production. Vacant land is distributed throughout the Plan Area and comprises 41,140 acres (7% of the Plan Area). The average vacant parcel size is approximately 6 acres.

10.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for land use planning and consistency in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).¹ The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

¹ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

10.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on land use planning and consistency are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on land use planning and consistency.

In adopting the EIRs for the local general plans, each Local Agency determined the programmatic impacts on land use planning and consistency would be at or mitigated to a less-than-significant level through the implementation of general plan policies and the adoption of identified mitigation measures. It is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified in the general plan EIRs, such that impacts would be adequately mitigated. Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on land use planning and consistency could occur primarily during construction or maintenance of these activities.

10.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

10.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. Under the Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). These include residential, commercial, and industrial development, as well as construction,

maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on land use and consistency associated with conservation strategy and conservation measures would not occur.

Impact LU-1: Physically divide an established community (NEPA: no impact; CEQA: no impact)

Under Alternative 1, the BRCP would neither be adopted nor implemented. Because development would occur as planned for and allowed under the Local Agency's general plans, land use impacts would be the same as those identified for the general plans. Therefore, in regard to the physical division of established communities, the determined land use impacts of the general plans for the Local Agencies are incorporated by reference. The environmental review performed for all of these plans found no significant land use impacts relating to the physical division of existing communities. Since this alternative would not change development activity already allowed by these general plans, there would be no new or additional activity that would serve to directly divide established communities. Although this EIS/EIR covers a longer planning horizon than the local general plans, it is anticipated that the nature of longer-term future development activity would not change, and would therefore also not divide established communities. Additionally, because Alternative 2 would not serve to prevent or alleviate community division, the failure to adopt and implement the BRCP under Alternative 1 would not result in greater division than would occur with adoption.

NEPA Determination: Alternative 1 would not change development activity identified within the Local Agencies' general plans. Therefore, there would be no impact. No mitigation is required.

CEQA Determination: Alternative 1 would not change development activity identified within the Local Agencies' general plans. There would be no impact. No mitigation is required.

Impact LU-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (NEPA: no impact; CEQA: no impact)

As noted in the discussion for Impact LU-1 above, under Alternative 1, the BRCP would neither be adopted nor implemented, and the land use impacts resulting from implementation of the Local Agencies' general plans would remain because development would continue as allowed by these plans. Therefore, in regard to conflicts with land use plans, policies, and regulations, the determined land use impacts of the general plans for the Local Agencies are incorporated by reference. The environmental review performed for the Local Agencies' general plans found no significant impacts relating to conflicts with land use plans, policies, and regulations. Because this alternative would not change development activity already allowed by these or future general plans, there would be no new or additional activity that would serve to conflict with land use plans, policies, and regulations. Although no actual conflicts with applicable land use plans would occur, fragmentation of habitat and conservation and agricultural designated areas could be exacerbated by not adopting the BRCP under Alternative 1. This could result in incompatible land uses, such as agriculture adjacent to urban or urban adjacent to conservation areas.

NEPA Determination: Alternative 1 would not change development activity identified within the Local Agencies' general plans. There would be no impact. No mitigation is required.

CEQA Determination: Alternative 1 would not change development activity identified within the Local Agencies' general plans. There would be no impact. No mitigation is required.

Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan (NEPA: no impact; CEQA: no impact)

As noted in the discussion for Impact LU-1 above, under Alternative 1, the BRCP would be neither adopted nor implemented, and the land use impacts resulting from implementation of the Local Agencies' general plans would remain because development would continue as allowed by these plans. Therefore, in regard to conflicts with applicable HCPs or NCCPs, the determined land use impacts of the general plans for the Local Agencies are incorporated by reference. Environmental review for these general plans found no significant impacts in regard to this criterion.

Since adoption and implementation of the BRCP would not occur under Alternative 1, applicable conservation areas, practices, and policies would continue to be dictated by any existing or future HCPs or NCCPs in the area, as well as by other plans, policies, and regulations pertaining to species protection and habitat conservation. Therefore, Alternative 1 would not result in any new actions or policies that could conflict with any of the above.

NEPA Determination: Alternative 1 would not result in any new actions or policies that could conflict with land use plans, policies, and regulations. There would be no impact. No mitigation is required.

CEQA Determination: Alternative 1 would not result in any new actions or policies that could conflict with land use plans, policies, and regulations. There would be no impact. No mitigation is required.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. This would include the issuance of permits to facilitate covered activities and the implementation of a conservation strategy, including guidance for the acquisition of land for conservation purposes and the adoption of standard practices for habitat restoration, species protection, ecosystem preservation, and other conservation activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operation-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics including small projects or infill projects.

Impact LU-1: Physically divide an established community (NEPA: less than significant; CEQA: less than significant)

Under Alternative 2, adoption and implementation of the BRCP would occur. Nevertheless, land use designations, as well as approval and standards for development of land uses and infrastructure, would continue to be ultimately governed by the land use components of the general and specific plans of the Local Agencies. Therefore, in regard to the physical division of established communities, the determined land use impacts of the Local Agencies' general plans are incorporated by reference. The environmental review performed for all of these plans found no significant land use impacts relating to the physical division of existing communities. Although this EIS/EIR covers a longer planning horizon than the local general plans, it is anticipated that the nature of longer-term future development activity would not change and would, therefore, not divide established communities.

The proposed BRCP itself would serve to regulate and direct the policies and activities described above, and would affect the manner in which particular areas are developed pursuant to their designated land uses. However, the BRCP itself would generally not result directly in the construction or demolition of significant structures. Because implementation of the Local Agencies' general plans would not cause significant land use impacts relating to the physical division of existing communities, and the BRCP would not result in construction or demolition activities not anticipated by these plans, Alternative 2 would not physically divide established communities through construction or demolition activities.

Although the BRCP does not identify the specific locations of lands that will be acquired for conservation purposes, it is anticipated that they will be located primarily on undeveloped or agricultural lands where there are existing special status species habitats or populations, or with high connectivity to existing habitat and conservation areas. Such areas would typically be non-urbanized and outside of established communities and, therefore, it is not expected that the BRCP would affect the cohesiveness of established communities.

For existing communities that include intervening areas of open space, any access restrictions on those lands could create physical barriers; however, the BRCP incorporates provisions that indicate that these sort of access restrictions are not appropriate in areas with existing development. Specifically, AMM 7, Design Developments to Minimize Indirect Impacts at Urban-Habitat Interfaces, states the following (*italics are used to emphasize the key language*).

Where residential, commercial, public, and industrial facility and agricultural services facility projects are implemented adjacent to natural communities, urban-habitat interface elements will be incorporated into project design to minimize the indirect impacts of the development on adjacent habitat areas. Indirect impacts on adjacent habitat result from human activities that can result in noise and visual disturbances at urban-habitat interfaces that diminish the ability of covered and other native wildlife to use the habitat, increased numbers of pets (e.g., dogs, cats) in habitats that can result in harassment and mortality of covered and other native wildlife species, increased levels of direct habitat disturbances associated with increased human access to habitats (e.g., destruction of vegetation and injury or mortality of wildlife associated with use of off-road vehicles in habitat), and planting of invasive, nonnative plants. Where agricultural lands are protected under the BRCP that support habitat for covered species that are not tolerant of human disturbances, urban-habitat interface elements will also be incorporated into project design to minimize the impacts of development on these agricultural habitat lands. *This AMM does not apply to residential, commercial, public, and industrial facility developments constructed adjacent to existing developed and agricultural lands because these lands either do not support covered species habitat and/or are currently subject to high levels of existing human-related disturbances.*

This indicates that although access restrictions may be applied to other conservation lands, their use would be precluded in areas adjacent to existing communities and development. Therefore, even in those limited instances where physical division of existing communities might have occurred, the BRCP would forgo the implementation of conservation strategies that would create such divisions. By focusing conservation efforts in non-urbanized areas, the BRCP would avoid the creation of physical divisions within established communities.

NEPA Determination: Alternative 2 would not result in construction or demolition activities not anticipated by the Local Agencies' general plans and would focus conservation efforts related to the conservation strategy in non-urbanized areas. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 would not result in construction or demolition activities not anticipated by the Local Agencies' general plans and would focus conservation efforts related to the conservation strategy in non-urbanized areas. The impact would be less than significant. No mitigation is required.

Impact LU-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (NEPA: less than significant; CEQA: less than significant)

As discussed above, under Alternative 2, land use and development would continue to be ultimately governed by the land use components of the Local Agencies' general and specific plans. The BRCP would serve to guide future land use decisions with regard to both potential land use changes and the manner in which particular areas are developed pursuant to their designated land uses. Therefore, in regard to conflicts with land use plans, policies, and regulations, the determined land use impacts of the Local Agencies' general plans are incorporated by reference. The environmental review performed for all of these plans found no significant land use impacts relating to conflicts with land use plans, policies, and regulations. Although this EIS/EIR covers a longer planning horizon than the local general plans, it is anticipated that the nature of longer-term future relationships to land use plans would not change. In addition, while the Local Agencies will likely amend their general plans during the planning horizon of the BRCP, it is speculative to consider the likely contents of those plans to determine potential conflicts.

As noted above, the BRCP outlines a conservation strategy that includes the acquisition and management of land for conservation purposes, and identifies target areas for acquisition of conservation lands, but does not identify specific parcels for such uses. Therefore, it is possible that implementation of the BRCP will lead to the acquisition and/or use of land for conservation purposes at locations that are designated for development by a County or city general plan. However, the BRCP does not designate specific lands for conservation, and it does not have the land use authority to do so. Therefore, the BRCP does not reduce or affect the ability of the County or cities to regulate land use through their general plans. Any decisions regarding the use of lands for conservation purposes would be made by individual willing landowners, just as they would without the BRCP in place and within the context of the local general plans. Furthermore, on a larger scale, the BRCP would actually be supportive of applicable land use plans, policies, and regulations by allowing their implementation to more efficiently and effectively comply with conservation directives at the local, state, and federal levels. Finally, by adopting the BRCP, it is anticipated fragmentation of habitat and conservation and agricultural designated areas could be reduced, as

compared to Alternative 1. This could result in compatible land uses being adjacent to each other, such as agriculture adjacent to conservation areas and urban areas adjacent to other urban areas. Alternative 2 would thereby help to avoid and mitigate environmental effects.

NEPA Determination: Alternative 2, particularly the conservation strategy, would not reduce or affect the ability of the Local Agencies to regulate land use through the general plans. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2, particularly the conservation strategy, would not reduce or affect the ability of the Local Agencies to regulate land use through the general plans. The impact would be less than significant. No mitigation is required.

Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan (NEPA: less than significant; CEQA: less than significant)

Currently, no HCPs or NCCPs exist within the Plan Area, and the BRCP would itself establish and serve as the HCP and NCCP for the portions of the county that it covers. The only conservation plan that overlaps with the Plan Area is that for the Sacramento River, namely, the Anadromous Fish Restoration Program. This conservation plan will continue to govern in the areas where it is applicable (i.e., the Sacramento River). For those areas that overlap with the Plan Area, the Anadromous Fish Restoration Program would supersede the BRCP, which is not itself intended to address activities that could affect fish in the river. Although the BRCP would defer to the existing regional conservation plan for the Sacramento River, it would serve as the principal regional conservation planning document for all other portions of the Plan Area. In addition, there is a new HCP (possibly NCCP) effort underway for DWR and the Central Valley Flood Improvement Act on the Feather River. It will likely be primarily instream, between levee work, similar to that of the Anadromous Fish Restoration Program. However, this Feather River plan is not completed, thus no conflict exists between the plan and the BRCP.

In regard to neighboring HCPs and NCCPs, a planning effort for the Yuba Sutter Regional Conservation Plan (YSRCP), which serves as an HCP and NCCP, is currently underway. The YSRCP is still in the early stages of development, so there is no draft plan available to review. Nevertheless, the BRCP strives for compatibility with existing and future neighboring HCPs and NCCPs. The conservation strategy detailed in Chapter 5 of the BRCP includes directives for the BRCP to both consider its relationship to existing conservation areas and to coordinate its land acquisition activities with those of neighboring conservation plans, as well as with the goals of statewide conservation programs. Moreover, by working closely with state and federal regulatory agencies (e.g., the CDFW and the USFWS) to craft conservation approaches, secure approvals, and acquire appropriate conservation lands, the BRCP would further ensure its compatibility with other conservation plans.

NEPA Determination: As a result of Alternative 2's deference to the Anadromous Fish Restoration Program and directives to coordinate land acquisition activities with neighboring and statewide conservation plans, the impact would be less than significant. No mitigation is required.

CEQA Determination: As a result of Alternative 2's deference to the Anadromous Fish Restoration Program and directives to coordinate land acquisition activities with neighboring and statewide conservation plans, the impact would be less than significant. No mitigation measure is required.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance. The covered activities would be restricted to activities and geographic extents consistent with the land uses and development footprints of the reduced development alternatives of the general plans for the Local Agencies. This alternative assumes that the Local Agencies would all amend their general plans or otherwise adopt an alternative growth pattern consistent with the reduced or more compact development alternatives outlined in their respective general plan EIRs.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact LU-1: Physically divide an established community (NEPA: less than significant; CEQA: less than significant)

Alternative 3 would still result in the adoption and implementation of key BRCP components; therefore, the potential impacts of this alternative related to the division of established communities would be substantially similar to those discussed above for Alternative 2. The only pertinent difference is that the extent of covered activities would be reduced and, because of the reduced footprint of development, the extent of lands acquired or used for conservation purposes would be reduced. However, the nature of potential impacts would be the same as Alternative 2.

Environmental review of the reduced and/or concentrated development alternatives for the Local Agencies' general plans is incorporated by reference. The general plans determined that these alternatives would have substantially similar land use impacts as the adopted general plans, which themselves had less-than-significant land use impacts under this criterion. Although this EIS/EIR covers a longer planning horizon than the local general plans, it is anticipated that the nature of longer-term future development activity would not change and would, therefore, not divide established communities.

Reduced development, more restricted development footprints, and/or the greater concentration of development within current urbanized areas would not serve to create or exacerbate physical divisions within existing communities. Like Alternative 2, Alternative 3 would place the highest priority on the conservation of undeveloped and agricultural lands. Although a decreased development area might provide additional opportunities or land area for conservation, which could potentially occur within established communities, the same approach to prioritizing land acquisition outside of developed areas would nonetheless apply. By focusing conservation efforts in non-urbanized areas, Alternative 3 would avoid the creation of physical divisions within established communities.

NEPA Determination: Implementation of the Local Agencies' reduced development alternatives under Alternative 3 and focusing the conservation efforts in non-urbanized areas would result in impacts that are less than significant. No mitigation is required.

CEQA Determination: Implementation of the Local Agencies' reduced development alternatives under Alternative 3 and focusing the conservation efforts in non-urbanized areas would result in impacts that are less than significant. No mitigation is required.

Impact LU-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (NEPA: less than significant; CEQA: less than significant)

As with implementation of Alternative 2, land uses and development under Alternative 3 would continue to be ultimately governed by land use components of the general and specific plans of the Local Agencies. The core components of the BRCP adopted under Alternative 3 would still help guide future land use decisions and certain aspects of site design. Therefore, in regard to the conflicts with land use plans, policies, and regulations, the determined land use impacts of the Local Agencies' general plans are incorporated by reference. The environmental review performed for all of these plans found no significant land use impacts relating to conflicts with land use plans, policies, and regulations. Although this EIS/EIR covers a longer planning horizon than the local general plans, it is anticipated that the nature of longer-term future relationships to land use plans would not change. In addition, while the Local Agencies will likely amend their general plans during the planning horizon of the BRCP, it is speculative to consider the likely contents of those plans to determine potential conflicts.

As discussed for Alternative 2, it is possible that implementation of the BRCP would lead to the acquisition and/or use of land for conservation purposes at locations that are designated for development by a County or city general plan. However, the BRCP does not designate specific lands for conservation, and it does not have the land use authority to do so, so the BRCP does not reduce or affect the ability of the Local Agencies to regulate land use through their general plans. Any decisions regarding the use of lands for conservation purposes would be made by individual willing landowners. In addition, the BRCP would actually support applicable land use plans, policies, and regulations by allowing their implementation to more efficiently and effectively comply with conservation directives at the local, state, and federal levels.

Finally, although Alternative 3 includes development footprints that are smaller than called for in the Local Agencies' general plans, this alternative would include amendments to the Local Agencies' general plans to reflect the reduced development alternatives. Therefore, the covered activities under Alternative 3 would be consistent with the Local Agencies' general plans.

NEPA Determination: Alternative 3 would not reduce or affect the ability of the Local Agencies to regulate land use through the general plans. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 3 would not reduce or affect the ability of the Local Agencies to regulate land use through the general plans. The impact would be less than significant. No mitigation is required.

Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan (NEPA: less than significant; CEQA: less than significant)

Alternative 3 would still result in the adoption and implementation of key BRCP components; therefore, the potential impacts of this alternative under this criterion would be substantially similar to those discussed above for Alternative 2, and the entirety of the impact discussion for Alternative 2 under this criterion is likewise applicable to Alternative 3. Although Alternative 3 would result in a smaller development footprint and would result in the amendment of Local Agency general plans, this would not change the analysis or findings related to conflicts with other HCPs and NCCPs, and all other BRCP components (including those relating to deference to the Anadromous Fish Restoration Plan and ensuring compatibility with other conservation plans) would be unchanged from Alternative 2.

NEPA Determination: As a result of Alternative 3's deference to the Anadromous Fish Restoration Program and directives to coordinate land acquisition activities with neighboring and statewide conservation plans, the impact would be less than significant. No mitigation is required.

CEQA Determination: As a result of Alternative 3's deference to the Anadromous Fish Restoration Program and directives to coordinate land acquisition activities with neighboring and statewide conservation plans, the impact would be less than significant. No mitigation is required.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. Therefore, impact mechanisms for land use and consistency would be similar to those described for Alternative 2.

Impact LU-1: Physically divide an established community (NEPA: less than significant; CEQA: less than significant)

Alternative 4 would still result in the adoption and implementation of key BRCP components; therefore, the potential impacts of this alternative related to the division of established communities would be substantially similar to those discussed above for Alternative 2. The entirety of the impact discussion for Alternative 2 under this criterion is likewise applicable to Alternative 4. Like Alternative 2, Alternative 4 would place the highest priority on the conservation of undeveloped and agricultural lands. Although Alternative 4 would seek to acquire an expanded area of conservation lands, the expanded areas would be on land farmed for rice or lands currently in open space, which do not exist within established communities. By focusing conservation efforts in non-urbanized areas, Alternative 4 would avoid the creation of physical divisions within established communities.

NEPA Determination: Alternative 4 would not result in construction or demolition activities not anticipated by the general plans and would focus conservation efforts in non-urbanized areas. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 4 would not result in construction or demolition activities not anticipated by the general plans and would focus conservation efforts in non-urbanized areas. The impact would be less than significant. No mitigation is required.

Impact LU-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (NEPA: less than significant; CEQA: less than significant)

Since Alternative 4 would still result in the adoption and implementation of key BRCP components, the potential impacts of this alternative related to conflicts with land use plans, policies, or regulations would be substantially similar to those discussed above for Alternative 2. The entirety of the impact discussion for Alternative 2 under this criterion is likewise applicable to Alternative 4. As with Alternative 2, land uses and development under Alternative 4 would continue to be ultimately governed by land use components of the general and specific plans of the Local Agencies, which were not found to have significant impacts regarding conflicts with land use plans, policies, and regulations in their respective environmental reviews. In addition, conservation acquisitions and uses under this alternative would not reduce or affect the ability of the Local Agencies to regulate land use through their general plans because any decisions regarding the use of lands for conservation purposes would be made by individual willing landowners. Furthermore, Alternative 4 would support land use plans, policies, and regulations through regional coordination and coordination with state and federal agencies.

NEPA Determination: Alternative 4 would not reduce or affect the ability of the Local Agencies to regulate land use through the general plans. The impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 4 would not reduce or affect the ability of the Local Agencies to regulate land use through the general plans. The impact would be less than significant. No mitigation is required.

Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan (NEPA: less than significant; CEQA: less than significant)

Alternative 4 would still result in the adoption and implementation of key BRCP components; therefore, the potential impacts of this alternative under this criterion would be substantially similar to those discussed above for Alternative 2, and the entirety of the impact discussion for Alternative 2 under this criterion is likewise applicable to Alternative 4. Although Alternative 4 would seek to acquire or otherwise protect larger areas of particular species habitat, natural communities, or landcover types, this would not change the analysis or findings related to conflicts with other HCPs and NCCPs, and all other BRCP components (including those relating to deference to the Anadromous Fish Restoration Plan and ensuring compatibility with other conservation plans) would be unchanged from Alternative 2.

NEPA Determination: As a result of the Alternative 4's deference to the Anadromous Fish Restoration Program and directives to coordinate land acquisition activities with neighboring and statewide conservation plans, the impact would be less than significant. No mitigation is required.

CEQA Determination: As a result of the Alternative 4's deference to the Anadromous Fish Restoration Program and directives to coordinate land acquisition activities with neighboring and statewide conservation plans, the impact would be less than significant. No mitigation is required.

10.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for land use and consistency is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This analysis considered urban development projects, including roadway projects, and water supply development projects; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives. This analysis determines whether the covered activities not analyzed in previous environmental documents would result in a cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would have a cumulatively significant impact.

Given the nature of the BRCP and its action alternatives, the potential for cumulative land use impacts under the three significance criteria outlined and discussed above is limited. Most land use impacts occur at the level of a neighborhood, a community, a city, or some other sub-regional area. Because the BRCP would serve as a regional conservation planning document, the preceding analysis necessarily considered land use impacts at a regional scale and thereby addressed most impacts that could be cumulatively considerable in a geographic sense.

Similarly, although the BRCP and action alternatives would be implemented over a lengthy time period, land use impacts are primarily geographic in nature and would not generally be expected to accumulate over time. However, as explained in Chapter 3, this cumulative impact analysis does consider reasonably foreseeable projects in the Plan Area that are not considered part of the proposed action or alternative actions, including flood control facilities, water control facilities, emergency activities, agricultural land conversion, water transfers, operation of hydroelectric facilities, and the preparation of the YSRCP.

Cumulative Impacts

Alternative 1—No Action (No Plan Implementation)

Under Alternative 1, the BRCP would not be adopted and development would occur as currently planned for and allowed under existing and in-process Local Agency general and specific plans. Therefore, the determined cumulative land use impacts of the general plans for the Local Agencies are incorporated by reference. The environmental review performed for all of these plans found no significant cumulative land use impacts. Alternative 1 would not change development activity allowed by these general plans. In addition, since adoption and implementation of the BRCP would not occur, applicable conservation areas, practices, and policies would continue to be dictated by any existing or future HCPs or NCCPs in the area, as well as by other plans, policies, and regulations pertaining to species protection and habitat conservation, thus avoiding potential conflicts with such plans. However, the lack of the BRCP could exacerbate fragmentation of habitat and conservation and agricultural designated areas which could result in incompatible land uses, such as agriculture adjacent to urban or urban adjacent to conservation areas. But, because Alternative 1 would have no land use impacts, it would not contribute to a cumulatively significant land use impact.

Alternative 2—Proposed Action

Under Alternative 2, the BRCP would be adopted and implemented as described in Chapter 2, *Proposed Action and Alternatives*, and in the BRCP itself. The preceding analysis in Section 10.2.3, *Impacts and Mitigation Measures*, found that the land use impacts of Alternative 2 would be less than significant. Covered activities would be consistent with the County and city general plans, which were found to have no significant land use impacts in their respective EIRs. Meanwhile, the conservation strategy would: focus on non-urbanized areas; avoid established communities; not reduce or affect the ability of the County or cities to regulate land use through their general plans; support land use plans, policies, and regulations through regional coordination and coordination with state and federal agencies; and ensure consistency with the YSRCP. Other reasonably foreseeable projects would be subject to relevant land use plans, policies, and regulations, including the Local Agencies' general plans, which would ensure consistency with relevant planning documents. In addition, the nature of the types of reasonably foreseeable projects would not inherently divide established communities. Therefore, when considered in combination with other reasonably foreseeable projects, the impacts of Alternative 2 are deemed to be less than cumulatively considerable.

Alternative 3—Reduced Development/Reduced Fill

Under Alternative 3, all key components of the BRCP would be adopted and implemented as described above, in Chapter 2, *Proposed Action and Alternatives*, and in the BRCP itself; however, the permit term for the BRCP would be reduced from 50 years to 30 years, and the covered activities would be restricted to activities and geographic extents consistent with the land uses and development footprints of the reduced development alternatives of the general plans for the Local Agencies. As discussed in Section 10.2.3, *Impacts and Mitigation Measures*, Alternative 3 would have less-than-significant land use impacts that are substantially similar to those under Alternative 2. Therefore, the cumulative impacts analysis for Alternative 2 likewise applies to Alternative 3, the impacts of which would thus be less than cumulatively considerable.

Alternative 4—Greater Conservation

Under Alternative 4, all key components of the BRCP would be adopted and implemented as described above, in Chapter 2, and in the BRCP itself; however, in this alternative, the BRCP would include directives to acquire additional lands or take other actions to establish larger conservation areas for particular species habitats, natural communities, or landcover types. As discussed in Section 10.2.3, *Impacts and Mitigation Measures*, Alternative 4 would have less-than-significant land use impacts that are substantially similar to those under Alternative 2. Therefore, the cumulative impacts analysis for Alternative 2 likewise applies to Alternative 4, the impacts of which would thus be less than cumulatively considerable.

10.3 References

Cook, David. Planning and Environmental Specialist. Bureau of Land Management, Redding Field Office, CA. September 24, 2009—personal communication with Lisa Katz, The Planning Center | DC&E.

Friend, Scott. City Planner. City of Biggs. May 24, 2011—personal communication with Carey Stone, The Planning Center | DC&E.

11.1 Affected Environment

This section describes the regulatory and physical environmental setting for noise in the Plan Area.

11.1.1 Regulatory Setting

Federal and State

Noise sources within the Plan Area are regulated at the local level. There are no applicable federal or state regulations.

Local

Butte County

Butte County Code of Ordinances

The Butte County Code of Ordinances, Chapter 24, Zoning, Section 24-153 states as follows.

Maximum Sound Emissions. Maximum sound emissions for any use shall not exceed equivalent sound pressure levels in decibels, A-weighted scale, for any one hour as stipulated in Table 24-153-1 (Maximum Allowable Noise Exposure). These maximums are applicable beyond any property lines of the property containing the noise.

Table 24-153-1. Maximum Allowable Noise Exposure [1] [2] [3] [4]

	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
Noise Level Description	Urban	Rural	Urban	Rural	Urban	Rural
	Zone Type					
Hourly L_{eq} , dB	55	50	50	45	45	40
Maximum Level, dB	70	60	60	55	55	50

Notes:

[1] "Non-Urban" zones are Agriculture, Timber Mountain, Timber Preserve, Resource Conservation, Foothill Residential and Rural Residential. All other zones are considered "Urban" zones.

[2] Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. caretaker dwellings).

[3] The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

[4] In urban zones, the exterior noise level standard shall be applied to the property line of the receiving property. In rural zones, the exterior noise level standard shall be applied at a point 100 feet away from the residence. The above standards shall be measured only on property containing a noise sensitive land use. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all affected property owners and approved by the County.

Source: *Butte County Zoning Ordinance*

- B. Exemptions. Local noise standards set forth in this section do not apply to the following situations and sources of noise provided standard, reasonable practices are being followed:
1. Emergency equipment operated on an irregular or unscheduled basis;
 2. Warning devices operated continuously for no more than five minutes;
 3. Bells, chimes or carillons;
 4. Non-electronically amplified sounds at sporting, amusement and entertainment events;
 5. Construction site sounds between 7:00 a.m. and 7:00 p.m.;
 6. Lawn and plant care machinery fitted with correctly functioning sound suppression equipment and operated between 7:00 a.m. and 8:00 p.m.;
 7. Aircraft when subject to federal or state regulations; and
 8. Agricultural equipment when operated on property zoned for agricultural activities.
- C. Exceptions. Upon written application from the owner or operator of an industrial or commercial noise source, the review authority, as part of a permit approval, may conditionally authorize exceptions to local noise emission standards, based upon analysis supported by Development Services, in the following situations:
1. Infrequent noise;
 2. Noise levels at or anywhere beyond the property lines of the property of origin when exceeded by an exempt noise in the same location; and
 3. f, after applying best available control technology, a use existing prior to the effective date of this Zoning Ordinance is unable to conform to the standards established by this section.

Butte County General Plan Health and Safety Element

California law requires that general plans include a noise element and safety element. Butte County's General Plan 2030 incorporates the noise element requirement in its Health and Safety Element (Butte County 2012). A main goal of the Health and Safety Element is to maintain an acceptable noise environment throughout the county. The Health and Safety Element also requires that construction activities located within 1,000 feet of residences be limited to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays and non-holidays.

City of Biggs

City of Biggs Municipal Code

The City of Biggs Municipal Code restricts construction activity to between the hours of 6:00 a.m. and 7p.m. across a residential zoned or a commercial zoned real property boundary, except for emergency work being performed by a public agency or a public utility.

City of Biggs General Plan Noise Element

The City of Biggs General Plan Noise Element establishes maximum allowable noise exposure levels for noise-sensitive land uses (Table 11-1) and noise level performance standards for non-transportation noise sources (Table 11-2). Examples of non-transportation noise sources are construction equipment, industrial operations, outdoor recreation facilities, heating, ventilation, and air conditioning (HVAC) units; and loading docks.

Table 11-1. City of Biggs General Plan Noise Element Maximum Allowable Noise Exposure

Land Use	Outdoor Areas ^a L _{dn} /CNEL, dB	Interior Spaces	
		L _{dn} /CNEL, dB	L _{eq} , dB ^b
Residential	65 ^c	45	–
Transient lodging	–	45	–
Hospitals, nursing homes	65 ^c	45	–
Theaters, auditoriums, music halls	–	–	35
Churches, meeting halls	65 ^c	–	40
Office buildings	–	–	45
Schools, libraries, museums	65 ^c	–	45
Playgrounds, neighborhood parks	70	–	–

Source: City of Biggs 2014:N-12, N-13.

L_{dn} = day-night level.

L_{eq} = equivalent sound level.

CNEL = community noise equivalent level.

dB = decibel.

- ^a Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at the patios of balconies of multi-family dwellings, a common area or on-site park may be designated as the outdoor activity area. For noise-sensitive land uses that do not include outdoor activity areas, only the interior noise standard shall apply.
- ^b As determined for a typical worst-case hour during periods of use.
- ^c Where it is not possible to reduce noise in outdoor activity areas to 65 dB L_{dn}/CNEL or less using all feasible noise reduction measures, an exterior noise level of up to 70 dB L_{dn}/CNEL may be allowed provided that interior noise levels are in compliance with maximum allowable levels listed this table.

Table 11-2. City of Biggs General Plan Noise Element Noise Level Performance Standards Non-Transportation Sources

Noise Level Descriptor (dBA)	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Average-Hourly (L _{eq})	55	50
Intermittent Noise Level (L ₂ or L _{max})	75	65

Source: City of Biggs 2014:N-13.

- Notes: 1. Noise level standards do not apply to mixed-use residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings) provided interior noise levels remain below 45 dB L_{dn}/CNEL.
2. In areas where the existing ambient noise level exceeds the established daytime or nighttime standard, the existing level shall become the respective noise standard and an increase of 3 dBA or more shall be significant. Noise levels shall be reduced 5 dBA if the existing ambient hourly Leq is at least 10 dBA lower than the standards.
3. Transportation noise sources are defined as traffic on public roadways, railroad line operations, and aircraft in flight.

L_{dn} = day-night level.

L₂ = noise level exceeded 2% of the time.

L_{max} = maximum noise level.

dB = decibel.

dBA = A-weighted decibel.

CNEL = community noise equivalent level.

City of Gridley

City of Gridley Municipal Code

The City of Gridley Municipal Code Section 9.40.160 contains the following construction restrictions related to noise:

9.40.160 Construction or demolition—Generally.

It is unlawful and in violation of this chapter for any person to operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of seven P. M. and six A. M. on weekdays or at any time on Sundays or holidays. In such a manner that creates noise clearly audible across a residential zoned or a commercial zoned real property boundary, except for emergency work being performed by a public agency or a public utility

City of Gridley General Noise Element

The City of Gridley Noise Element sets forth land use compatibility standards for interior noise (Table 11-3) and performance standards for non-transportation noise (Table 11-4).

Table 11-3. Land Use Compatibility Standards for Interior Noise

Land Use	Maximum Allowable Interior Noise dBA CNEL
Residential and mixed use with residential component	45
Commercial—hotel, motel, transient lodging	45
School classrooms, libraries, churches	45
Hospitals, convalescent homes	45

Source: City of Gridley 2010.

Notes: The noise standards described in this table do not apply to bathrooms, toilets, closets, or corridors.

The acceptable interior noise level for other uses (offices, theaters, commercial, industrial) depends upon the specific nature of the indoor activity.

dBA = A-weighted decibel.

CNEL = community noise equivalent level.

Table 11-4. Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources

Noise Level Descriptor	Daytime (dB) (7 a.m.–10 p.m.)	Nighttime (dB) (10 p.m.–7 a.m.)
Hourly average level (L_{eq})	60	45
Maximum equivalent levels (L_{max})	75	65

Source: City of Gridley 2010.

Notes: Each of the noise levels specified shall be lowered by 5 decibels for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). The noise standard is to be applied at the property lines of the generating land use.

dB = decibel.

L_{eq} = equivalent sound level.

L_{max} = maximum sounds level.

The City of Gridley Noise Element also states that for purposes of noise analysis conducted pursuant to CEQA, the following thresholds of significance should be used.

- Where existing exterior noise levels are between 60 and 65 dBA¹ at outdoor activity areas of noise-sensitive uses, an increase of 3 dBA or greater is considered significant and requires mitigation to reduce noise to acceptable levels.
- Where existing exterior noise levels are greater than 65 dBA, at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dBA or greater is considered significant and requires mitigation to reduce noise to acceptable levels.
- Where it is not possible to reduce noise in outdoor activity areas to 60 dBA or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dBA may be allowed, provided that available exterior noise reduction measures have been implemented.

City of Chico

City of Chico Municipal Code

The City of Chico Noise Ordinance is the primary enforcement tool for the operation of locally regulated noise sources, such as construction activity or outdoor recreation facilities, and is set forth in Chapter 9.38 of the City's Municipal Code.

9.38.030 Residential property noise limits:

- A. No person shall produce, suffer or allow to be produced by human voice, machine, animal, or device, or any combination of same, on residential property, a noise level at any point outside of the property plane that exceeds, at any point outside of the property plane, seventy (70) dBA between the hours of seven a.m. and nine p.m. or sixty (60) dBA between the hours of nine p.m. and seven a.m.
- B. No person shall produce, suffer or allow to be produced by human voice, machine, animal, or devices or any combination of same, on multifamily residential property, a noise level more than sixty (60) dBA three feet from any wall, floor, or ceiling inside any dwelling unit on the same property, when the windows and doors of the dwelling unit are closed, except within the dwelling unit in which the noise source or sources may be located.

9.38.040 Commercial and industrial property noise limits: No person shall produce, suffer or allow to be produced by human voice, machine, animal, or device, or any combination of same, on commercial or industrial property, a noise level at any point outside of the property plane that exceeds seventy (70) dBA.

9.38.010 Declaration of policy: Except as otherwise provided in this chapter, no person shall produce, suffer or allow to be produced on public property, by human voice, machine, animal, or device, or any combination of same, a noise level that exceeds sixty (60) dBA at a distance of 25 feet or more from the source.

City of Chico General Plan Noise Element

The City of Chico General Plan Noise Element establishes maximum allowable noise exposure levels for noise-sensitive land uses (Table 11-5), and noise level performance standards for non-transportation noise sources (Table 11-6).

¹ dBA is an "A" weighted decibel, which relates the measurement of sound to the sensitivity of the human ear.

Table 11-5. City of Chico General Plan Noise Element Maximum Allowable Noise Levels from Transportation Noise Sources

Land Use	Outdoor Activity Areas ^a L _{dn} /CNEL, dB	Interior Spaces	
		L _{dn} /CNEL, dB	L _{eq} , dB ^b
Residential	65 ^c	45	-
Transient lodging	-	45	-
Hospitals, nursing homes	65 ^c	45	-
Theaters, auditoriums, music halls	-	-	35
Churches, meeting halls	65 ^c	-	40
Office buildings, commercial	-	-	45
Schools, libraries, museums	65 ^c	-	45
Playgrounds, parks	70	-	-

Source: City of Chico 2011.

L_{dn} = day-night level.

CNEL = community noise equivalent level.

dB = decibel.

^a Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at the patios or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area. For noise-sensitive land uses that do not include outdoor activity areas, only the interior noise standard shall apply.

^b As determined for a typical worst-case hour during periods of use.

^c Where it is not possible to reduce noise in outdoor activity areas to 65 dB L_{dn}/CNEL or less using all feasible noise reduction measures, an exterior noise level of up to 70 dB L_{dn}/CNEL may be allowed provided that interior noise levels are in compliance with this table.

Table 11-6. City of Chico General Plan Noise Element Maximum Allowable Exterior Noise Levels from Non-Transportation Sources

Noise Level Descriptor	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Hourly L _{eq} , dB	55	45
Maximum dB	75	65

Source: City of Chico 2011.

Notes: Noise levels are for planning purposes and may vary from the standards of the City's Noise Ordinance, which are for enforcement purposes.

Noise levels shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Noise level standards do not apply to mixed-use residential units established in conjunction with industrial or commercial uses provided interior noise levels remain below 45 dB L_{dn}/CNEL.

In areas where the existing ambient noise level exceeds the established daytime or nighttime standard, the existing level shall become the respective noise standard and an increase of 3 dBA or more shall be significant. Noise levels shall be reduced 5 dBA if the existing ambient hourly L_{eq} is at least 10 dBA lower than the standards.

Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at patio or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area.

L_{eq} = equivalent sound level.

dB = decibel.

City of Oroville

City of Oroville Municipal Code

Chapter 13A of the Oroville Municipal Code limits construction activity to between the hours of 9:00 p.m. and 7:00 a.m. on weekdays and between 10:00 a.m. and 6:00 p.m. on weekends and holidays. In addition, no individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet from the source.

Oroville General Plan Health and Safety Element

The City of Oroville General Plan Noise Element establishes maximum allowable noise exposure levels for noise-sensitive land uses (Table 11-7), and noise level performance standards for non-transportation noise sources (Table 11-8).

Table 11-7. City of Oroville General Plan Noise Element Maximum Allowable Noise Exposure to Transportation Noise Sources

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas ^a L _{dn} /CNEL, dB	Interior Noise Level Standard	
		L _{dn} /CNEL, dB	L _{eq} , dB ^b
Residential	60 ^c	45	-
Transient lodging	60 ^c	45	-
Hospitals, nursing homes	60 ^c	45	-
Theaters, auditoriums, music halls	-	-	35
Churches, meeting halls	60 ^c	-	40
Office buildings	-	-	45
Schools, libraries, museums	-	-	45
Playgrounds, neighborhood parks	70	-	-

Source: City of Oroville 2009.

L_{dn} = day-night level.

CNEL = community noise equivalent level.

dB = decibel.

^a 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.

^b As determined for a typical worst-case hour during periods of use.

^c 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.

Table 11-8. City of Oroville General Plan Noise Element Maximum Allowable Noise Exposure to Non-Transportation Sources

Land Use	Noise Level Descriptor	Exterior Noise Level Standard (Applicable at Property Line)		Interior Noise Level Standard	
		Daytime (7:00 a.m.– 10:00 p.m.)	Nighttime (10:00 p.m.– 7:00 a.m.)	Daytime (7:00 a.m.– 10:00 p.m.)	Nighttime (10:00 p.m.– 7:00 a.m.)
Residential	L _{eq}	50	45	40	35
	L _{max}	70	65	60	55
Transient lodging, hospitals, nursing homes	L _{eq}	–	–	40	35
	L _{max}	–	–	60	35
Theaters, auditoriums, music halls	L _{eq}	–	–	35	35
Churches, meeting halls	L _{eq}	–	–	40	40
Office buildings	L _{eq}	–	–	45	–
Schools, libraries	L _{eq}	–	–	45	–
Playgrounds, parks	L _{eq}	65	–	–	–

Source: City of Oroville 2009.

Notes: Each of the noise levels specified above shall be lowered by 5dB for simple tone noises, which are noises consisting primarily of speech, music or recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwelling).

L_{eq} = equivalent sound level.

L_{max} = maximum sound level.

11.1.2 Environmental Setting

This section describes noise, vibration, and noise-sensitive land uses and discusses the existing noise environment in the Plan Area.

Noise Fundamentals

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the dB scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise

measurements are weighted more heavily for frequencies to which humans are sensitive in a process called A-weighting, written as dBA and referred to as A-weighted decibels. Table 11-9 provides definitions of sound measurements and other terminology used in this section, and Table 11-10 summarizes typical A-weighted sound levels for different noise sources.

Table 11-9. Definition of Sound Measurements

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded "x" percent of a specific time period. L_{10} is the sound level exceeded 10% of the time.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Peak Particle Velocity (Peak Velocity, or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/sec.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

In general, human sound perception is such that a change in sound level of 1 dB typically cannot be perceived by the human ear, a change of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10} , L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

For a point source, such as a stationary compressor or construction equipment, sound attenuates based on geometry at rate of 6 dB per doubling of distance. For a line source such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (California

Department of Transportation 2009). Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface, such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers, such as buildings and topography that block the line of sight between a source and receiver, also increase the attenuation of sound over distance.

Table 11-10. Typical A-Weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock band
Jet flyover at 1,000 feet	—100—	
Gas lawnmower at 3 feet	—90—	
Diesel truck at 50 feet at 50 mph	—80—	Food blender at 3 feet Garbage disposal at 3 feet
Noisy urban area, daytime	—70—	Vacuum cleaner at 10 feet Normal speech at 3 feet
Gas lawnmower, 100 feet Commercial area	—60—	
Heavy traffic at 300 feet	—50—	Large business office Dishwasher in next room
Quiet urban daytime	—40—	Theater, large conference room (background)
Quiet urban nighttime	—30—	Library
Quiet suburban nighttime	—20—	Bedroom at night, concert hall (background)
Quiet rural nighttime	—10—	Broadcast/recording studio
	—0—	

Source: California Department of Transportation 2009.

Vibration

Operation of heavy construction equipment, particularly pile driving and other impulsive devices, such as pavement breakers, creates seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different

frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance.

As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second [in/sec]) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (PPV). Table 11-11 summarizes typical vibration levels generated by construction equipment (Federal Transit Administration 2006).

Table 11-11. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet
Pile driver (impact)	0.644 to 1.518
Pile drive (sonic)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Federal Transit Administration 2006.

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions. PPV_{ref} is the reference PPV at 25 feet (from Table 11-11):

$$PPV = PPV_{ref} \left(\frac{25}{distance} \right)^{1.5}$$

Table 11-12 summarizes guidelines vibration annoyance potential criteria suggested by the California Department of Transportation (Caltrans) (California Department of Transportation 2004).

Table 11-12. Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2004.

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity.

in/sec = inches per second.

Table 11-13 summarizes guideline vibration damage potential criteria suggested by Caltrans (California Department of Transportation 2004).

Table 11-13. Guideline Vibration Damage Potential Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2004.

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity.

in/sec = inches per second.

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the primary intended use of the land. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive noise can be disruptive to these activities.

Noise-sensitive uses in the Plan Area are located primarily in the main areas of development, which include the cities of Biggs, Gridley, Chico, and Oroville. Rural residences and recreational uses are scattered throughout the unincorporated portion of the Plan Area.

Existing Noise Environment

There are several primary sources of noise in the Plan Area. Mobile noise sources are those related to transportation and include roadway traffic, railroads, and airports. By far the most prevalent noise source is roadway traffic, which is a constant source of noise compared to the intermittent sounds generated by railroads and airports. Stationary sources of noise in the area include aggregate mines, natural gas extraction facilities, recycling facilities, solid waste transfer stations, agricultural activities, general service commercial and light industrial uses, recreational uses, and parks and school playing fields.

The existing noise environment in the Plan Area can be characterized generally by the area's level of development. The level of development and ambient noise levels tend to be closely correlated. Areas that are not urbanized are relatively quiet, while areas more urbanized are noisier as a result of roadway traffic, industry, and other human activities. Table 11-14 summarizes typical ambient noise levels based on level of development.

Table 11-14. Population Density and Associated Ambient Noise Levels

	L _{dn}
Rural	40-50
Small town or quiet suburban residential	50
Normal suburban residential	55
Urban residential	60
Noisy urban residential	65
Very noisy urban residential	70
Downtown, major metropolis	75-80
Area adjoining freeway or near major airport	80-90

Source: Hoover and Keith 2000.
L_{dn} = day-night level.

11.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for noise effects in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).² The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

11.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA

² These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on noise are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on noise.

In adopting the EIRs for the local general plans, each Local Agency determined that the programmatic impacts resulting from increased transportation noise (traffic, train, or aircraft) causing a permanent increase in ambient noise would be significant and unavoidable even with the implementation of general plan policies and the adoption of identified mitigation measures within their jurisdictions (i.e., inside the UPAs). The City of Chico determined there would also be a significant and unavoidable impact resulting from stationary sources. Other noise-related impacts related to implementation of the Local Agency general plans were found to be less than significant. It is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of the respective general plans and would be subject to any mitigation measures identified such that impacts would be adequately mitigated to the extent identified in the general plan EIRs

The methodology for evaluating impacts on noise also incorporates standard best management practices (BMPs) required by Caltrans during construction of transportation projects. These BMPs are summarized in Appendix D. The analysis assumes that Caltrans would implement these BMPs, when appropriate, during transportation projects within the Plan Area.

Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on noise could occur primarily during construction or maintenance of these activities. Noise and vibration-generating activities specifically associated with implementation of activities outside of the UPAs (e.g., water and irrigation districts' activities) would include the following.

- Construction of canals.
- Weirs.
- Water delivery structures.
- Moving and trimming vegetation along service roads.
- Maintenance activities to remove aquatic vegetation from canals.

Potential noise impacts could occur during construction or maintenance activities.

Impacts of Conservation Strategy Implementation

Noise and vibration-generating activities specifically associated with implementing the conservation strategy include the following.

- Operation of construction or other equipment associated with habitat management and enhancement, habitat restoration, general maintenance, avoidance and minimization measures, and species population enhancement.

- Use of construction equipment for habitat enhancement, vegetation removal, ground surface grading and recontouring, installation of irrigation systems, construction of facilities and roads, and in-water activities.
- Truck traffic on public roads associated with hauling excavated material and fill/cover material to and from restoration or other construction sites within the BRCP conservation lands.
- Maintenance activities that would require the use of trucks or off-road vehicles.

The assessment of potential construction noise levels was based on methodology developed by FHWA (2006). Noise levels produced by commonly used construction equipment are summarized below in Table 11-15. Individual types of construction equipment are expected to generate maximum noise levels ranging from 74 to 85 dBA at a distance of 50 feet. The construction noise level at a given receiver depends on the type of construction activity, the noise level generated by that activity, and the distance and shielding between the activity and noise-sensitive receivers.

Utilization factors for construction noise are used in the analysis to develop L_{eq} noise exposure values. The L_{eq} value accounts for the energy average of noise over a specified interval (usually 1 hour), so a utilization factor represents the amount of time a type of equipment is used during the interval.

Table 11-15. Commonly Used Construction Equipment Noise Emission Levels

Equipment Listed for Southport Project	Acoustical use Factor (%)	L_{max} at 50 Feet (dBA)	L_{eq} at 50 Feet (dBA)
Compactor (ground)	20	83	76
Dozer	40	82	78
Dump Truck	40	76	72
Excavator	40	81	77
Flat Bed Truck	40	74	70
Front End Loader	40	79	75
Grader	40	85	81
Paver	50	77	74
Pickup Truck	40	75	71
Scraper	40	84	80
Crane	16	81	73

Source: Federal Highway Administration 2006.

L_{eq} = equivalent sound level.

L_{max} = maximum sounds level.

dBA = A-weighted decibel.

11.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.

- Expose persons to or generate excessive groundborne vibration or groundborne noise levels.
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels.
- Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels.

11.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. Under Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, impacts related to noise that are associated with the conservation strategy and conservation measures would not occur.

Impact NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies (NEPA: less than significant; CEQA: less than significant)

The Local Agencies determined that activities that would occur under the general plans would result in less-than-significant impacts to exposing persons to or generating noise levels in excess of local standards or noise ordinances. Under Alternative 1, noise from traffic, trains, and aircraft would exceed 60 L_{dn} throughout the Plan Area in the future. However, the Local Agencies determined that the various general plan goals, objectives, and actions would restrict noise from transportation sources and would reduce the impacts to a less-than-significant level. In addition, infrastructure projects undertaken by Caltrans would be required to comply with noise restrictions summarized in Appendix D. Construction and recurring maintenance projects undertaken by water and irrigation districts are expected to be located away from sensitive receptors to noise because they would be primarily performed in agricultural or open space areas. Therefore, there is a low potential for rural residences to be located adjacent to these activities and to be exposed to excessive noise. Therefore, these activities are not anticipated to expose persons or generate noise levels in excess of established standards.

NEPA Determination: Alternative 1 could expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance; however, because the various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 could expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance; however, because the various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities, the impact would be less than significant. No mitigation is required.

Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels (NEPA: less than significant; CEQA: less than significant)

The Local Agencies determined that activities that would occur under implementation of the general plans would result in less-than-significant impacts related to exposing persons to or generating excessive groundborne vibration or groundborne noise levels. Under Alternative 1, groundborne vibration could result from high-impact construction activities throughout the Plan Area. In addition, the development of noise-sensitive land uses near sources of existing groundborne vibration would occur. However, the Local Agencies determined the various general plan goals, objectives, and actions address the exposure of noise-sensitive land uses to groundborne vibration and would reduce impacts to below the level of significance. In addition, infrastructure projects undertaken by Caltrans would be required to comply with groundborne vibration guidelines summarized in Appendix D. Construction and recurring maintenance projects undertaken by water and irrigation districts would be required to comply with the local restrictions of the County or jurisdiction where the work would be performed. Therefore, these activities are not anticipated to expose persons or generate groundborne vibration levels in excess of established standards.

NEPA Determination: Alternative 1 could expose persons to or generate groundborne vibration levels in excess of standards established in a local general plan or noise ordinance depending on where the groundborne vibration is in relation to existing sensitive receptors; however, because the various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 could expose persons to or generate groundborne vibration levels in excess of standards established in a local general plan or noise ordinance depending on where the groundborne vibration is in relation to existing sensitive receptors; however, because the various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities the impact would be less than significant. No mitigation is required.

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The Local Agencies determined that implementation of the general plans would result in a significant and unavoidable impact regarding a substantial permanent increase in noise related to transportation noise, and this increase could affect noise-sensitive land uses. Implementation of the various general plans would allow increased development that would result in more traffic on roadways throughout the Plan Area. Implementation of the goals, policies, and actions in the general plans include noise-reducing measures that would help lessen this impact. The feasibility of implementing these measures would be determined on a project-by-project basis; however, the

Local Agencies determined it may not be possible to fully mitigate traffic, train, and aircraft noise in all areas. Caltrans infrastructure projects would contribute to the permanent increase in ambient noise levels caused by transportation noise. Water and irrigation district infrastructure projects are not expected to substantially increase traffic noise as they would be performed on an intermittent and relatively infrequent basis compared to other traffic generating activities. Furthermore, maintenance activities to remove aquatic vegetation from channels would occur and are not expected to generate substantial noise due to their frequency (annually at a portion of the canals, and less frequently at other portions) and duration (typically less than a day).

The City of Chico determined that noise from stationary sources would also result in a significant and unavoidable impact. Under Alternative 1, implementation of the general plan could result in the future development of land uses that generate substantial noise levels in close proximity to noise-sensitive land uses. In addition, new noise-sensitive land uses could be located in areas of existing stationary noise sources. The City's general plan goals, policies, and objectives restrict new development of noise-sensitive land uses, require an acoustical analysis when proposed projects are likely to expose noise-sensitive land uses to noise levels that exceed City standards, and limit noise through the use of insulation, berms, building design and orientation, staggered operation hours, and other techniques. However, the City of Chico determined some stationary noise impacts cannot be reduced to levels below significance.

NEPA Determination: Alternative 1 would result in a substantial permanent increase in ambient noise levels as a result of transportation noise and stationary sources (in the case of the City of Chico). Various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities; however, they would not reduce the permanent increase in ambient noise levels to below significance. Therefore, impacts would be significant and unavoidable.

CEQA Determination: Alternative 1 would result in a substantial permanent increase in ambient noise levels as a result of transportation noise and stationary sources (in the case of the City of Chico). Various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities; however, they would not reduce the permanent increase in ambient noise levels to below significance. Therefore, impacts would be significant and unavoidable.

Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Chico, Gridley, and Oroville determined that implementation of the general plans would result in a less-than-significant impact regarding a substantial temporary or periodic increase in ambient noise levels. Under Alternative 1, construction and demolition activities would occur. The various general plans contain goals, policies, and actions that limit construction hours and noise generating activity so that temporary construction noise would not exceed local standards. Similar to these Local Agency determinations, construction noise generated by Caltrans and water and irrigation districts for various public infrastructure activities would be temporary and would be restricted to certain work windows during daytime hours so that temporary construction noise would not exceed standards. The City of Biggs determined that implementation of the general plan would result in a substantial temporary or periodic increase in ambient noise levels in their planning area as a result of the construction and agricultural uses. While implementation of their general plan policies or best management practices could reduce this

impact, it would not reduce it to less-than-significant levels, and some noise-sensitive land uses would still be exposed to temporary or periodic increases in ambient noise.

NEPA Determination: Alternative 1 could result in a substantial temporary or periodic increase in ambient noise levels as a result of construction activities, but various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities to certain hours and incorporate certain noise reducing devices on construction equipment. However, implementation of the City of Biggs general plan policies or best management practices would not reduce this effect to a less-than-significant level within the jurisdiction. Therefore, impacts would be significant and unavoidable.

CEQA Determination: Alternative 1 could result in a substantial temporary or periodic increase in ambient noise levels as a result of construction activities, but various Local Agencies' general plans or Caltrans' best management practices would restrict noise generating activities to certain hours and incorporate certain noise reducing devices on construction equipment. However, implementation of the City of Biggs general plan policies or best management practices would not reduce this effect to a less-than-significant level within the jurisdiction. Therefore, impacts would be significant and unavoidable.

Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

The County and the Cities of Chico, Gridley, Biggs, and Oroville determined that the implementation of the general plans would not result in a significant impact due to location within an airport land use plan area, or within 2 miles of a public or private airport. Under Alternative 1, sensitive land uses could be exposed to aircraft noise in excess of applicable noise standards for land use compatibility. The County and Cities have incorporated goals, policies, and objectives in their general plans to limit exposure to aircraft noise. These measures would ensure that future development near airports would meet applicable noise standards. Caltrans and water and irrigation districts' projects are not anticipated to permanently increase the number of workers within the vicinity of airports because these types of projects are infrastructure projects such as roads, pipelines, and canals. While construction workers may work within close proximity to an airport, they would do so intermittently and for a temporary period of time. Furthermore, construction workers would primarily experience noise from the actual construction work.

NEPA Determination: Alternative 1 could expose sensitive land uses to aircraft noise; however, because the various Local Agencies' general plans require limits on exposure to aircraft noise, and because Caltrans and water and irrigation district work would be temporary public infrastructure projects, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 could expose sensitive land uses to aircraft noise; however, because the various Local Agencies' general plans require limits on exposure to aircraft noise, and because Caltrans and water and irrigation district work would be temporary public infrastructure projects, the impact would be less than significant. No mitigation is required.

Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

The County and the Cities of Biggs, Chico, Gridley, and Oroville determined that the implementation of the general plans would not result in a significant impact due to location in the vicinity of a private airstrip and exposing people to excessive noise levels. The County and Cities have incorporated goals, policies, and objectives in their general plans to limit exposure to aircraft noise. These measures would ensure that future development near airports would meet applicable noise standards. Impacts associated with Caltrans, waste and wastewater management agencies, and water and irrigation districts' activities would be similar to those described for NOI-5.

NEPA Determination: The impact determination would be the same as NOI-5; impacts would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as NOI-5; impacts would be less than significant. No mitigation is required.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations, or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operations-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics including small projects or infill projects.

Potential noise impacts could occur during construction or maintenance of covered activities associated with planned development. Those activities that involve construction and the use of heavy construction equipment or those that involve earthmoving activities could generate noise. Covered activities that would involve construction (including earthmoving activities) are all development activities consistent with the Local Agencies' general plans, state and local transportation projects, and water district canal installation, and are described in Impacts NOI-1 through NOI-6 under Alternative 1.

Potential noise impacts could occur during construction or maintenance of covered activities associated with the conservation strategy and conservation measures. Potential noise impacts could occur from the use of construction equipment for habitat enhancement, vegetation removal, ground surface grading and recontouring, installation of irrigation systems, construction of facilities and roads, and in-water activities (CM4–CM11, CM14, and Activities to Improve Urban Stormwater Water Quality). Noise impacts could also result from maintenance activities that would require the use of trucks or off-road vehicles.

Impact NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies (NEPA: less than significant with mitigation; CEQA: less than significant with mitigation)

Impacts of Planned Development

Impacts related to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts would be the same under Alternative 2 as those described for Alternative 1, Impact NOI-1. In addition, implementation of BRCP AMM 27, *Avoid and Minimize Noise and Other Disturbances from Bridge Construction Activities*, included in Alternative 2, would further reduce noise impacts during construction.

Impacts of Conservation Strategy Implementation

Implementing the conservation strategy, including the conservation measures, would require the use of construction equipment throughout the Plan Area. The location of construction is currently unknown. Some construction activity could occur near noise-sensitive land uses such as rural residences. Table 11-16 shows the calculated worst-case L_{max} and L_{eq} sound levels (dBA) of four pieces of equipment (grader, truck, and two scrapers) operating simultaneously to implement conservation measures. Construction noise typically attenuates at a rate of 6 dB per doubling of distance.

Table 11-16. Worst-Case Scenario Noise Levels of Construction Equipment (Grader, Truck, Two Scrapers) Operating Simultaneously

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	94	94
100	-6	-2	86	86
200	-12	-4	78	78
300	-16	-5	74	74
400	-18	-6	70	70
500	-20	-6	68	68
600	-22	-7	66	66
700	-23	-7	64	64
800	-24	-7	63	63
900	-25	-8	61	61
1,000	-26	-8	60	60
1,200	-28	-9	58	58
1,400	-29	-9	56	56
1,600	-30	-9	55	55
1,800	-31	-10	53	53
2,000	-32	-10	52	52
2,500	-34	-10	50	50
3,000	-36	-11	48	48

dB = decibel.

dBA = A-weighted decibel.

L_{eq} = equivalent sound level.

L_{max} = maximum sound level.

As shown in Table 11-16, construction activities could result in noise levels exceeding 60 dBA at distances as great as 1,000 feet. This indicates that construction noise, although temporary and infrequent based on the type of activity (e.g., grading or scraping to restore riparian areas), could exceed local standards within this distance.

NEPA Determination: Implementation of the Local Agencies' general plan policies, Caltrans' best management practices, or AMM 27 would restrict noise generating activities and, therefore, Alternative 2 would not expose persons or generate noise levels in excess of standards. However, construction activities associated with the conservation strategy could result in short-term exceedances in local noise standards; this impact would be less than significant with implementation of Mitigation Measure NOI-1.

CEQA Determination: Implementation of the Local Agencies' general plan policies, Caltrans' best management practices or AMM27 would restrict noise generating activities and, therefore, Alternative 2 would not expose persons or generate noise levels in excess of standards. However, construction activities associated with the conservation strategy could result in short-term exceedances in local noise standards; this impact would be less than significant with implementation of Mitigation Measure NOI-1.

Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints

Employ Noise-Reducing Construction Practices during Construction

During construction, BRCP proponents or authorized contractors will employ best practices to reduce construction noise near noise-sensitive land uses. Implementation of this measure will ensure that construction noise levels, as applicable, do not exceed 60 dBA (1-hour L_{eq}) during daytime hours (7:00a.m. to 10:00p.m.) and 50 dBA (single-event maximum) during nighttime hours (10:00p.m. to 7:00a.m.).

Measures used to limit construction noise include the following.

- Limiting above-ground noise-generating construction operations to the hours between 7a.m. and 6p.m, Monday through Friday, and between 8a.m. and 5p.m. on Saturdays.
- Locating stationary equipment (e.g., generators, compressors, rock crushers, cement mixers, idling trucks) as far as possible from noise-sensitive land uses.
- Prohibiting gasoline or diesel engines from having unmuffled exhaust.
- Requiring that all construction equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- Preventing excessive noise by shutting down idle vehicles or equipment.
- Using noise-reducing enclosures around noise-generating equipment.
- Selecting haul routes that affect the fewest number of people.
- Constructing barriers between noise sources and noise-sensitive land uses or take advantage of existing barrier features (e.g., terrain, structures) to block sound transmission to noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight

between the noise-sensitive land use and onsite construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8 to 10 dBA (U.S. Environmental Protection Agency 1971).

Prior to Construction, Initiate a Complaint/Response Tracking Program

Prior to construction, BRCP proponents or authorized contractors will make a construction schedule available to residents living in the vicinity of the construction areas before construction begins and designate a noise disturbance coordinator. The coordinator will be responsible for responding to complaints regarding construction noise by determining the cause of the complaint, and ensuring that reasonable measures are implemented to correct the problem when feasible. A contact telephone number for the noise disturbance coordinator will be conspicuously posted on construction site fences and will be included in the notification of the construction schedule.

Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels (NEPA: less than significant; CEQA: less than significant)

Impacts of Planned Development

Impacts related to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts would be the same under Alternative 2 as those described for Alternative 1, Impact NOI-2. In addition, implementation of BRCP AMM 27, *Avoid and Minimize Noise and Other Disturbances from Bridge Construction Activities*, included in Alternative 2, would further reduce impacts related to groundborne vibration or groundborne noise levels.

Impacts of Conservation Strategy Implementation

Implementing the conservation strategy, including the conservation measures, would require the use of construction equipment. Heavy construction equipment would be used throughout the Plan Area. It is anticipated that construction equipment would not typically operate within 50 feet of residences and structures where vibration may be perceptible. Any vibration would be intermittent and temporary.

NEPA Determination: Implementation of the Local Agencies' general plan policies, Caltrans' best management practices, or AMM 27 would restrict noise generating activities and, therefore, Alternative 2 would not expose persons to excessive groundborne vibrations. In addition, heavy equipment associated with the conservation strategy would not operate within 50 feet of residences and, therefore, groundborne vibration would not be perceptible. The impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of the Local Agencies' general plan policies, Caltrans' best management practices, or AMM 27 would restrict noise generating activities and, therefore, Alternative 2 would not expose persons to excessive groundborne vibrations. In addition, heavy equipment associated with the conservation strategy would not operate within 50 feet of residences and, therefore, groundborne vibration would not be perceptible. The impact would be less than significant. No mitigation is required.

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Planned Development

Impacts related to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts would be the same under Alternative 2 as those described for Alternative 1, Impact NOI-3. Implementation of BRCP AMM 27, *Avoid and Minimize Noise and Other Disturbances from Bridge Construction Activities*, would not fully reduce these impacts to less-than-significant levels.

Impacts of Conservation Strategy Implementation

Operation of the conservation strategy is not anticipated to result in a substantial permanent increase in noise. Activities that would occur within the Plan Area on a permanent and ongoing basis include travel through the preserve by all-terrain vehicle, truck, or off-road vehicle. Minor increases in traffic associated with habitat restoration and construction in different locations throughout the Plan Area would occur. Monitoring activities are expected to generate a low number of daily trips and would not create a significant amount of noise.

NEPA Determination: Like Alternative 1, Alternative 2 would result in a substantial permanent increase in ambient noise levels as a result of transportation noise generated in all Local Agency jurisdictions and by stationary sources in the City of Chico as a result of general plan implementation. Operation of the conservation strategy is not anticipated to result in a substantial permanent increase in noise and no mitigation measures are necessary for noise generated by operation of the conservation strategy. Various Local Agencies' general plans or Caltrans' best management practices would restrict noise-generating activities; however, for impacts related to implementation of the general plans, they would not reduce the permanent increase in ambient noise levels to below significance. The impacts would be significant and unavoidable.

CEQA Determination: Like Alternative 1, Alternative 2 would result in a substantial permanent increase in ambient noise levels as a result of transportation noise and stationary sources (in the case of the City of Chico) generated by general plan implementation. Operation of the conservation strategy is not anticipated to result in a substantial permanent increase in noise. Various Local Agencies' general plans or Caltrans' best management practices would restrict noise-generating activities; however, they would not reduce the permanent increase in ambient noise levels to below significance. Therefore, impacts would be significant and unavoidable.

Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts of Planned Development

Impacts would be the same under Alternative 2 as those described for Alternative 1, Impact NOI-4 for impact analysis related to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts. Implementation of BRCP AMM 27, *Avoid and Minimize Noise and Other Disturbances from Bridge Construction Activities*, would not fully reduce these impacts to less-than-significant levels.

Impacts of Conservation Strategy Implementation

As stated above under Alternative 2, Impact NOI-1, implementing the conservation strategy would entail construction activities throughout the Plan Area. Construction noise, although temporary, could result in substantial temporary increases in ambient noise levels. As shown above in Table 11-16, construction noise levels could result in noise levels exceeding 60 dBA at distances as great as 1,000 feet. This would result in a substantial temporary or periodic increase in ambient noise levels.

NEPA Determination: Like Alternative 1, Alternative 2 would result in a substantial temporary increase in ambient noise levels as a result of construction noise generated by general plan implementation in the City of Biggs. The City's general plan policies or mitigation measures would not reduce the permanent increase in ambient noise levels to below significance. Construction impacts associated with the conservation strategy would be reduced with implementation of Mitigation Measure NOI-1. However, impacts would remain significant and unavoidable.

CEQA Determination: Like Alternative 1, Alternative 2 would result in a substantial temporary increase in ambient noise levels as a result of construction noise generated by general plan implementation in the City of Biggs. The City's general plan policies or mitigation measures would not reduce the permanent increase in ambient noise levels to below significance. Construction impacts associated with the conservation strategy would be reduced with implementation of Mitigation Measure NOI-1. However, impacts would remain significant and unavoidable.

Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints

Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

Impacts of Planned Development

Impacts related to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts would be the same under Alternative 2 as those described for Alternative 1, Impact NOI-5.

Impacts of Conservation Strategy Implementation

Implementing the conservation strategy, including the conservation measures, would require the use of construction equipment throughout the Plan Area. It is not known where the activities would take place. Construction workers may be located within 2 miles of a public airport. However, construction activities would be temporary and intermittent and is not expected to expose workers to excessive noise.

NEPA Determination: The impact determination would be the same as Alternative 1; impacts would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 1; impacts would be less than significant. No mitigation is required.

Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

Impacts of Planned Development

Impacts related to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts would be the same under Alternative 2 as those described for Alternative 1, Impact NOI-6.

Impacts of Conservation Strategy Implementation

Implementing the conservation strategy under Alternative 2 would be the same as described for NOI-5 above.

NEPA Determination: The impact determination would be the same as NOI-5 under Alternative 2; impacts would be less than significant. No mitigation required.

CEQA Determination: The impact determination would be the same as NOI-5 under Alternative 2; impacts would be less than significant. No mitigation required.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would likely result in fewer built structures and, therefore, less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies (NEPA: less than significant with mitigation; CEQA: less than significant with mitigation)

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 because under this alternative, it is anticipated there may be less development or fewer structures. However, impacts associated with the conservation strategy would be the same and could result in short-term exceedances in local noise standards.

NEPA Determination: The impact determination would be the same as Alternative 2; with Mitigation Measure NOI-1 incorporated, the impact would be less than significant.

CEQA Determination: The impact determination would be the same as Alternative 2; with Mitigation Measure NOI-1 incorporated, the impact would be less than significant.

Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints**Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels (NEPA: less than significant; CEQA: less than significant)**

There would be fewer impacts expected under Alternative 3 when compared to Alternative 2 with respect to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts because under this alternative, it is anticipated there would be less development. Impacts associated with the conservation strategy would be the same as described under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2. The impact would be less than significant. No mitigation is required.

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

There would be fewer impacts expected under Alternative 3 compared to Alternative 2 with respect to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts because under this alternative, it is anticipated there may be less development. However, substantial permanent increase in ambient noise levels as a result of transportation noise and stationary sources (in the case of the City of Chico) generated by general plan implementation would still occur. Various Local Agencies' general plans or Caltrans' best management practices would restrict noise-generating activities; however, they would not reduce the permanent increase in ambient noise levels to below significance. Operation of the conservation strategy is not anticipated to result in a substantial permanent increase in noise, as described in Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2. The impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2. The impact would be significant and unavoidable.

Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

This impact would be slightly less under Alternative 3 as compared to Alternative 2 with respect to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts because under this alternative, it is anticipated there would be less development. However, there would still be a substantial temporary increase in ambient noise levels as a result of construction noise generated by general plan implementation in the City of Biggs. In addition, temporary and periodic noise from construction activities associated with the conservation strategy could occur near noise-sensitive land uses.

NEPA Determination: The impact determination would be the same as Alternative 2. Mitigation Measure NOI-1 would reduce temporary noise impacts from construction activities related to the conservation strategy to less-than-significant levels; however, impacts associated with implementation of the Biggs general plan would remain significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2. Mitigation Measure NOI-1 would reduce temporary noise impacts from construction activities related to the conservation strategy to less than significant levels; however, impacts associated with implementation of the Biggs general plan would remain significant and unavoidable.

Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints

Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 3 as under Alternative 2 with respect to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts and under the conservation strategy.

NEPA Determination: The impact determination would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 3 as under Alternative 2 with respect to covered activities within the jurisdictions of the Local Agencies and undertaken by Caltrans and water and irrigation districts and under the conservation strategy.

NEPA Determination: The impact under Alternative 3 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact under Alternative 3 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described for Alternative 2. The impacts of the covered activities within local jurisdictions of the Local Agencies would be the same under Alternative 4 as under the Alternative 2, as would the water district and irrigation districts' covered activities and the Caltrans activities.

Impact NOI-1: Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies (NEPA: less than significant with mitigation; CEQA: less than significant with mitigation)

This impact would be the same under Alternative 4 as under Alternative 2 as increased conservation of additional grasslands and ricelands would not generate noise levels in excess of established standards beyond those already identified under Alternative 2.

NEPA Determination: The impact determination under Alternative 4 would be the same as under Alternative 2. With Mitigation Measure NOI-1 incorporated to reduce construction noise generated as a result of the conservation strategy, the impact would be less than significant.

CEQA Determination: The impact determination under Alternative 4 would be the same as under Alternative 2. With Mitigation Measure NOI-1 incorporated to reduce construction noise generated as a result of the conservation strategy, the impact would be less than significant.

Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints

Impact NOI-2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 4 as under Alternative 2 as increased conservation of additional grasslands and ricelands would not generate groundborne vibrations beyond those already identified under Alternative 2.

NEPA Determination: The impact determination under Alternative 4 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination under Alternative 4 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

Impact NOI-3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

This impact would be the same under Alternative 4 as under Alternative 2 as increased conservation of additional grasslands and ricelands would not result in a substantial permanent increase in ambient noise levels beyond those already identified under Alternative 2.

NEPA Determination: The impact determination under Alternative 4 would be the same as under Alternative 2. The impact would be significant and unavoidable.

CEQA Determination: The impact determination under Alternative 4 would be the same as under Alternative 2. The impact would be significant and unavoidable.

Impact NOI-4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

This impact would be the same under Alternative 4 as under Alternative 2 as increased conservation of additional grasslands and ricelands would not result in a substantial temporary or periodic increase in ambient noise levels beyond those already identified under Alternative 2.

NEPA Determination: The impact determination would be the same as Alternative 2. Mitigation Measure NOI-1 would reduce temporary noise impacts from construction activities related to the conservation strategy to less-than-significant levels; however, impacts associated with implementation of the Biggs general plan would remain significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2. Mitigation Measure NOI-1 would reduce temporary noise impacts from construction activities related to the conservation strategy to less-than-significant levels; however, impacts associated with implementation of the Biggs general plan would remain significant and unavoidable.

Mitigation Measure NOI-1: Implement measures to reduce noise during construction and address noise complaints

Impact NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 4 as under Alternative 2 as increased conservation of additional grasslands and ricelands would not expose residents or workers to noise levels associated with airports beyond those already identified under Alternative 2.

NEPA Determination: The impact under Alternative 4 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact under Alternative 4 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

Impact NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels (NEPA: less than significant; CEQA: less than significant)

This impact would be the same under Alternative 4 as under Alternative 2 as increased conservation of additional grasslands and ricelands would not expose residents or workers to noise levels associated with airports beyond those already identified under Alternative 2.

NEPA Determination: The impact under Alternative 4 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

CEQA Determination: The impact under Alternative 4 would be the same as under Alternative 2. The impact would be less than significant. No mitigation is required.

11.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for noise is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This cumulative effects analysis for noise considers the effects of implementing the action alternatives in combination with other past, present, and reasonably foreseeable projects or programs. The analysis focuses on projects in the Plan Area, in particular those that could create a cumulatively significant increase in noise relative to noise-sensitive land uses. This analysis considered urban development projects, including roadway projects, and water supply development projects; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives. This analysis determines whether the covered activities not analyzed in previous environmental documents would result in cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, *Approach to the Analysis*. Overall, these projects have resulted in or are anticipated to result in cumulative impacts as a result of transportation noise from urban development, including roadway projects, and the construction of infrastructure facilities.

The County and the Cities of Chico, Gridley, and Oroville determined that there would be cumulatively considerable and significant and unavoidable impacts as a result of transportation noise. Implementation of the general plans would noticeably increase transportation noise (traffic, train, and aircraft) throughout the Plan Area. Various general plan goals, policies, and actions are in place to reduce noise impacts due to transportation; however, it is still anticipated that there would be a substantial permanent increase in ambient noise levels. Since transportation noise is an unavoidable outcome of residential and commercial growth as foreseen in the implementation of the various general plans, this cumulative impact is significant and unavoidable for all alternatives.

11.3 References

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12.1 Affected Environment

This section describes the regulatory and environmental setting associated with public services and public utilities.

12.1.1 Regulatory Setting

Federal

No federal regulations related to public services or utilities are applicable to the proposed Plan.

State

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. CPUC is responsible for ensuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy. CPUC establishes service standards and safety rules, authorizes utility rate, and enforces CEQA for utility construction. CPUC also regulates the relocation of power lines by public utilities under its jurisdiction, such as PG&E, and works with other state and federal agencies in promoting water quality, environmental protection, and safety.

Local

Butte County General Plan

Relevant goals and policies of the *Butte County General Plan 2030* (Butte County 2012) are listed below.

Goal PUB-1: Maintain facilities and staff adequate to provide appropriate levels of government services and administration for the residents of Butte County.

Policy PUB-P1.4: Governmental and civic facilities shall accommodate multiple community uses.

Goal PUB: Provide adequate fire protection and emergency medical response services to serve existing and new development.

Policy PUB-P2.3: New fire stations shall be located on sites that are easily accessible, close to existing or future development, and/or close to fire hazard areas. (Land Use Element Policy 5.7.a).

Goal PUB-3: Maintain a safe environment in Butte County through the enforcement of law.

Policy PUB-P3.1: The County supports the expansion of volunteer services for law enforcement. (Policy Alternatives 29.c)

Goal PUB-4: Support high-quality schools and educational facilities for all Butte County residences.

Policy PUB-P4.3: Plans for future growth areas shall incorporate new school sites as appropriate. (Policy Alternatives 30.a)

Goal PUB-5: Provide library services to meet the informational and social needs of each community.

Policy PUB-A5.1: Identify opportunities to partner with the municipalities, other agencies, and library support organizations in providing library facilities and services.

Goal PUB-9: Provide safe, sanitary and environmentally acceptable solid waste management.

Policy PUB-P9.3: Innovative strategies shall be employed to ensure efficient and cost-effective solid waste and other discarded materials collection, disposal, transfer, and processing.

Policy PUB-P9.5: The Neal Road Recycling and Waste Facility should prioritize disposal and processing capacity for waste materials generated within Butte County, but accept waste materials from outside the county when capacity is available and the rates cover the full cost of disposal and processing.

Goal PUB-12: Manage wastewater treatment facilities at every scale to protect the public health and safety of Butte County residents and the natural environment.

Policy PUB-P12.3: New community sewage systems shall be managed by a public County sanitation district or other County-approved methods. Proponents shall demonstrate the financial viability of constructing, operating, and maintaining the proposed community sewage system.

PUB-P12.4: New sewer collection and transmission systems shall be designed and constructed to minimize potential inflow and infiltration.

Goal PUB-13: Plan adequate wastewater infrastructure to serve new development.

Policy PUB-P13.1: The County shall encourage all plant operations to begin planning and implementing expansions to the existing Regional Wastewater Treatment master Plan to meet future demand for wastewater treatment generated by this General Plan at least four years prior to reaching the capacity of existing facilities.

Policy PUB-P13.2: New development projects shall demonstrate the availability of a safe, sanitary, and environmentally sound wastewater system.

City of Oroville

Relevant goals and policies of the *Oroville 2013 General Plan* (City of Oroville 2009a) are listed below.

Goal PUB-1: Maintain a safe environment in Oroville through the provision of law enforcement services, crime prevention and the creation of community partnerships for public safety.

P1.1: Provide law enforcement services that help to maintain a low occurrence of criminal activity within the community.

Goal PUB-2: Provide adequate fire protection and emergency response services.

P2.5: Strive to comply with Insurance Services Office (ISO) recommendations for fire engine response within the built areas of the City.

P2.6: Ensure that new development incorporates adequate emergency water flow, fire resistant design and materials, and evacuation routes; is accessible to emergency vehicles; and does not affect the ability of service providers to provide adequate emergency response.

Goal PUB-3: Provide educational facilities in Oroville sufficient to meet the demands of existing and new development.

P3.2: Support and cooperate with the Oroville Planning Area school districts in planning for and providing educational services, school facilities with sufficient capacity, and District- wide support facilities to meet the needs of current and projected future student enrollments and employees.

Goal PUB-6: Provide sufficient supplies of high quality water to City residents and businesses to serve the City in the most efficient and financially-sound manner.

P6.1: Ensure that Oroville’s potable water distribution and storage system is adequately sized to serve development allowed by the General Plan, without providing excess capacity.

P6.4: Require the installation of water lines concurrently with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.

P6.6: Ensure that all proposed developments can be adequately served by available water supplies.

City of Gridley

General Plan Public Facilities Element

Relevant goals and policies of the *City of Gridley 2030 General Plan* (City of Gridley 2010) are listed below.

Goal 1: To maintain safe and reliable ongoing water supply

Policy 1.2: The City will treat, monitor, and remediate water supplies using state and federal public health and water quality standards.

Goal 2: To provide environmentally sustainable, efficient and effective wastewater collection, conveyance, and treatment.

Policy 2.2: The City will direct phased, efficient extension of wastewater collection and improvements to wastewater treatment and disposal systems, to meet existing and future needs.

Goal 4: To provide efficient and reliable electricity service to Gridley residents and businesses.

Policy 4.2: The City will monitor the electricity infrastructure in existing developed portions of the City and explore options for infrastructure improvements, as needed and as funding is available.

Goal 5: To provide high-quality law enforcement services designed to protect the public health, safety, and welfare.

Policy 5.3: The City will require roadway connectivity, emergency access, and siting of new police facilities with the goal of maintaining an average police response time of 3 minutes or less for emergency calls.

Goal 6: To provide effective fire suppression and emergency response.

Policy 6.1: The City will ensure that fire suppression service providers have facilities with sufficient capacity, personnel, and equipment to provide a response time of four minutes or less at least 90 percent of the time within City limits, with response time measured from the 911 call time to the arrival time of the first responder at the scene.

City of Biggs

Relevant goals and policies of the *City of Biggs General Plan* (City of Biggs 2014) are listed below.

Goal PFS-1: Ensure that public facilities are planned and constructed in a comprehensive and efficient manner and that new development provides for facilities on an equitable basis.

Policy PFS-1.3 (infrastructure installation): Construction of oversized or off-site facilities may be required of development projects to provide capacity for future development.

Goal PFS-2: Ensure an ample supply of high quality water and adequate treatment and distribution facilities are available to meet the present and future needs of the City.

Policy PFS-2.1 (Water System): Provide a high-quality, cost-efficient municipal water supply and distribution system that meets California Department of Health guidelines and standards.

Goal PFS-5: Ensure that electrical service facilities are adequate to meet the needs of current and future residents and that those facilities are maintained and operated in a safe and efficient manner.

Policy PFS-5.1 (Electric System Planning): Prepare an Electric System Master Plan to address current and future electric service needs.

Policy PFS-5.2 (Electric System Upgrades): Continue to upgrade the city's electrical service infrastructure to reduce line losses and increase the power factor ratios.

Policy PFS-5.5 (Electric System Interconnection): Require main electric distribution lines to be interconnected wherever feasible to facilitate the reliable delivery of electricity within the city.

Goal PFS-6: Ensure that solid waste disposal and recycling services are adequate to meet the needs of the City's current and future residents.

City of Chico

Relevant goals and policies of the *Chico 2030 General Plan* (City of Chico 2011a) are listed below.

Goal PPFS-5: Maintain a sustainable supply of high quality water, delivered through an efficient water system to support Chico's existing and future population, including fire suppression efforts.

Policy PPFS-5.1: Consult with Cal Water to ensure that its water system will serve the City's long-term needs and that State regulations SB 610 and SB 122 are met.

Goal PPFS-8: Ensure that solid waste and recyclable collection services are available to City residents.

Policy PPFS-8.1: Provide solid waste collection services that meet or exceed state requirements for source reduction, diversion, and recycling.

12.1.2 Environmental Setting

Public Services

The County General Plan EIR describes the provision of public services within the Plan Area. The following descriptions are summarized from pages 379–387 of the County General Plan EIR.

Fire Protection

The responsibility for the prevention and suppression of wildfires in the county belongs to the Butte County Fire Department (BCFD) and the California Department of Forestry and Fire Protection (CAL FIRE), and to individual municipalities and a fire protection district (Butte County 2012).

In State Board of Forestry–designated State Responsibility Areas (SRAs), the state has fiscal responsibility for preventing and suppressing wildfires. CAL FIRE, BCFD, and the Butte County Fire Safe Council have collaborated to address wildland fire hazards by developing the Butte Unit Community Wildfire Protection Plan, and CAL FIRE and BCFD maintain the Fire Management Plan. This plan “systematically assesses the existing level of wildland fire protection service, identifies

high-risk and high-value areas where potential exists for costly and damaging wildfires, ranks these areas in terms of priority needs, and prescribes what can be done to reduce future costs and losses.” (Butte County 2012).

There are four independent fire departments in the county: the City of Chico Fire Department, the City of Oroville Fire Department, the Town of Paradise Fire Department, and the El Medio Fire Protection District.

The City of Chico Fire Department maintains a force of both full-time and volunteer firefighters in six operating stations. The department fields specialized teams for technical rescues, drowning accidents, and hazardous materials response. The average response time for residents in the City of Chico is 4.4 minutes. Locations of the six department fire stations are shown below.

- Station 1: 842 Salem Street, Chico, CA 95928
- Station 2: 182 S. 5th Avenue, Chico, CA 95926
- Station 3: 145 Boeing Avenue, Chico, CA 95973
- Station 4: 2405 Notre dame Boulevard, Chico, CA 95928
- Station 5: 1777 Manzanita Avenue, Chico, CA 95926
- Station 6: 2544 Highway 32, Chico, CA 95973

The City of Oroville has an independent fire department that provides services in the event of fire or medical emergencies. Fire Station One is located at 2055 Lincoln Street in Oroville and is supported by 21 full-time personnel and 12 paid fire fighters.

The Town of Paradise provides service to its constituents through the three stations run by the Paradise Fire Department. These three stations respond to all emergencies and provide response services to fires, emergency medical services, hazardous materials, rescue, and public assist.

The El Medio Fire Protection District is located south of the Oroville city limits. It consists of one station, located at 3515 Myers Street, Oroville, CA 95966, and houses two engines. The fire protection district consists of four operational divisions: Administration, Operations, Fire Prevention, and Training.

Emergency Medical Services

BCFD and CAL FIRE provide fire and emergency services to the entire unincorporated county population, with the exception of Cities of Chico and Oroville, the Town of Paradise, and the El Medio Fire Protection District (Butte County 2012). The BCFD Emergency Command Center (ECC) provides Emergency Medical Dispatch (EMD) services. The EMD services provide life-saving instruction for cardio-pulmonary resuscitation, control of bleeding, childbirth, choking, and other emergency medical procedures to help residents before fire engines and paramedics arrive (Butte County 2012).

Police Services

Law enforcement services in the county are provided by the Butte County Sheriff’s Office (BCSO), the California Highway Patrol (CHP), and police agencies in the Cities of Chico, Oroville, Gridley, and Biggs and the Town of Paradise (Butte County 2012).

Law enforcement, criminal investigation, and crime prevention in the county are led by BCSO. BCSO, as the countywide coordinator for mutual aid situations, maintains mutual aid agreements with CHP and the municipal police departments (Butte County 2012). The county jail, which is used by all law enforcement agencies in the county, is administered by BCSO. The BCSO main office is located in Oroville, with substations in Chico and Magalia.

CHP has a mutual aid agreement with the Sheriff's Department and will respond quickly when requested by the Sheriff. CHP's primary role is to provide law enforcement services, primarily traffic control, for state roads and roads in the unincorporated portions of the county (Butte County 2012).

Municipal police departments in Oroville, Chico, Gridley, Biggs, and Paradise maintain a mutual aid agreement with the BCSO (Butte County 2012). Citizens and their property are protected by their respective municipal police departments and their authorized jurisdictions. Under the terms of the mutual aid agreement, BCSO can assume that role in the jurisdictions on request or in the event of the inability of municipal police departments to provide law enforcement (Butte County 2012).

Public Schools

The Butte County Office of Education (BCOE), Butte Community College, California State University, Chico, and local school districts provide public education in the county. Local districts provide elementary and secondary education to the municipalities and unincorporated areas of the county. BCPE provides special education and other related services to the individual districts within the county. Butte Community College is a 2-year junior college; California State University, Chico, is a 4-year college (Butte County 2012).

BCOE provides local and regional educational programs, services, and support to the individual school districts within the county and outside the county. Three areas of service are provided by the BCOE: administrative and organizational support, curriculum and staff support, and student services.

The Butte Community College main campus is located approximately 15 miles northwest of Oroville and is accessible to Oroville, Chico, Durham, Gridley, Paradise, and Magalia. This 2-year community college offers a range of liberal arts and career/technical classes through full-time, part-time, and evening programs (Butte County 2012).

California State University, Chico, is located in Chico and serves the county and the region. Chico State has seven colleges, six schools, and fourteen centers. Chico is one of the California State University system's most popular campuses, and is the second oldest campus in the system (Butte County 2012).

The school districts in the county are listed below.

- Biggs Unified School District.
- Chico Unified School District.
- Durham Unified School District.
- Paradise Unified School District.
- Gridley Union High School District.
- Gridley Union Elementary School District.

- Manzanita Elementary School District.
- Oroville Union High School District.
- Bangor Union Elementary School District.
- Feather Falls Union School District.
- Golden Feather Union School District.
- Oroville City Elementary School District.
- Palermo Union Elementary School District.
- Pioneer Union Elementary School District.
- Thermalito Union School District.

Public Utilities

Water

Much of the county's residential, commercial, and agricultural water needs are met through a network of local water providers, including municipal water departments, mutual water companies, investor-owned utilities, irrigation districts, systems serving a small number of connections, and special districts (Butte County 2012).

The following water districts are within the county.

- California Water District—Chico.
- California Water District—Oroville.
- Del Oro Water Company.
- Durham Irrigation District.
- Gran Mutual Water Company.
- Lake Madrone Water District.
- Paradise Irrigation District.
- Biggs–West Gridley Water District.
- Butte Water District.
- Durham Mutual Water Company.
- Ramirez Water District.
- Richvale Irrigation District.
- South Feather Water & Power Agency.
- Western Canal Water District.
- Thermalito Water and Sewer District.

Wastewater

Three different methods of wastewater treatment and disposal are currently used in the county: municipal wastewater treatment plants, non-municipal wastewater systems, and individual onsite wastewater disposal systems, generally referred to as septic systems (Butte County 2012).

The five active municipal wastewater treatment plants in the county are listed below.

- City of Biggs.
- City of Chico.
- City of Gridley.
- Richvale Sanitary District.
- Sewerage Commission—Oroville Region (SC-OR), which serves the City of Oroville, Thermalito Water and Sewer District (TWS), and the Lake Oroville Area Public Utility District (LOAPUD).

There are currently six community service areas (CSAs) managing nonmunicipal wastewater systems in the county.

- CSA 21: Oakridge Sewer.
- CSA 82: Stirling City Sewer
- CSA 94: Sycamore Valley Sewer.
- CSA 135: Keefer Creek Estates.
- CSA 141: Mountain Oaks Sewer.
- CSA 169: Pheasant Landing.

According to the County General Plan 2030, there are an estimated 50,000 onsite sewage disposal systems in the county (unincorporated areas as well as cities and towns) serving approximately half the county's population. Septic systems in the Chico area, both existing and new, are strictly regulated by the Nitrate Compliance Plan that was adopted in 2001 to mitigate elevated levels of nitrates in area groundwater.

Solid Waste

Existing solid waste management facilities in the county consist of two transfer stations, a large transfer station/materials recovery facility, the Neal Road Recycling and Waste Facility (Neal Road Facility), one private wood waste recycler, and two municipal wood waste recyclers (Butte County 2012).

The County owns and runs the Neal Road Recycling and Waste Facility, 7 miles southwest of Chico. The County Public Works Department assumed daily operational responsibility for the facility in 2003. The Neal Road facility is permitted to receive municipal solid waste, inert industrial waste, demolition materials, special wastes containing non-friable asbestos, and septage. Based on current waste volumes, projections suggest that the Neal Road facility has capacity to last through 2034 (Butte County 2012).

Existing recycling activities and programs are overseen and operated by the County at the Neal Road facility and by private entities at other locations (Butte County 2012). These include a permitted

regional composting facility (as well as a number of privately operated facilities) and one biomass conversion facility—the Pacific Oroville Power plant.

Electricity and Natural Gas

The City of Biggs owns, operates, and maintains its own utility system. This service has provided an important source of revenue for the City and has allowed residents to receive reliable power (City of Biggs 2014:PFS-4). The City is an active member of the Northern California Power Agency (NCPA). In the county, residential energy needs are often fulfilled by electricity or a combination of gas and electricity. Space heating is the most energy-consuming activity in residential structures (Butte County 2012). Electricity purchased from PG&E by local customers in the County is generated and transmitted to the county by a statewide network of power plants and transmission lines. Transmission and distribution lines carry electrical power from power plants within and outside the county to electrical substations. The County has control over the siting of electrical substations (City of Chico 2011a). Much of PG&E's natural gas supply comes from Canada and is supplied to the region through the Hershey station in Colusa County. Wild Goose Storage Inc. operates an underground natural gas storage facility in the county. A 25-mile pipeline carries gas between the main PG&E pipeline in Colusa County and the Wild Goose facility, which stores natural gas in an underground rock formation that previously produced natural gas (City of Chico 2011a). Gridley is a member of the Northern California Power Agency (NCPA) and the Western Area Power Administration (WAPA) (City of Gridley 2011). PG&E provides the county, including Oroville, with most of its electricity (City of Oroville 2011).

County and City Parks and Recreational Facilities

Large open space and recreational areas in the Plan Area are owned and managed by various federal and state agencies. Nine such federal and state recreational facilities are located throughout the county. For specific details on each location, please refer to Chapter 13, *Recreation, Open Space, and Visual Resources*.

Five recreation and park districts encompass most of the County's land. Three of these are fully within the Plan Area: Chico Area Recreation and Park District, Durham Recreation and Park District, and Richvale Recreation and Park District. A section of the Feather River Recreation and Park District within the Plan Area extends east and southeast of Lake Oroville. For detailed acreage of these park districts, please see Chapter 13.

The City of Biggs has three small parks with a variety of amenities such as ball courts, ball fields, picnic areas, playgrounds, restrooms, and a skatepark (City of Biggs 1998). Currently, no trails connect Biggs with levees, flood control lands, or public open space outside the community. The closest Class I bike trail is the Freeman Trail on the Thermalito Afterbay levee, approximately 2.5 miles away. A Class I bike trail is planned to connect Biggs to the Cherokee Canal levee to the northwest and the city of Gridley to the southeast. Class II bike trails have been planned leading from the city to the north, south, and east connecting the city to Cherokee Canal, Gridley, and Oroville Wildlife Area (Butte County 2007). Biggs does not have a boat ramp, water access, or fishing pier along the three levees closest to the city.

Recreational and open space resources, facilities, and services in Chico have historically been provided by both the City of Chico and the Chico Area Recreation and Park District (CARD). The City has primary responsibility for Bidwell Park (3,670 acres) and the neighborhood parks; CARD has

primary responsibility for recreation programming and community parks. The City has 37 existing sites that are parks, open space, or recreation centers totaling 4,176 acres (City of Chico 2011a).

The City of Gridley has four parks and a boat ramp. Amenities at Gridley's parks include ball courts, ball fields, picnic areas, playgrounds, restrooms, and a skatepark. The boat ramp is located on the Feather River east of the city next to the City's water treatment plant. There is a shooting range located at the boat ramp. Currently, no trails connect Gridley with levees, flood control lands, or public open spaces outside the community. The closest Class I bike trail is the Freeman Trail on the Thermalito Afterbay levee, approximately 5 miles away. A Class I bike trail is planned to connect Gridley to the Cherokee Canal levee via Biggs (Butte County 2007). Other Class II bike lanes have been planned leading from the city to the north, south, east, and west connecting the Gridley to Biggs, Live Oak, the Feather River, and Gray Lodge Waterfowl Management Area (Butte County 2007).

The City of Oroville has 37 existing parks, recreational facilities, and open spaces within its city limits. The city parklands encompass approximately 280 acres, while the Feather River Recreation and Parks District and the California Department of Parks and Recreation parklands encompass approximately 250 acres. The City has an extensive network of existing trails for walking, hiking, jogging, and riding horses. For example, the California Hiking and Equestrian trail, owned and maintained by the California Department of Parks and Recreation, is the longest recognized trail within the city. There are less formally recognized trails and paths used by residents, including trails within the Oroville Wildlife Refuge (City of Oroville 2011).

12.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for public services and public utilities in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).¹ The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

12.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on public services and public utilities are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact

¹ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on public services and public utilities.

In adopting the EIRs for the local general plans, each participating jurisdiction, except Gridley, determined that the programmatic impacts on public services and public utilities would be less than significant through the implementation of general plan policies and the adoption of identified mitigation measures. The City of Gridley 2030 EIR determined there would be significant and unavoidable impacts resulting from implementation of Gridley's general plan. It is assumed that all covered activities approved by the participating local jurisdictions would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified, such that impacts would be adequately mitigated to the extent identified in the general plan EIRs. Water and irrigation districts' activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on public services and public utilities could occur primarily during construction or maintenance of these activities.

12.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
 - Fire protection.
 - Police protection.
 - Schools.
 - Parks.
 - Other public facilities.
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- 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.
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed.
- Result in a determination by the wastewater treatment provider that 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.

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Comply with federal, state, and local statutes and regulations related to solid waste.

12.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. Under the Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on public services and utilities associated with the conservation strategy and conservation measures would not occur. The primary impact mechanism for impacts on public services and public utilities under Alternative 1 is implementation of the various general plans, including the expansions of waste and wastewater facilities and upgrades and maintenance to utilities (e.g., electrical) and the maintenance of water and irrigation districts' facilities.

Impact PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville concluded that implementation of their general plans and associated projects would result in no impacts or less than significant impacts on public services and utilities (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). Buildout of these jurisdictions would be subject to the goals, policies, and actions of the general plans, precluding approval of projects that would overload the existing infrastructure and service ratios.

The City of Gridley determined that implementation of its general plan would result in significant and unavoidable impacts on most public services and utilities. Although population growth would occur in the city, and general plan goals, policies, and actions require public utilities, service ratios, and infrastructure capacities to be met, the City concluded that there is no mitigation beyond the general plan policies available to reduce impacts on service ratios to a less-than-significant level (City of Gridley 2009).

Maintenance activities within the water and irrigation districts include rerouting existing canals. These facilities are meant to better meet water delivery objectives of the water and irrigation districts and would not result in a population increase. The construction and maintenance activities associated with these activities would increase the efficiency of existing utilities, providing benefit to

their users. Similarly, expansion of existing water and wastewater facilities would increase the efficiency of utilities, providing benefits to their users. No significant impacts would result from these activities.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in a substantial decrease in service ratios for the City of Gridley due to the projected population increase. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, implementation of the City of Gridley's general plan, would result in a substantial decrease in service ratios for the City of Gridley due to the projected population increase. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville general plan goals, policies, and actions would not exceed wastewater treatment requirements and thus would avoid significant impacts (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). However, the City of Gridley determined that substantial adverse impacts on the environment would result from implementation of its general plan and as a result it would exceed wastewater treatment requirements. Operation of an expansion of any wastewater treatment facility in the Plan Area would require compliance with all Regional Water Quality Control wastewater treatment requirements; therefore, it is not expected to result in exceedances of those requirements.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would exceed wastewater treatment requirements. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would exceed wastewater treatment requirements. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact PS-3: Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville general plan goals, policies, and actions would avoid significant impacts on the environment resulting from the construction or expansion of new water and wastewater treatment facilities (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). However, the City of Gridley determined that substantial adverse impacts would result from implementation of its general plan as a result of population increases.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in the construction of new water or waste water treatment facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in the construction of new water or wastewater treatment facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville general plan goals, policies, and actions would avoid significant impacts on the environment resulting from the construction or expansion of stormwater drainage facilities (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). However, the City of Gridley determined that substantial adverse impacts would result from implementation of its general plan as a result of the construction of new stormwater drainage facilities or the expansion of existing facilities.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in the construction of new stormwater drainage facilities or the expansion of existing facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in the construction of new stormwater drainage facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville general plan goals, policies, and actions would avoid significant impacts on water supplies available to serve the project from existing entitlements and resources (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). However, the City of Gridley determined that sufficient water supplies would not be available or that new or expanded entitlements would be needed and, thus, substantial adverse impacts would result from implementation of its general plan.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result insufficient water supplies or require new or expanded entitlements would be

needed. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in insufficient water supplies or require new or expanded entitlements would be needed. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact PS-6: Result in a determination by the wastewater treatment provider that 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville general plan goals, policies, and actions would avoid significant impacts on wastewater treatment capacity (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). However, the City of Gridley determined that wastewater treatment provider(s) may not have adequate capacity to serve the general plan area and thus substantial adverse impacts would result from implementation of its general plan.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in the need for additional wastewater treatment services. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in the need for additional wastewater treatment services. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville general plan goals, policies, and actions would avoid significant impacts on solid waste disposal capacity (City of Oroville 2009b; Butte County 2010; City of Chico 2011b; City of Biggs 2013). However, the City of Gridley determined that substantial adverse impacts would result from implementation of its general plan as a result of an increase in population and an increase in solid waste needs.

NEPA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in an increase in solid waste needs. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Alternative 1, specifically implementation of the City of Gridley's general plan, would result in an increase in solid waste needs. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and water and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operation-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics including small projects or infill projects.

Impact PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable. Impacts associated with other activities (e.g., water and irrigation districts' maintenance activities) would also be the same as under Alternative 1 and would be less than significant.

Implementation of the conservation strategy and conservation measures would not result in a population increase in the Plan Area. Population increase is the primary driver for increased demand for public services that would result in a substantial decrease in service ratios and for increased requirements for utilities distribution and infrastructure.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in a substantial decrease in service ratios as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of decreased service ratios for the City of Gridley to less-than-significant levels. Although the conservation strategy would not result in a change to service ratios, the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in a substantial decrease in service ratios as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of decreased service ratios for the City of Gridley to less-than-significant levels. Although the conservation strategy would not result in a change to service ratios, the overall impact would be significant and unavoidable.

Impact PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable.

Implementation of the conservation strategy and conservation measures would not result in a population increase in the Plan Area; consequently, it would not exceed wastewater treatment requirements, and this impact would be less than significant.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would exceed wastewater treatment requirements described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects for the City of Gridley to less-than-significant levels. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would exceed wastewater treatment requirements described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects for the City of Gridley to less-than-significant levels. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

Impact PS-3: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable.

Implementation of the conservation strategy and conservation measures would not entail the construction of new water or wastewater treatment facilities that would cause significant and avoidable environmental effects and the conservation strategy is not anticipated to demand water or wastewater services because it is a strategy that would establish lands to conserve covered species and habitat, and this impact would be less than significant.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in the construction of new water or wastewater treatment facilities as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of construction of new water or wastewater treatment facilities for the City of Gridley to less-than-significant levels. Although the conservation strategy would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities that would cause significant environmental effects, the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in the construction of new water or wastewater treatment facilities as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of construction of new water or wastewater treatment facilities for the City of Gridley to less-than-significant levels. Although the conservation strategy would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities that would cause significant environmental effects, the overall impact would be significant and unavoidable.

Impact PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable.

Activities to Improve Urban Stormwater Water Quality (BRCP 5.4.4), supports the Cities of Chico, Oroville, Gridley, and Biggs in obtaining funding through federal and state grants and other sources to implement programs to support compliance with National Pollutant Discharge Elimination System (NPDES) stormwater permits for municipal separate storm sewer systems (MS4s). Actions under this conservation measure associated with funding could consist of physical changes to the stormwater system or planning and documentation. However, as the physical actions (i.e., changes to stormwater system) would be in support of compliance with the Cities' NPDES and MS4 permits and project-specific NPDES permits and thus are activities that would occur under the implementation of these Cities' general plans. Therefore, any potentially significant impacts associated with these types of activities are previously disclosed in the general plan EIRs. In addition, the activities associated with this conservation measure would not result in additional potentially significant environmental effects beyond those already disclosed in other resource chapters of this document (e.g., construction activities producing air emissions disclosed in Chapter 5, *Air Quality and Climate Change*). Therefore, significant environmental effects have been disclosed that might occur as a result of these activities.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in the construction of stormwater facilities as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of new stormwater facilities for the City of Gridley to less-than-significant levels. Although the conservation strategy could result in stormwater drainage facility modifications, these modifications are not expected to cause significant and avoidable environmental effects, and the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in the construction of stormwater facilities as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of new stormwater facilities for the City of Gridley to less-than-significant levels. Although the conservation strategy could result in stormwater drainage facility modifications, these modifications are not expected to cause significant and avoidable environmental effects, and the overall impact would be significant and unavoidable.

Impact PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed (NEPA: significant and unavoidable CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable.

Implementation of the conservation strategy and conservation measures would not create additional demand on water supplies because it would establish conservation areas to conserve covered species and habitat.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in insufficient water supplies or require new or expanded entitlements as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of insufficient water supplies or new or expanded entitlements for the City of Gridley to less-than-significant levels. Although the conservation strategy would not create additional demand on water supplies, the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in insufficient water supplies or require new or expanded entitlements as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of insufficient water supplies or new or expanded entitlements for the City of Gridley to less-than-significant levels. Although the conservation strategy would not create additional demand on water supplies, the overall impact would be significant and unavoidable.

Impact PS-6: Result in a determination by the wastewater treatment provider that 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable.

Implementation of the conservation strategy and conservation measures would not result in a population increase; therefore, it would not increase demand for wastewater treatment capacity, and this impact would be less than significant.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in the need for additional wastewater treatment services as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of additional wastewater treatment services for the City of Gridley to less-than-significant-levels. Although the conservation strategy would not increase demand for wastewater treatment capacity, the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in the need for additional wastewater treatment services as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of additional wastewater treatment services for the City of Gridley to less-than-significant-levels. Although the conservation strategy would not increase demand for wastewater treatment capacity, the overall impact would be significant and unavoidable.

Impact PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and would be significant and unavoidable.

Because implementation of the conservation strategy and conservation measures would not result in a population increase, it would not increase demand for solid waste disposal needs, and this impact would be less than significant.

NEPA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in an increase in solid waste needs as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of increased solid waste needs for the City of Gridley to less-than-significant levels. Although the conservation strategy would not increase demand for solid waste disposal needs, the overall impact would be significant and unavoidable.

CEQA Determination: Alternative 2, specifically the implementation of the City of Gridley's general plan, would result in an increase in solid waste needs as described for Alternative 1, and implementation of Gridley's general plan policies or mitigation measures would not reduce the effects of increased solid waste needs for the City of Gridley to less-than-significant levels. Although the conservation strategy would not increase demand for solid waste disposal needs, the overall impact would be significant and unavoidable.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but potentially less extensive than those under Alternative 2 as a result of less development and potentially fewer residents; however, impacts would still be significant and unavoidable.

Implementation of the conservation strategy and conservation measures would not result in a population increase in the Plan Area. Activities within the water and irrigation districts could entail a modest decrease compared to the same activities under Alternative 2; however the impact would still be similar as compared to Alternative 2 and would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

Impact PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but less extensive than those under Alternative 2; however, impacts would still be significant and unavoidable.

Impacts associated with implementation of the conservation strategy and conservation measures would be the same as under Alternative 2, and the impact would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

Impact PS-3: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but potentially less extensive than those under Alternative and 2and would be significant and unavoidable.

Impacts associated with implementation of the conservation strategy and conservation measures would be the same as under Alternative 2, and the impact would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in the construction of new water or wastewater treatment facilities of expansion of existing facilities that would cause significant environmental effects, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in the construction of new water or wastewater treatment facilities of expansion of existing facilities that would cause significant environmental effects, the overall impact would be significant and unavoidable.

Impact PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but potentially less extensive than those under Alternative 2 as a result of less development occurring; however, the impact would still be significant and unavoidable.

Impacts associated with implementation of the conservation strategy and conservation measures would be the same as under Alternative 2, although they may be less extensive because there may be fewer changes to the stormwater system as a result of reduced development in the Plan Area. The impact would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not necessitate the construction of new or expansion of existing stormwater drainage facilities that would cause significant and avoidable environmental effects, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not necessitate the construction of new or expansion of existing stormwater drainage facilities that would cause significant and avoidable environmental effects, the overall impact would be significant and unavoidable.

Impact PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but potentially less extensive than those under Alternative 2; however, the impact would still be significant and unavoidable.

Implementation of the conservation strategy and conservation measures would not create additional demand on water supplies, and the impact would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not create additional demand on water supplies, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not create additional demand on water supplies, the overall impact would be significant and unavoidable.

Impact PS-6: Result in a determination by the wastewater treatment provider that 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but potentially less extensive than those under Alternative 2; however, the impact would still be significant and unavoidable.

Because implementation of the conservation strategy and conservation measures would not result in a population increase, it would not increase demand for wastewater treatment capacity, and the impact would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for wastewater treatment capacity, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for wastewater treatment capacity, the overall impact would be significant and unavoidable.

Impact PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be similar to but potentially less extensive than those under Alternative 2; however, the impact would still be significant and unavoidable.

Because implementation of the conservation strategy and conservation measures would not result in a population increase, it would not increase demand for solid waste disposal needs, and the impact would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for solid waste disposal needs, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for solid waste disposal needs, the overall impact would be significant and unavoidable.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. Therefore, impact mechanisms for public services and public utilities would be similar to those described for Alternative 2.

Impact PS-1: Environmental impacts associated with the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection; police protection, schools, parks, or other public facilities (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

. The increased conservation under Alternative 4 would not increase the population and the demand on public services and utilities and therefore the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in a change to service ratios, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in a change to service ratios, the overall impact would be significant and unavoidable.

Impact PS-2: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

The increased conservation under Alternative 4 would not increase the population and consequently would not result in a need for wastewater treatment; therefore the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in exceeding wastewater treatment requirements, the overall impact would be significant and unavoidable.

Impact PS-3: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

The increased conservation under Alternative 4 would not increase the population and consequently would not result in a need for wastewater treatment facilities; therefore, the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities that would cause significant environmental effects, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not result in the construction of new water or wastewater

treatment facilities of expansion of existing facilities that would cause significant environmental effects, the overall impact would be significant and unavoidable.

Impact PS-4: Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

The increased conservation under Alternative 4 would not result in the need for stormwater drainage facilities; therefore, the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not necessitate the construction of new or expansion of existing stormwater drainage facilities that would cause significant and avoidable environmental effects, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not necessitate the construction of new or expansion of existing stormwater drainage facilities that would cause significant and avoidable environmental effects, the overall impact would be significant and unavoidable.

Impact PS-5: Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

The increased conservation under Alternative 4 would not result in a need for additional water supplies; therefore the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not create additional demand on water supplies, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not create additional demand on water supplies, the overall impact would be significant and unavoidable.

Impact PS-6: Result in a determination by the wastewater treatment provider that 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

The increased conservation under Alternative 4 would not increase the population and consequently would not result in a need for wastewater treatment facilities as identified in Impact PS-3; therefore the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for wastewater treatment capacity, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for wastewater treatment capacity, the overall impact would be significant and unavoidable.

Impact PS-7: Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2 and would be significant and unavoidable.

The increased conservation under Alternative 4 would not increase the population and consequently would not result in a need for landfill facilities; therefore, the impacts associated would be similar to those described under Alternative 2. The impacts would be less than significant.

NEPA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for solid waste disposal needs, the overall impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as under Alternative 2. Although the conservation strategy would not increase demand for solid waste disposal needs, the overall impact would be significant and unavoidable.

12.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for public services and utilities is a qualitative evaluation considering the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*; the general plan EIRs' impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

This analysis examines whether the covered activities that were not analyzed in previous environmental documents would result in a cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past and present projects have resulted in an increase in water supply development in the Plan Area. As disclosed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*, and Section 12.1.2, *Environmental Setting*, the Plan Area has numerous water distribution facilities that serve

agricultural and consumptive needs. These projects have provided beneficial cumulative effects for water distribution to businesses and residents relying on this resource. Past and present projects have resulted in the need and demand for all public services and utilities within the Plan Area, and these types of services have been accommodated by Local Agencies as their populations expand. Therefore, there is a beneficial cumulative effect for services such as police and fire and services such as wastewater, solid waste, and stormwater management.

Alternative 1—No Action (No Plan Implementation)

The City of Gridley determined that cumulatively considerable and significant impacts on public services and utilities would occur within its jurisdiction; no other local jurisdiction made this determination. Consequently, past, present, and reasonably foreseeable future projects—including implementation of the general plans—would result in cumulatively considerable and significant impacts on public services and utilities. Accordingly, Alternative 1 would result in an incremental contribution to cumulative impacts.

Alternative 2—Proposed Action

The City of Gridley determined that cumulatively considerable and significant impacts on public services and utilities would occur within its jurisdiction; no other local jurisdiction made this determination. Consequently, past, present, and reasonably foreseeable future projects—including implementation of the general plan—would result in cumulatively considerable and significant impacts on public services and utilities. Although covered activities associated with implementation of the conservation strategy and conservation measures would have less-than significant effects on public services and utilities, Alternative 2 in its entirety would result in an incremental contribution to cumulative impacts.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

The cumulative effects under these alternatives would be similar to those under Alternative 2. While Alternative 3 would likely result in slightly reduced effects because of its reduced development footprint, the City of Gridley concluded that the reduced development alternative would nevertheless result in significant and unavoidable impacts on public services and utilities. Consequently, neither Alternative 3 nor Alternative 4 would result in an incremental contribution to cumulative impacts on public services and utilities.

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13.1 Affected Environment

This section describes the regulatory and physical environmental setting for recreation, open space, and visual resources in the Plan Area.

13.1.1 Regulatory Setting

Federal

Sacramento, Delevan, Colusa, and Sutter National Wildlife Refuges Final Comprehensive Conservation Plan, U.S. Fish and Wildlife Service

The Comprehensive Conservation Plan prepared for the Sutter National Wildlife Refuge provides a summary of legal and policy guidance governing the refuge. The relevant guidance includes the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997; Refuge Recreation Act of 1962; selected portions of the Code of Federal Regulations, and the Service Manual (U.S. Fish and Wildlife Service 2009a). The National Wildlife Refuge System Improvement Act establishes six priority public uses of wildlife refuges: hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation. Providing and enhancing opportunities to participate in these recreational activities is a goal of the Refuge System as defined by the *Refuge System Mission, Goals, and Refuge Purposes Policy* (601 FW1 of the Service Manual).

State

Central Valley Vision, California State Parks

California State Parks has developed Central Valley Vision, a plan to help guide parkland acquisition and development of parkland over a 20-year planning horizon (California State Parks 2009). The Draft Implementation Plan calls for tripling the number of campsites, doubling the number of picnic sites, and doubling the acres of park land in the Central Valley (California State Parks 2009). Most of the existing and proposed parks will be located along rivers.

Lake Oroville State Recreation Area General Plan, California State Parks

The general plan discusses resource management, site development, and the provision of recreational facilities for the Lake Oroville State Recreation Area (California State Parks 2004). Goals listed in the general plan are designed to provide and increase recreational access and educational opportunities in the recreation area, as well as develop new trails that provide regional, park, and local connections.

Gray Lodge Wildlife Area Management Plan, California Department of Fish and Wildlife

The Gray Lodge Wildlife Area Management Plan describes the expansion of, improvements to, and ongoing maintenance of the Gray Lodge wildlife area. The document provides several goals and objectives that relate to recreation (California Department of Fish and Game 1989). These include those excerpted below.

Hunting Programs Goal 1: Provide maximum opportunity for legal hunting of game species in season.

Warmwater Angling Goal 1: Optimize public use opportunity of warmwater game fish.

Nonconsumptive Uses Goal 1: Accommodate nonconsumptive uses of the wildlife area and the wildlife resource.

Goal 2: Educate the public about wildlife ecology and management.

Upper Butte Basin Wildlife Area Land Management Plan, California Department of Fish and Wildlife

The Upper Butte Basin Wildlife Area Land Management Plan describes the management goals and criteria for the wildlife area, and emphasizes an ecosystem approach for managing the diverse habitat communities and associated species within the wildlife area (California Department of Fish and Game 2009b). The goals focus on facilities maintenance and development, staffing and operational funding, and water supply. Relevant goals from the plan are meant to maintain, manage, and enhance existing ecosystems, as well as control of invasive species that negatively impact wildlife or special-status species. The management plan also calls for continuing to provide existing public use programs and allowing compatible public recreation where and when appropriate.

California Scenic Highway Program

The intent of the California Scenic Highway Program (Streets and Highway Code Section 260) of the California Scenic Highway Program is to protect and enhance California's natural beauty and to protect the social and economic values provided by the state's scenic resources. SR 70 is an Eligible State Scenic Highway, but is not officially designated for protections (Scenic Byways 2013; California Department of Transportation 2013). Therefore, there are no roadways in or near the Plan Area that are designated as scenic highways worthy of protection for maintaining and enhancing scenic viewsheds.

Local

Butte County

General Plan

Butte County's General Plan 2030(Butte County 2012) is comprised of multiple elements meant to govern the vision for growth in the county. Goals, policies, and actions are identified within the various elements that protect, maintain, and enhance recreation, open space, and visual resources. These goals, policies, and actions are described below.

Recreation and Open Space

The General Plan Conservation and Open Space Element provides background information describing the importance of conserving open space to protect the county's biological communities, wildlife areas, and migratory deer herds (Butte County 2012). This element also provides goals, policies, and actions related to open space. In addition, the Public Facilities and Services Element includes a discussion of parks and recreation in the county. Goals, policies, and actions relating to recreation and open space from both of these elements are excerpted below.

Goal COS-6: Engage in cooperative planning efforts to protect biological resources.

Policy COS-P6.1: The county shall coordinate with applicable federal, State, regional, and local agencies on natural resources and habitat planning.

Action COS-A6.1: Continue to work with the Butte County Association of Governments and the five municipalities to develop and implement the Butte Regional Habitat Conservation Plan and Natural Community Conservation Plan, and subsequently update as necessary.

Goal COS-7: Conserve and enhance habitat for protected species and sensitive biological communities.

Policy COS-P7.1: Conservation easements that protect habitat areas, habitat corridors, and sensitive biological resources shall be promoted.

Policy COS-P7.3: Creeks shall be maintained in their natural state whenever possible, and creeks and floodways shall be allowed to function as natural flood protection features during storms.

Goal COS-8: Maintain and promote native vegetation.

Policy COS-P8.1: Native plants shall be used wherever possible on County-owned and -controlled property.

Goal COS-9: Protect identified special-status plant and animal species.

Goal COS-10: Facilitate the survival of deer herds in winter and critical winter migratory deer herd ranges.

Goal PUB-P6: Support a comprehensive and high-quality system of recreational open space and facilities.

Action PUB-A6.2: Coordinate with park and recreation districts to allow the development of park and recreation facilities on publicly-owned land.

Goal PUB-7: Encourage local, regional, and State parks providers to engage in coordinate and cooperative planning efforts.

Policy PUB-P7.1: The County shall coordinate with the municipalities, park and recreation districts, and school districts to plan and develop additional regional and community parks, support and coordinate park master plans, coordinate financing for recreation and park facilities, and plan for the distribution of federal and State funds for recreation and park programs and facilities.

Policy PUB-P7.2: Implementation and development of recreation and park facilities within park and recreation district boundaries shall be consistent with the applicable district's master plans.

Visual Resources

General Plan 2030 elements establish goals, actions, and policies that relate to the visual character and quality of the county. Specifically, policies from the Economic Development Element, Agriculture Element, Water Resources Element, Conservation and Open Space Element, and Public Facilities and Services Element help to establish the types of visual resources viewers currently experience and

will experience during the implementation of the general plan in the county. These goals, actions, and policies are excerpted below.

ED-P2.3: The County shall promote agritourism, such as through special events and themed “farm trails” and routes within Butte County’s agricultural areas.

AG-P2.1: The County shall work with the Local Agency Formation Commission (LAFCO) to create and maintain a consistent approach to the conservation of agricultural land through the designation of reasonable and logical Sphere of Influence (SOI) boundaries.

W-P6.1: Any alteration of natural channels for flood control shall retain and protect riparian vegetation to the extent possible while still accomplishing the goal of providing flood control. Where removing existing riparian vegetation is unavoidable, the alteration shall allow for reestablishment of vegetation without compromising the flood flow capacity.

COS-P7.3: Creeks shall be maintained in their natural state whenever possible, and creeks and floodways shall be allowed to function as natural flood protection features during storms.

COS-P8.1: Native plant species shall be protected and planting and regeneration of native plant species shall be encouraged, wherever possible, in undisturbed portions of development sites.

COS-P8.2: New landscaping shall promote the use of xeriscape and native tree and plant species, including those valued for traditional Native American cultural uses.

COS-P8.3: Native plants shall be used wherever possible on County owned and controlled property.

COS-P8.4: Introduction or spread of invasive plant species during construction of development projects shall be avoided by minimizing surface disturbance; seeding and mulching disturbed areas with certified weed-free native mixes; and using native, noninvasive species in erosion control plantings.

COS-P16.2: Impacts to the traditional Native American landscape shall be considered during California Environmental Quality Act or National Environmental Policy Act review of development proposals.

COS-P17.1: Views of Butte County’s scenic resources, including water features, unique geologic features and wildlife habitat areas, shall be maintained.

Goal COS-18: Protect and enhance scenic areas adjacent and visible from highways for enjoyment by residents and visitors.

PUB-P8.3: The development of abandoned railroad rights-of-way, levee tops, utility easements and waterways for new multi-use trails shall be pursued where appropriate.

Countywide Bikeway Master Plan

The County adopted a Bicycle Master Plan in 2011. The Master Plan identifies eight main goals related to providing a safe and efficient biking system that facilitates biking for recreation and commuting (Butte County Public Works 2011).

Butte County Outdoor Lighting Standards

The Butte County Zoning Ordinance includes standards for outdoor lighting in residential areas. Section 24-241 requires that all outdoor lighting in residential areas “be located, adequately shielded and directed such that no direct light falls outside the property perimeter, or into the public right-of-way.”

City of Biggs

General Plan

The City of Biggs General Plan (City of Biggs 2011) is comprised of multiple elements meant to govern the vision for growth in the city. Goals, policies, and actions are identified within the various elements that protect, maintain, and enhance recreation, open space, and visual resources. These goals, policies, and actions are described below.

Recreation and Open Space

The Recreation and Open Space Element of the general plan has several goals and policies affecting recreation, including ones related to bicycle and park facilities. These goals and policies are excerpted below.

Goal CR-1: Provide a range of parks and recreational facilities and opportunities for all members of the community.

Policy CR-1.2: Partner with local service providers, community organizations and other agencies to provide parks and recreation facilities.

Policy CR-1.3: Maintain and improve the physical condition and amenities of parks and recreational buildings and facilities.

Visual Resources

The Community Enhancement Element of the general plan addresses the aesthetic and visual character and quality of the city. It emphasizes the city's geographical, historical, and cultural features that contribute to the city's visual character. This plan element provides direct guidance regarding design, streetscapes, and buildings, with the intent of promoting and expanding the physical qualities of the environment. There are no goals or policies related to the natural environment or urban-rural or urban-agricultural edges.

City of Chico

General Plan

The City of Chico General Plan (City of Chico 2011a) is comprised of multiple elements meant to govern the vision for growth in the city. Goals, policies, and actions are identified within the various elements that protect, maintain, and enhance recreation, open space, and visual resources. These are described below.

Recreation and Open Space

The Parks, Public Facilities and Services Element addresses the City of Chico's needs for its parks and establishes goals, policies, and actions that are meant to direct the planning, enhancement, and maintenance of parks, greenways, and preserves throughout the general plan study area (City of Chico 2011a). Relevant goals from this element are designed to continue cooperative efforts with local agencies and utilize creeks, greenways, and preserves as a framework for a system of open space. The Open Space and Environment Element addresses the City's focuses on the preservation and enhancement of the natural environment and limiting the adverse effects on environmental resources from implementation of the general plan. Relevant goals from this element, excerpted

below, are designed to preserve native species and habitat through land use planning and to connect the community through the preservation of open space and greenways.

Goal PPFS-1: Continue cooperative efforts with the Chico Area Recreation and Park District and the Chico Unified School District to provide a broad range of high quality parks and recreation facilities and services for all residents.

Goal PPFS-2: Utilize creeks, greenways, and preserves a framework for a system of open space.

Goal OS-1: Protect and conserve native species and habitats

Goal OS-2: Connect the community with a network of protected and maintained open space and creekside greenways.

Visual Resources

The Open Space and Environment Element of the general plan has goals and policies that address the visual character and quality of the city by maintaining and protecting certain types of landscapes. Additionally, the Community Design Element provides guidance on the physical elements and spaces that shape the city. Relevant goals and policies in these two elements are excerpted below.

Goal OS-5: Preserve agricultural resources for the production of local food and the maintenance of Chico's rural character

Goal OS-6: Provide a healthy and robust urban forest.

Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community

Policy CD-1.1: Incorporate and highlight natural features such as scenic vistas, creeks, and trees as well as cultural resources such as walk walls into project designs.

Tree Preservation Ordinance

The City Tree Preservation Ordinance (Chico Municipal Code, Chapter 16.66) defines a *tree* or *trees* as the following.

- Any live woody plant having a single perennial stem of 24 inches or more in diameter, or multi-stemmed perennial plant greater than 15 feet in height having an aggregate circumference of 40 inches or more, measured at four feet six inches above adjacent ground.
- Tree or trees required to be preserved as part of an approved building permit, grading permit, demolition permit, encroachment permit, use permit, tentative or final subdivision map.
- Tree or trees required to be planted as a replacement for unlawfully removed tree or trees.
- "Tree" or "trees" does not mean Ailanthus, Chinese tallow, or box elder.

All native oak trees over six inches diameter at breast height (dbh) on the project site shall be preserved to the maximum extent practical.

Municipal Code Section 19.60.050

This section of the municipal code requires that exterior lighting be shielded or recessed so that direct glare and reflections are confined to the maximum extent feasible within the boundaries of the site. All light fixtures must be appropriate in scale, intensity, and height to the use that they are serving.

City of Gridley

General Plan

The City of Gridley General Plan (City of Gridley 2010) is comprised of multiple elements meant to govern the vision for growth in the city. Goals, policies, and actions are identified within the various elements that protect, maintain, and enhance recreation, open space, and visual resources. These goals, policies, and actions are described below.

Recreation and Open Space

The Circulation Element and Open Space Element of the general plan establish several goals and policies affecting recreation in the city, including ones related to bicycle and park facilities (City of Gridley 2010). These goals and policies are excerpted below.

Circulation Goal 1: To ensure that new development accommodates safe and pleasant routes for pedestrians, bicyclists, and drivers.

Circulation Goal 2: To retrofit existing development for increased pedestrian, bicycle, and transit access.

Open Space Goal 1: To create high-quality, functional open space corridors.

Open Space Goal 2: To provide visual screening, buffering, trails, and drainage in open space corridors along the railroad and Highway 99 in the Planned Growth Area.

Open Space Goal 3: To provide for drainage, pedestrian and bicycle circulation, and landscaping in open space corridors within neighborhoods.

Open Space Goal 5: Maintain, expand, and upgrade facilities in existing recreation areas.

Open Space Policy 5.6: The City will explore opportunities to improve ongoing public access to, and expand recreational opportunities related to the Feather River on property owned by the City and used for wastewater treatment.

Open Space Goal 6: To provide recreation facilities and programs that meet the needs of existing and future residents.

Visual Resources

The Conservation Element addresses the management, use, and development of natural resources within the city. It provides goals and policies that affect the city's overall landscape, which comprises the visual character and quality experienced by viewers. The Open Space Element contains goals and policies that provide guidance regarding numerous aspects of multi-use open space corridors, including aesthetic benefits. The Community Character and Design Element is meant to preserve and enhance specific characteristics of the city (e.g., historical or natural) that contribute to its character, including its aesthetic character. Relevant goals and policies from these elements are excerpted below.

Conservation Policy 2.2: Native, drought tolerant landscaping will be used, to the maximum extent feasible, in new City parks and open space and for landscaping within new rights of way as well as within new developments, including commercial, industrial, and residential projects.

Conservation Policy 2.3: The City will explore opportunities in existing City-owned parks, open space, rights-of-way, and other City properties to replace landscaping with native, drought tolerant landscaping.

Conservation Policy 3.3: The City will require that waterways and floodplains are maintained in their natural condition, wherever possible.

Conservation Policy 3.4: Existing swales and sloughs shall be preserved, restored, and used for naturalized stormwater drainage in the context of new development to the maximum extent feasible.

Conservation Policy 5.2 New development shall preserve open space corridors alongside agricultural drainage ditches.

Conservation Policy 5.5: New developments shall preserve and plant native or naturalized vegetation and avoid the introduction of invasive exotic species.

Conservation Policy 9.1: The City will consider views of the Sutter Buttes in the orientation of new roadways and trails, and maintain visual connections, where feasible.

Conservation Policy 10.1: The City will support and encourage practices that reduce light pollution and glare, and preserve views of the night sky.

Open Space Policy 1.5: Within open space corridors, mature trees, including old orchard trees shall be preserved, wherever feasible, as new trees are planted to ensure an ongoing tree canopy.

Open Space Policy 1.6: Existing vegetation in open space corridors should be preserved, where it could provide ongoing habitat benefits or stormwater filtering. Noxious weeds, invasive species, and unhealthy plants can be removed, as well as vegetation posing an issue for public health or safety.

Open Space Policy 1.7: Newly planted landscaping in open space corridors shall be selected and designed to enhance habitat, provide aesthetic value, filter pollutants out of, and slow down stormwater runoff, and minimize ongoing landscape maintenance and watering.

Design Goal 7: To provide attractive and functional landscaping in neighborhoods.

City of Gridley Bicycle Plan

The City of Gridley Bicycle Plan identifies goals, objectives, and measures for developing a bicycle circulation network that ties into the region beyond the city and provides access to the Gray Lodge Wildlife Area, the city of Biggs, and the Feather River. The plan establishes several goals, objectives, and implementation measures affecting recreation facilities for bikes, specifically with respect to providing a safe, effective, and efficient bicycle circulation system (City of Gridley 2003:16).

Municipal Code Section 17.38.909

This section of the municipal code prohibits light spillage of any subject property onto adjacent properties.

City of Oroville

General Plan

The City of Oroville General Plan (City of Oroville 2009a) is comprised of multiple elements meant to govern the vision for growth in the city. Goals, policies, and actions are identified within the various elements that protect, maintain, and enhance recreation and open space, as well as visual resources. These are described below.

Recreation and Open Space

Recreation, as it relates to open space and natural resources, is discussed in the Open Space, Natural Resources, and Conservation Element. This element focuses on goals, policies, and actions that improve the quantity, quality, and character of the open space and natural resources of the city and discusses open space for outdoor recreation and scenic resources. Relevant goals and policies are excerpted below.

Goal OPS-1: Provide a comprehensive, high-quality system of recreation open space and facilities to maintain and improve the quality of life for Oroville residents.

P1.2: Develop the Thermalito Forebay and Afterbay as a destination water recreation park defining the western boundary of the community, in accordance with the State's original master plan for recreation development associated with the Federal Energy Regulatory Commission (FERC) permit.

P1.4: Support appropriate management of local lakes and reservoirs and releases from these water bodies to sustain recreational use and an appropriate environment that maintains natural conditions for aquatic and other species.

Goal OPS-2: Engage in coordinated and cooperative planning efforts between local, regional and State park providers.

P2.5: Encourage coordinated park and trail development and operations efforts with the State Department of Parks and Recreation, local school districts, and private purveyors in establishing and maintaining park and recreation facilities within and adjacent to the Planning Area.

Goal OPS-4: Support the development of an extensive, interconnected multi-use trail system for Oroville.

P4.3: Establish agreements with private entities and public agencies for the development and maintenance of trails through their property.

P4.4: Seek dedication of existing trails and confirmation of prescriptive rights for trails that exist on private property.

Visual Resources

Two elements, Open Space, Natural Resource, and Conservation and Community Design, discuss the aesthetic character and quality of the city. The Open Space, Natural Resources and Conservation Element identifies important open space and natural resources in the city and frames goals, policies, and actions such that future development will respect the scenic qualities of these areas, including wildlife areas and agricultural areas. Specifically, it discusses open space for scenic resource value. The Community Design Element focuses on the city's physical built environment and seeks to guide development to maintain and enhance aesthetic quality and character. Relevant goals and policies are excerpted below.

Goal OPS-5: Maintain and enhance the quality of Oroville's scenic and vision resources

P5.3: Maintain the scenic view of the Feather River and Table Mountain

P5.4: Require new light fixtures within new development to be designated and sited so as to minimize light pollution, glare, and light trespass into adjoining properties.

Goal OPS-6: Preserve the maximum feasible amount of agriculturally productive land, in order to maintain agriculture's contributions to the local economy, lifestyle, air quality, habitat value, and sense of Oroville's heritage.

P6.2: Cooperate with Butte County to retain agriculture uses on lands within the Oroville sphere of influence prior to their annexation to the city.

Goal CD-2: Maintain and enhance the quality of Oroville's landscape, streetscape, and gateways.

P2.3: Encourage imaginative design concepts in woodland areas to perpetuate and preserve native trees.

P2.4: Use appropriate landscaping to reduce effects of surface runoff in developing areas, with an emphasis on native and drought-resistant species, minimization of impervious surface, and provisions for recharge.

P2.6: Encourage the planting of trees and other landscape features along Oroville's corridors to make them interesting, appealing and inviting.

13.1.2 Environmental Setting

The environmental setting for recreation, open space, and visual resources describes the existing conditions for recreation and open space managed and operated by federal and state agencies, the County, and the Cities within the Plan Area. It also describes the existing visual character and quality of the county and cities within the Plan Area.

Recreation and Open Space in the Plan Area

Federal and State

Large open space and recreation areas in the county, within the Plan Area, are owned and managed by various federal and state agencies, as described below.

- Bidwell Mansion, a memorial to John and Annie Bidwell, is a historic Victorian House Museum in Chico that is managed by California State Parks (California State Parks 2011a).
- Bidwell-Sacramento River State Park is west of Chico along the Sacramento River and primarily used for boating and fishing. The park is managed by California State Parks and also has the Indian Fisher, Big Chico, and Pine Creek day use areas and the Irvine Finch river access (California State Parks 2011b).
- Clay Pit State Vehicular Recreation Area is 3 miles west of Oroville and managed by California State Parks. The recreation area provides off-road recreation and consists of a large shallow pit ringed with low hills (California State Parks 2011c).
- Gray Lodge Waterfowl Management Area is the southwestern end of the county and managed by CDFW. The area consists of 9,100 acres and provides wildlife viewing year-round (California Department of Fish and Game 1989). Hunting is allowed during the regulated hunting season, as well as fishing in the spring and summer. The area also provides educational programs and nature trails.
- Lake Oroville State Recreation Area is northeast of Oroville and managed by California State Parks. The recreation area provides opportunities for camping, picnicking, horseback riding, hiking boating, fishing, and swimming (California State Parks 2011d). The area also includes the Feather River Fish Hatchery, built by DWR to mitigate for the loss of spawning areas for salmon and steelhead.
- Oroville Wildlife Area, managed by CDFW, is northeast of Oroville (California Department of Fish and Game 2009a). The 11,869 acre wildlife area consists primarily of riparian woodland along the Feather River, as well as grasslands around the Thermalito Afterbay, which is north of

Oroville and managed by DWR. The area provides opportunities for fishing, horseback riding, and camping, and also has a shooting range.

- North Central Valley Wildlife Management Area is located within 11 counties in the Sacramento Valley. The portions of it that are within Butte County are along the Sacramento River. The area is managed by USFWS and consists of conservation easements acquired on privately-owned wetlands that have been developed for waterfowl and other wetland-related wildlife (U.S. Fish and Wildlife Service 2009b). The refuge is closed to the public.
- Sacramento River National Wildlife Refuge Complex consists of five national wildlife refuges and three wildlife management areas located throughout the Sacramento Valley (U.S. Fish and Wildlife Service 2011). The portions of the refuge complex that are within Butte County are along the Sacramento River. The refuge is managed by USFWS and provides resting and feeding areas for migratory birds along the Pacific Flyway.
- Upper Butte Basin Wildlife Area is along the Sacramento River. The wildlife area is managed by CDFW and consists of three units: the 1,521-acre Llano Seco Unit, the 4,010-acre Howard Slough Unit, and the 3,762-acre Little Dry Creek Unit (California Department of Fish and Game 2011). The area provides opportunities for fishing, camping, and bird watching.

Butte County

Butte County provides numerous recreational areas and facilities due to its diverse ecosystems, which offer a wide range of recreation opportunities. However, a large amount of these lands are inaccessible to the public, and they are classified as open space. There are five recreation and park districts that encompass most of the county's land, of which, three are fully within the Plan Area: Chico Area Recreation and Park District, Durham Recreation and Park District, and Richvale Recreation and Park District. There is a section of the Feather River Recreation and Park District that extends to the east and south east of Lake Oroville that is within the Plan Area. Table 13-1 provides the acreages of developed and undeveloped parks within these Park Districts in the Plan Area.

In addition to the parks and recreational facilities listed in Table 13-1, there is one Class I bike trail in the unincorporated area of the county—the Freeman Trail—which is on the Thermalito Afterbay levee in the far northeastern portion of the study area. The trail is connected to the Oroville State Recreation Area. A Class I bike trail is planned to connect the Cherokee Canal levee via Biggs to Gridley (Butte County 2007). Other Class II bike lanes are planned to link Biggs, Gridley, Gray Lodge Wildlife Area, and Oroville Wildlife Area with other county population centers and places of interest (Butte County 2007).

Table 13-1. Butte County Park and Recreation Facilities within the Plan Area

Facility	Acres Undeveloped	Acres Developed	Total Acres
Chico Area Recreation and Park District			
Dorothy Johnson Center/Park	-	3.0	3.0
Oakway Park	-	8.0	8.0
Peterson Park	-	4.1	4.1
Rotary Park	-	0.3	0.3
Hooker Oak Park	-	35.0	35.0
Community Park	-	40.0	40.0
DeGarmo Park	16.0	20.0	36.0
Little Chico Creek	-	15.6	15.6
CARD Community Center	-	3.0	3.0
Pleasant Valley Center/Pool	-	1.1	1.1
Shapiro Pool	-	0.44	0.44
Sycamore Field	-	3.5	3.5
<i>Subtotal</i>	16.0	130.89	146.89
Durham Recreation and Park District			
Durham Community Park	-	24.0	24.0
Ravekes Park	-	0.5	0.5
Louis Edwards Park	-	3.9	3.9
Nelson Park	-	2.0	2.0
Midway Park	-	3.9	3.9
Dwight Brinson Swim Center	-	-	-
Durham Memorial Hall	-	-	-
<i>Subtotal</i>		34.3	34.3
Feather River Recreation and Park District			
Mitchell Park	-	15.3	15.3
River Bend Park	27.43	56	83.43
Martin Luther King Park	-	5.58	5.58
Nelson Ballfield Complex	-	29.6	29.6
Forbestown Park/Community Center	-	3.67	3.67
Palermo Park	-	5.0	5.0
Playtown USA, Playground	-	-	-
Municipal Auditorium	-	1.16	1.16
Bedrock Park/Amphitheatre	-	3.75	3.75
Bedrock Tennis Courts	-	1.5	1.5
Bedrock Skate and Bike Park	-	0.75	0.75
Gary Nolan Sports Complex	-	14.2	14.2
Wildlife Ponds	100	-	100
<i>Subtotal</i>	127.43	136.51	263.94

Source: Butte County 2010, Table PUB-1.

Note: This table includes parks within incorporated and unincorporated Butte County that are owned and/or maintained by special districts. The table includes facilities that are within incorporated areas because they serve their entire community, which includes unincorporated areas.

- = none.

City of Biggs

Biggs has three small parks with a variety of amenities, such as ball courts, ball fields, picnic areas, playgrounds, restrooms, and a skatepark (City of Biggs 1998). Currently, no trails connect Biggs with levees, flood control lands, or public open spaces outside the community. The closest Class I bike trail is the Freeman Trail on the Thermalito Afterbay levee, approximately 2.5 miles away. A Class I bike trail is planned to connect Biggs to the Cherokee Canal levee to the northwest and the city of Gridley to the southeast. Class II bike trails have been planned leading from the city to the north, south, and east connecting the city to Cherokee Canal, Gridley, and Oroville Wildlife Area (Butte County 2007). Biggs does not have a boat ramp, water access, or fishing pier along the three levees closest to the city.

City of Chico

Parks, recreation, and open space resources, facilities, and services have historically been provided by both the City and the Chico Area Recreation and Park District (CARD). The City has primary responsibility for Bidwell Park (3,670 acres), the neighborhood parks, and for recreation programming and community parks. The city has 37 existing sites that are parks, open space, or recreation centers totaling 4,176 acres. (City of Chico 2011a.)

City of Gridley

Gridley has four parks and a boat ramp. Amenities at Gridley's parks include ball courts, ball fields, picnic areas, playgrounds, restrooms, and a skatepark. The boat ramp is located on the Feather River to the east of the city next to the city's water treatment plant. There is a shooting range located at the boat ramp. Currently, no trails connect Gridley with levees, flood control lands, or public open space outside the community. The closest Class I bike trail is the Freeman Trail on the Thermalito Afterbay levee, approximately 5 miles away. A Class I bike trail is planned to connect Gridley to the Cherokee Canal levee via Biggs (Butte County 2007). Other Class II bike lanes have been planned leading from the city to the north, south, east, and west connecting the city to Biggs, Live Oak, the Feather River, and Gray Lodge Waterfowl Management Area (Butte County 2007).

City of Oroville

The City of Oroville has 37 existing parks, recreational facilities, and open space within its city limits. The city parklands encompass approximately 280 acres, while the Feather River Recreation and Parks District and the California Department of Parks and Recreation parklands encompass approximately 250 acres. The city has an extensive network of existing trails for walking, hiking, jogging, and horse riding. For example, the California Hiking and Equestrian trail, comprised of segments known as the Dan Beebe Trail and the Bridle Trail, owned and maintained by the owned and maintained by the California Department of Parks and Recreation, is the longest recognized trail within the city. There are less formally recognized trails and paths used by residents, including trails within the Oroville Wildlife Refuge. (Oroville 2011.)

Visual Character and Quality

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1988). *Scenic quality* can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). *Viewer response* is a

combination of viewer exposure and viewer sensitivity. *Viewer exposure* is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. *Viewer sensitivity* relates to the extent of the public's concern for a particular viewshed.

Visual character of an area or view is comprised of its natural and artificial landscape features, such as its geology, hydrology, flora and fauna, recreational facilities, and urban setting (development such as roads, utilities, structures, earthworks, and the results of other human activities). The visual quality of a view is evaluated based on the relative degree of vividness, intactness, and unity, as modified by viewer sensitivity, a well-established approach to visual analysis adopted by the Federal Highway Administration (FHWA) (Federal Highway Administration 1988; Jones et al. 1975). High-quality views are highly vivid and relatively intact and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity. The measure of the quality of a view is tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

Plan Area

The Plan Area is in western Butte County within California's Sacramento Valley (valley) (Figure 2-1). The city of Biggs and the other smaller communities of Palermo, Richvale, Nelson, and Durham are located off of SR 99, on local roadways in the Plan Area. Chico is the largest city in the Plan Area and is connected by SR 99 and SR 70 to the smaller cities of Gridley and Oroville. Overall, a mix of developed and natural landscapes characterizes the Plan Area. The overall landscape pattern of the Plan Area is characterized by sprawling development, major roadways, and the agricultural land, mountains, and waterways of the region. Viewers include residents, local business employees, roadway users, and recreational users.

Given that much of the land is in agriculture (44% of the Plan Area), an agriculture landscape is the dominant visual resource in the area. A patchwork of fields surround the suburban outskirts of cities and communities, separating developed areas. These fields offer expansive views that, when haze is at a minimum, extend over agricultural fields and recent development in the foreground to the middleground and background. Because of agriculture's dominance in the region, views of agriculture are considered to be moderately high in vividness; they are relatively intact because agriculture covers a large area of land; and, these views show a high degree of visual unity because of the large area agriculture encompasses and because the primary agricultural crop, rice, generally looks the same to all viewers and from any location.

Mountains and waterways are also a notable feature in the Plan Area. The Sutter Buttes, located outside of the Plan Area, can be seen vividly rising up from the flat valley floor in the foreground, middleground, and background. Views of Mount Vaca and the Coast Ranges to the west can often be seen, as well as background views to the Sierra Nevada foothills to the east. The Thermalito Forebay and Afterbay (approximately 2.5 miles north of Biggs) and the Sacramento Feather Rivers can also be seen in the Plan Area. The views of the mountains and rivers are moderately high in vividness because of their location against the flat valley floor, possess a high degree of visual unity, but are less intact depending on intervening atmospheric haze or vegetation.

While much of the Plan Area is still in agricultural production, there has been and continues to be an increasing conversion of agricultural land to suburban land uses. This trend is evident around the outskirts of Gridley and Oroville. These agrarian communities have grown slowly over the past

decade, which slowly changes the visual character from rural to suburban. Development in the region is typified by a growing core of residential, commercial, and some industrial land uses with agricultural fields surrounding the city outskirts. Older residential and commercial areas in the region are often distinct, having a wide vernacular of architectural styles, development layouts, and visual interest. Newer residential and commercial development, however, tends to be homogenous in nature, having similar architectural styles, building materials, plan layouts, and commercial entities, and development often lacks a distinctive character from one city to the next. Both natural and human-made waterways and bypasses help limit development by serving as physical and natural resource barriers. Generally, urban visual character and quality are moderate to moderately low in vividness because of a range in quality of the built environment, depending upon location, when compared to agricultural or natural landscapes. Views are typically much less intact due to intervening buildings, vegetation, or other physical impediments that block viewers' line of sight and exhibit a low degree of visual unity because of the different kinds of infrastructure and architectural styles that intermix within urban development.

City of Biggs

The visual character and quality of the city of Biggs is comprised of the different land uses within and surrounding the city and the area's wide variety of topography. The land uses are primarily residential and farming-supporting. The City has largely maintained the compact urban form upon its original plan. The majority of the city's residential housing was constructed post-World War II and utilized the basic lot-and-block layout of the original city parcel map. Infill continues to take place in the original urban footprint. Industrial buildings and uses that are slightly lower density are located closer to the outer edges and primarily in the southwestern portion of the city. The western edge of the city is the beginning of a large area of active, irrigated agricultural land, mainly used for rice cultivation. The topography is flat and expansive. The areas to the north and south are characterized by flat topography comprised of larger lot rural residential development and isolated agricultural and grazing areas. The areas to the east are predominantly used for tree crops; while topography is flat, the views are made up of vegetation and are interrupted by trees (City of Biggs 2011).

As described above under Plan Area, views of the natural landscape and agricultural landscape are typically moderately high in vividness, relatively intact, and show a high degree of visual unity. Generally, urban visual character and quality are moderately to moderately low in vividness, typically much less intact, and exhibit a low degree of visual unity. However, As stated in the City of Biggs Draft Community Enhancement Element (insert citation), "The urban form of the downtown area is reflective of a compact style, with buildings generally extending to the street in the front and having limited to no setbacks or open areas between adjacent buildings. The collective style of the downtown core is reflective of the age and evolution of the city's nonresidential center."

The organization of the Biggs downtown urban form results in a higher degree of visual unity.

City of Chico

Chico's natural attributes, such as agriculture, foothills, trees, and creeks have all contributed to its shape and urban form. These attributes, the various land uses (e.g., suburban, urban, agriculture), development patterns, and streets contribute to the overall visual character and quality of the city. The City places a high value on the scenic open space and fertile agricultural lands that contribute to its character. The abundance of open space, park land, stream corridors, and unique habitats all

contribute to Chico's diverse visual patterns. The city has retained its distinct small town character by preserving the urban fabric of the downtown; however, the differences between the development patterns in the newer and older areas of the city are distinct. The original grid pattern of the city streets and unique architecture in the downtown core and surrounding older neighborhoods provide a distinct contrast to the post-World War II development with arterial streets and diverse architectural styles and forms (City of Chico 2011a).

As described above under *Plan Area*, views of the natural landscape and agricultural landscape are typically moderately high in vividness, relatively intact, and show a high degree of visual unity. Generally, urban visual character and quality are moderately to moderately low in vividness, are typically much less intact, and exhibit a low degree of visual unity. However, the higher density of the urban uses in the middle of the city on the original city grid pattern of the city likely results in a higher degree of visual unity based on the grid organization of the streets and adjacent buildings.

City of Gridley

The visual character and quality of the City of Gridley is comprised mainly of its small-town character and surrounding agricultural uses. The topography is predominately flat, affording views of rural residential homes, downtown areas, SR 99, and surrounding agricultural areas, and expansive views of the Sierra Nevada and Sutter Buttes, depending on the location of the viewer (City of Gridley 2010). The most prominent regional scenic resource viewable from the city is the Sutter Buttes. The Sutter Buttes are approximately 6 miles to the southwest and are close to 1,800 feet higher in elevation than the city (City of Gridley 2009).

Surrounded by orchards and field crops, Gridley has distinct edges as its urban area meets the neighboring agricultural lands and open space. The city is organized on a grid street pattern with large tree and residences. The downtown is surrounded on the east and west by historic residential areas with a diverse set of building types and sizes and newer commercial development along SR 99. Industrial land uses are less visually prominent in the core areas of the city and are primarily located along SR 99. (City of Gridley 2010.)

As described above under *Plan Area*, views of the natural landscape and agricultural landscape are typically moderately high in vividness, relatively intact, and show a high degree of visual unity. The views of the Sutter Buttes are also highly vivid because of their location against the flat valley floor, but are less intact depending on intervening atmospheric haze or vegetation, and possess a high degree of visual unity based on their unique geologic formation. Generally, urban visual character and quality are moderate to moderately low in vividness; are typically much less intact; and exhibit a low degree of visual unity.

City of Oroville

The visual character and quality of the city of Oroville is comprised of the different land uses within and surrounding the city and the wide variety of topography of the area. The land uses are primarily wildlife and nature preserves, agricultural uses, and urban or suburban uses. Oroville has a number of scenic resources in the form of wildlife and nature preserves and prominent land formations. Oroville also has multiple prominent, identifiable land forms, including Table Mountain and the Sierra Nevada foothills. Table Mountain is a large, flat-topped mountain located north of Oroville and highlight visible from many parts of the city and surrounding area. Some parts of the city have views toward the foothills to the east. Preserves in the city are to be maintained in their form, character, and use and provide different visual character and qualities, such as highly vegetated

areas and variable topography interspersed with views of various water resources. Along the Feather River and Oroville Dam (e.g., Feather River Wildlife Preserve and Oroville Wildlife Refuge Preserve), are preserves, a nature center, and a native plant park that provide scenic vistas of the Feather River.

Along with the varied topography, vegetation, and wildlife that preserves and water resources provide, agriculture and urban and suburban uses also shape Oroville's visual character and quality. Row crops and rice fields are predominant in the mostly flat areas in the northwest portion of the city and the City's sphere of influence. There are small olive groves on the hillsides in the southeastern portion and citrus orchards in the southwestern corner. The urban and suburban uses are comprised of a variety of building types and are primarily concentrated (i.e., higher density) in downtown and along SR 99, with less concentrated development and larger lot sizes for homes and businesses away from the downtown. (City of Oroville 2009a.)

As described above under *Plan Area*, views of the natural landscape and agricultural landscape are typically moderately high in vividness, relatively intact, and show a high degree of visual unity. Views of Table Mountain and the Sierra Nevada are highly vivid because of their location frames and backdrops against the flat valley floor, but are less intact depending on intervening atmospheric haze or vegetation, and possess a high degree of visual unity based on their unique geologic formation. Generally, urban visual character and quality are moderate to moderately low in vividness, typically much less intact, and exhibit a low degree of visual unity.

Scenic Highways

Scenic highways add to the visual character and quality of a landscape or area; however, since they are addressed by a separate threshold in the impact analysis, they are discussed separately here.

There are no highways in or near the Plan Area that are designated in federal or state plans as scenic highways worthy of protection for maintaining and enhancing scenic viewsheds. SR 70 is an Eligible State Scenic Highway, but is not officially designated for protection (Scenic Byways 2013; California Department of Transportation 2013).

Figure COS-8 in General Plan 2030 identifies county-designated scenic highways. Most of the county-designated scenic highways are west of the Plan Area boundaries in the mountains. However, a small section of SR 70 north of the SR 149 intersection is located in the Plan Area (Cascade Foothill CAZ) (Butte County 2012).

The City of Biggs, Chico, City of Gridley, and the City of Oroville general plans have no locally designated scenic highways or roads (City of Oroville 2008; City of Gridley 2009; City of Chico 2010; City of Biggs 2011).

Scenic Vistas

Scenic vistas add to the visual character and quality of a landscape or area; however, because scenic vistas are addressed by a separate threshold in the analysis, they are discussed separately here.

The county does not have any designated scenic vista locations. However, the vegetation in the foothills along the eastern edge of the Plan Area and adjacent to the Plan Area (in the Cascade Foothills CAZ, and the Sierra Foothills CAZ) is primarily grasslands and chaparral. Consequently, according to General Plan 2030, the foothills provide important scenic vistas along river and creek

canyons and out across the Sacramento Valley, such as the views from the Skyway, Neal Road, and SR 70 (Butte County 2010).

The City of Biggs General Plan does not specifically designate any scenic vistas or important views within or outside the city (City of Biggs 2011).

The city of Chico does not have any designated scenic vista locations; however, the City considers views of the transition between landscapes (Sierra Nevada foothills to the east and Central Valley to the west), the agricultural landscape, the foothills and the rising elevations to the east of Chico, the major creeks, and Bidwell Park as scenic vista areas (City of Chico 2011b).

The City of Gridley considers views of the Sutter Buttes a scenic vista; the Buttes are also seen from other parts of the Plan Area (City of Gridley 2009).

The City of Oroville considers Table Mountain and views of the foothills as scenic vistas, which are seen from other areas within the Plan Area (City of Oroville 2009b).

Viewer Groups and Viewer Responses

The primary viewer groups in the Plan Area are persons living or conducting business in the Plan Area; travelers using highways and smaller local roads (including those on levee crowns); and recreational users (including boaters, beachgoers along the Sacramento and Feather Rivers, and anglers using canals, creeks, and rivers; trail users; equestrians; bicyclists; and joggers). All viewer groups have direct views of the Plan Area, depending on whether they are located in urban, suburban, or more rural areas.

Residents

Suburban and rural residents are located throughout the Plan Area. Suburban residences are mostly oriented inward toward the developments, and only residences on the outer edge of the developments have middleground and background views of the surrounding landscape. The separation and orientation of rural residences allow inhabitants to have direct views over agricultural fields to surrounding areas. Both suburban and rural residents are likely to have a high sense of ownership over their adjacent views, the inherent scenic quality of such views, and the open space surrounding them and the recreational opportunities it provides.

Residents are considered to have high sensitivity to changes in the viewshed because of their long-term exposure to such views and sense of ownership.

Businesses

Viewers from industrial, commercial, government, and educational facilities have semipermanent views from their respective facilities. Situated in different locations throughout the Plan Area, these facilities' views range from views limited by their surroundings (e.g., buildings and landscaping or forest) to sweeping views that extend out to the background. Employees and users of these facilities are likely to be occupied with their work activities and tasks at hand, and pay relatively little attention to the views during working hours.

Because of their limited viewing times, their focus on tasks at hand, this viewer group is considered to have moderate sensitivity to changes in views.

Roadway Users

Roadway users' vantages differ based on the roadway they are traveling and elevation of that roadway. The majority of views are mostly limited to the foreground by suburban, commercial, and industrial development; vegetation; and levees. Views to the middleground and background are present but are limited to areas where structures that otherwise would conceal background views from the roadway are set back. However, if the vantage is elevated, as on portions of SR 99, bridges crossing over the waterways, levee roads, and other local roadways, most views of the surrounding mountain ranges (Vaca Mountains, Coast Ranges, and Sierra Nevada), waterways (Sacramento and Feather Rivers, Sutter Bypass when flooded, etc.), and open space areas (e.g., agricultural areas, parkways) are only partially obstructed by the rooflines and mature vegetation in the Plan Area.

Travelers use roadways at varying speeds; normal highway and roadway speeds differ based on speed limits and the traveler's familiarity with the route and roadway conditions (e.g., presence/absence of rain). Single views typically are of short duration, except on straighter stretches where views last slightly longer. Viewers who frequently travel these routes generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic.

Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with a high regard and as a holistic visual experience. Scenic stretches of roadway passing through the Plan Area offer sweeping views of the surrounding area that are of interest to motorists, especially when traveling on the bridges or levee tops or on ascending/descending climbs in the Sierra Nevada foothills that can offer views out to the surrounding landscape.

For these reasons, viewer sensitivity is moderate among most roadway travelers, although higher for those who are traveling specifically for scenic views, as described above.

Recreational Users

Recreational users view the Plan Area from parks, waterways, roadways, trails, and from levees. Recreational uses consist of boating and fishing on local waterways; hunting in the bypasses; birding; and walking, running, jogging, and bicycling along trails, levee crowns, and local roads. Users accessing waterway edges and bypasses are likely to seek out natural areas, such as vegetated areas, sand and gravel bars, and beaches, in addition to using the waterways as a resource. Those on waterways have differing views based on their location in the landscape and are accustomed to variations in the level of land uses and activities taking place in the Plan Area. The amount of vegetation present along waterways creates a softened, natural edge that is enjoyed by all recreational users. Recreational users walking, running, jogging, and bicycling along trails, levee crowns, and local roads also have differing views based on their location in the landscape and are accustomed to variations in the level of land uses and activities occurring within the Plan Area. Local recreational users also have a high sense of ownership over the waterways and corridors they use, and these areas are highly valued throughout the Plan Area.

Viewer sensitivity is high among recreational users using the Plan Area because they are more likely to highly value the natural environment, appreciate the visual experience, have a high sense of ownership, and be more sensitive to changes in views.

13.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for recreation, open space, and visual resources in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).¹ The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

13.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on recreation, open space, and visual resources are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on recreation, open space, and visual resources.

It is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified such that impacts would be adequately mitigated to the extent identified in the general plan EIRs. Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on recreation, open space, and visual resources could occur primarily during construction or maintenance of these activities.

Activities within Local Jurisdictions

Recreation and Open Space

In adopting the EIRs for the local general plans, the Local Agencies—with the exception of the City of Gridley—determined that implementation of the general plan, including its policies and identified mitigation measures, would have no impact or a less-than-significant impact on recreation. The City of Gridley determined that significant and unavoidable impacts would result from the expected population increase and increased use of recreation facilities associated with that population increase. It is assumed that all activities approved by the Local Agencies would be consistent with the policies of their respective general plans and would be subject to any required mitigation measures to adequately mitigate impacts.

¹ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

Visual Resources

In adopting the EIRs for the local general plans, the Local Agencies (except for the Cities of Gridley and Chico) determined that implementation of general, including its policies and identified mitigation measures, would have no impact or a less-than-significant impact on visual resources. The City of Gridley determined significant and unavoidable impacts would result from the expected changes in visual character and quality, scenic vistas, and light and glare from the conversion of agriculture or open space to urban or suburban development. In addition, the City of Chico determined there would be significant and unavoidable impacts resulting from the expected changes in visual character and quality in its planning area resulting from the conversion of agriculture or open space to urban or suburban development. It is assumed that all activities approved by the participating local jurisdictions would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified such that impacts would be adequately mitigated.

Activities outside Local Jurisdictions, Conservation Strategy Activities, and Conservation Measure Activities

Recreation and Open Space

This EIS/EIR contains a qualitative impact analysis for activities outside of the local jurisdiction of the Local Agencies. These activities include those of the water districts and irrigation districts and those that would take place as part of the proposed action's conservation strategy and conservation measures that could result in physical environmental changes. The qualitative analysis addresses beneficial and adverse impacts by discussing how implementation of the alternatives could potentially affect recreational opportunities and open space (i.e., their compatibility with biological goals and biological measureable objectives). The analysis includes a discussion of impacts on recreation and open space that may result from the removal or addition of lands for any BRCP conservation activity or covered activity. The baseline setting for recreational and open space is compared against the expected changes to the use of existing recreational facilities and the construction of new recreational opportunities under the various covered activities by alternative. A determination is made based on the general qualitative magnitude of the change if impacts on recreational resources and open space would be significant, less than significant, or would not occur.

Visual Resources

This EIS/EIR contains a qualitative impact analysis for activities outside of the local jurisdiction of the Local Agencies. These activities include those of the water districts and irrigation districts, Caltrans and BCAG transportation projects outside of City jurisdictions, and those that would take place as part of the proposed action's conservation strategy and conservation measures that could result in changes in the aesthetic setting. The baseline visual setting is compared against the expected changes to the scenic highways, scenic vistas, visual character and quality, and light and glare under the various covered activities by alternative. A determination is made based on the general qualitative magnitude of the change if impacts to visual resources would be significant, less than significant, or would not occur.

13.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- 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.
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

13.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, project proponents would apply for permits on a project-by-project basis, without coordinated effort to minimize biological impacts through the Plan Area. Under Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). These projects include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g., bridge replacements). No regional conservation strategy or conservation measures would be implemented; therefore, impacts on recreation and visual character and quality associated with the conservation strategy and conservation measures would not occur

Impact REC-1: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and the Cities of Biggs, Chico, and Oroville determined that the implementation of the general plans would result in no impact or less-than-significant impacts associated with increased use of existing neighborhood and regional parks or other recreational facilities (City of Oroville 2009b; Butte County 2010; City of Chico 2010; City of Biggs 2013). These Local Agencies made these determinations because (1) general plan implementation would include additional recreational facilities so there would be no deterioration of existing neighborhoods or regional parks; (2) the goals, policies, and actions of the general plans would result in maintaining and protecting existing parks; or (3) the Local Agencies already have sufficient parkland, and general plan implementation would not substantially decrease this existing parkland.

The City of Gridley determined that the approval of its general plan, and the physical activities associated with the implementation of the general plan, would result in significant and unavoidable impacts on recreational facilities. Although population growth is expected to take place in the city, general plan goals, policies, and actions require parkland standards be met that would result in a substantial increase in the use of existing parks such that substantial physical deterioration of the facility would occur or be accelerated.

The activities of water districts and irrigation districts would not increase the use of existing parks or other recreational facilities. These activities would typically be performed within the service districts of the water and irrigation districts. The service districts are located outside the boundaries of the cities and, therefore, would not result in impacts on parks or recreational facilities in the cities. The water district and irrigation district service boundaries have some overlap with the Durham Recreation and Park District and the Richvale Recreation and Park District within the Plan Area. Since the specific location of the activities is unknown, it would be speculative to identify which parks or recreational facilities in those two recreation and park districts may be affected. However, given the types of activities that the water districts and irrigation districts would perform under Alternative 1, it is anticipated they would not increase the use of existing neighborhood and regional parks or other recreational facilities. The districts' activities primarily involve providing irrigation water for agriculture; these activities would not increase population in the service district area, and increasing population is one of the main mechanisms for an increased use of existing neighborhood or regional parks.

Furthermore, if construction and maintenance associated with water district and irrigation district activities occurred within close proximity to an existing park or recreational facility, these activities would occur infrequently (e.g., once every 5 years or once every 4 to 5 years). They would also tend to occur during the winter (e.g., September–December or late January–early April) when there is generally low use of outdoor parks and recreation facilities. Thus, these covered activities would only present a temporary effect on the existing park or recreational facility such that patrons would likely continue to use the park or facility, or patron use would be low because of the season (e.g., winter). Therefore, it is not anticipated the activities associated with water or irrigation districts would result in the increased use of existing recreational facilities.

NEPA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in a substantial increase in the use of existing recreational facilities because of population growth, thereby leading to deterioration of recreational facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in a substantial increase in the use of existing recreational facilities because of population growth, thereby leading to deterioration of recreational facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less than significant levels. Consequently, the impact would be significant and unavoidable.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County of Butte and Cities of Biggs, Chico, and Oroville concluded that although site-specific impacts could not be determined at the general plan level, their general plan goals, policies, and

actions would ensure that significant impacts associated with construction or expansion of recreational facilities as a result of implementation of the general plans would be less than significant (City of Oroville 2009b; City of Chico 2010; Butte County 2010; City of Biggs 2013). However, the City of Gridley determined that there would be substantial adverse impacts related to parks and recreational facilities, as discussed above in Impact REC-1.

The water districts' and irrigation districts' activities would include the construction and maintenance of piping, water delivery structures, canals, or the trimming of vegetation along service roads, and would not include or require the construction or expansion of recreational facilities.

NEPA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in a substantial increase in the use of existing recreational facilities because of population growth, thereby resulting in the potential need for new or expanded facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in a substantial increase in the use of existing recreational facilities because of population growth, thereby resulting in the potential need for new or expanded facilities. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact REC-3: Have a substantial adverse effect on a scenic vista (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County of Butte and Cities of Biggs, Chico, and Oroville determined that the implementation of their general plans—and thus, activities that would occur under their general plans—would result in no impact or less-than-significant impacts on a scenic vista (City of Oroville 2009b; City of Chico 2011b; Butte County 2010; City of Biggs 2013). The goals, objectives, and actions of the general plans would not result in significant impacts on scenic vistas and would seek to maintain designated scenic views or vistas (e.g., Feather River and Table Mountain), or continued implementation of the Municipal Code in the various jurisdictions would result in no substantial adverse effect on scenic vistas.

However, the City of Gridley determined that the approval of its general plan, and the physical activities associated with the implementation of the general plan, would result in significant and unavoidable impacts on scenic vistas. Views of the Sutter Buttes, considered a scenic vista in Gridley, could be partially or totally blocked by future urban land uses in Gridley. Converting agricultural lands to urban lands would also permanently alter foreground and background views of the Sutter Buttes for vehicles traveling along SR 99.

The water districts' and irrigation districts' activities would require construction that could result in temporary alterations to the baseline visual setting. However, the service districts are located in parts of the county where the visual setting is highly dominated by agriculture and typically oriented away from viewers that would be highly sensitive to changes in the visual setting or scenic vistas (e.g., residents or recreationists). Furthermore, the majority of these activities are actually performed to maintain the baseline conditions (e.g., remove aquatic vegetation from canals to maintain an open irrigation channel), and many of these activities are already part of the baseline

visual setting (i.e., water districts and irrigation districts are already conducting these activities to maintain their canals and infrastructure); thus, these activities would not affect a scenic vista.

Some transportation projects, such as those capacity-enhancing projects on SR 99, would result in short term changes to the visual character and quality of the Plan Area during construction. Activities such as grading operations requiring the movement of heavy equipment on roadways during limited construction periods would occur. The construction areas would generally be small compared to the larger visual setting of the county, and the construction periods would be of limited duration. It is unlikely these construction impacts would block or alter scenic resources of the Plan Area for extended periods of time. Furthermore, viewer sensitivity is moderate among most roadway travelers, and they are not likely to experience substantial adverse effects on their visual setting as a result of construction equipment or staging areas. Once the roadways have been upgraded or modified, they would generally be flat and would not result in the blocking or altering of a scenic resource. Therefore, it is anticipated that Caltrans and other BCAG transportation projects would not substantially and adversely affect scenic resources of the Plan Area.

NEPA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in a substantial adverse effect on scenic vistas as a result of blocking views of the Sutter Buttes. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in a substantial adverse effect on scenic vistas as a result of blocking views of the Sutter Buttes. Implementation of Gridley's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

Impact REC-4: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (NEPA: less than significant; CEQA: less than significant)

There are no state scenic highways designated in the Plan Area. SR 70 is eligible for designation but has not been designated. Therefore, substantial damage to scenic resources along a state scenic highway would not occur. Furthermore, the Cities of Oroville, Chico, Biggs, and Gridley do not have locally designated scenic highways. The County's General Plan 2030 and Zoning Ordinance locally designate several scenic highways within the Plan Area as described in Section 13.1.2, *Environmental Setting*. And the County's General Plan 2030 describes scenic highway overlay zones (Figure COS-9 of County General Plan 2030). However, the County general plan EIR (2010) concludes that the general plan's goals, policies, and actions (e.g., Goal COS-18) would avoid significant impacts related to the locally designated scenic highways.

Caltrans and BCAG would undertake several capacity enhancing improvements on roadways in the Plan Area and other roadway improvements under Alternative 1. Specifically, the County would upgrade the rural intersection of Pentz Road at Durham-Pentz Road. Pentz road is part of a scenic highway overlay zone as identified on Figure COS-09 of the County General Plan 2030. The improvements would include installation of traffic signals or widening of the roadway to accommodate the creation and/or extension of intersection turn lanes and through lanes, as well as bicycle and pedestrian facilities (e.g., bike lanes, crosswalks, islands). The improvements may require a 3-acre construction footprint, including a staging area. However, during construction, any

effects on scenic resources in the area would be temporary, and the upgrade of a rural intersection would, overall, not substantially damage scenic resources because it would not substantially change the visual connectivity of the intersection with the surrounding environment. Furthermore, as identified in the County general plan EIR (2010) the general plan's goals, policies, and actions (e.g., Goal COS-18) would avoid significant impacts related to the locally designated scenic highways. No other Caltrans or County roadway improvement projects would occur on locally designated scenic highways or highway overlay zones.

Activities associated with the water districts or irrigation districts are not anticipated to take place along the locally designated scenic highways. These activities would take place within the service areas of the water districts or irrigation districts, and there are no locally designated scenic highways in these areas (Figure COS-8 of County General Plan 2030).

NEPA Determination: Alternative 1 would not result in substantial damage to scenic resources along a scenic highway because there are no officially designated scenic highways in the Plan Area, and implementation of the Local Agency general plans would avoid impacts on locally designated scenic highways. Therefore, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 1 would not result in substantial damage to scenic resources along a scenic highway because there are no officially designated scenic highways in the Plan Area and implementation of the Local Agency general plans would avoid impacts on locally designated scenic highways. Therefore, impacts would be less than significant. No mitigation is required.

Impact REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and Cities of Biggs and Oroville determined that the implementation of their general plans—and thus, activities that would occur under their general plans—would not degrade the existing visual character or quality of the plan areas and their surroundings (City of Oroville 2009b; Butte County 2010; City of Biggs 2013). The goals, objectives, and actions of the general plans would not result in a substantial degradation to the existing visual character or quality of the planning areas (City of Oroville 2009b; Butte County 2010).

However, the Cities of Chico and Gridley determined that the expected changes in visual character and quality in the planning areas resulting from the conversion of agriculture, open space, or vacant or undeveloped land to urban or suburban development as the plan areas are built out would have a significant impact on existing visual character and quality. The City of Gridley determined that the general plan's purpose is to provide a framework for governing the development of the very urban land uses that would convert existing agricultural land in the City and its planning area. The City of Chico concluded that the introduction of urban uses into designated special planning areas, which are currently vacant undeveloped land, would result in changes to the visual resources those lands currently provide. (City of Gridley 2009; City of Chico 2011b.)

Water districts' and irrigation districts' activities would not substantially degrade the existing visual character or quality of the Plan Area. As discussed in REC-3, the water districts' and irrigation districts' service areas are located in parts of the county where the visual setting is highly dominated by agriculture and typically oriented away from viewers that would be highly sensitive to changes in the visual setting or scenic vistas (e.g., residents or recreationists). Furthermore, many of the water districts' and irrigation districts' activities are already part of the baseline visual setting (i.e., water

districts and irrigation districts are already conducting these activities to maintain their canals and infrastructure).

Some transportation projects, such as those capacity-enhancing projects on SR 99, would result in short-term changes to the visual character and quality of the Plan Area during construction as described in REC-3. However, construction areas would generally be small compared to the larger visual setting of the county, and construction periods would be of limited duration. Furthermore, viewer sensitivity is moderate among most roadway travelers, and they are not likely to experience substantial adverse effects on their visual setting as a result of construction equipment or staging areas. Once the roadways have been upgraded or modified, they would generally be flat, with potentially new signage or intersection lights, and would not result in the substantial degradation of the visual quality or character of the Plan Area as they would complement the existing roadway infrastructure. Therefore, it is anticipated that Caltrans and other BCAG transportation projects would not substantially degrade the existing visual character or quality of the Plan Area.

NEPA Determination: Under Alternative 1, implementation of the City of Gridley's and the City of Chico's general plans would result in a substantial degradation of the existing visual character and quality of their jurisdictions, primarily as a result of the conversion of agricultural and open space lands to urban lands. Implementation of Gridley's and Chico's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Under Alternative 1, implementation of the City of Gridley's and the City of Chico's general plans would result in a substantial degradation of the existing visual character and quality of their jurisdictions primarily as the result of the conversion of agricultural land and open space to urban lands. Implementation of both Gridley's and Chico's general plan policies or mitigation measures would not reduce these effects to less-than-significant levels (City of Gridley 2009; City of Chico 2011b). Consequently, the impact would be significant and unavoidable.

Impact REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The County and Cities of Biggs, Chico, and Oroville determined that the implementation of the general plans—and, thus, activities that would occur under the general plans—would result in no impact or less-than-significant impacts on creating new sources of substantial light or glare. The goals, policies, and actions of the general plans, as well as the municipalities codes that restrict light and glare of new development, would prevent new sources of substantial light and glare. (City of Oroville 2009b; City of Chico 2010; Butte County 2010; City of Biggs 2013.)

However, the City of Gridley determined that the approval of its general plan, and the physical activities associated with the implementation of the general plan, would result in significant and unavoidable impacts by increasing nighttime lighting and daytime glare. New urban development would increase the amount of nighttime light and daytime glare and would introduce a new source of nighttime lighting in existing rural areas (City of Gridley 2009).

The water districts' and irrigation districts' service areas may result in some new sources of light and glare associated with replacement of larger water delivery structures (e.g., large weirs). During this replacement, new security or safety lighting could be incorporated, but it is anticipated that

effects would not be adverse because the districts would install only the minimum amount of lighting necessary to provide safety and security.

NEPA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in substantial new sources of light and glare due to the increase in urban land uses. Implementation of the City's general plan policies or mitigation measures would not reduce these effects to a less-than-significant level. Consequently, the impact would be significant and unavoidable.

CEQA Determination: Under Alternative 1, implementation of the City of Gridley's general plan would result in substantial new sources of light and glare due to the increase of urban land uses. Implementation of the City's general plan policies or mitigation measures would not reduce these effects to a less-than-significant level (City of Gridley 2009). Consequently, the impact would be significant and unavoidable.

Alternative 2—Proposed Action

As discussed in Section 13.2.1, *Methods for Impact Analysis*, covered activities within the jurisdiction of the Local Agencies have been analyzed in previous CEQA documents that are incorporated by reference. These types of covered activities are incorporated into Alternative 2 and are described in Chapter 2, Section 2.3.2, *Alternative 2—Proposed Butte Regional Conservation Plan (Permit Issuance/Plan Implementation)*. These covered activities include development or maintenance of residential, commercial, public, or industrial facilities; recreational facilities; transportation facilities; pipeline facilities; utility service and waste management facilities; and flood control and stormwater management facilities. The following analysis of Alternative 2 references the Alternative 1 analysis because impacts for these BRCP covered activities would be the same.

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operation-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics including small projects or infill projects.

The conservation strategy and conservation measures have not been analyzed in previous CEQA documents and include habitat management and enhancement, habitat restoration, general maintenance, avoidance and minimization measures, and species population enhancement. Not all conservation measures would result in physical changes to the environment, thus the following conservation measures have the potential, either during construction or maintenance, to impact recreational and/or visual resources: CM1, CM4–CM14. The remaining conservation measures are not anticipated to result in physical changes to the environment and thus would have very low potential or no potential to affect recreation, open space, or visual resources; therefore, they are not discussed below. Furthermore, the BRCP specifically allows recreational uses on BRCP conservation lands where compatible with the conservation goals for those lands.

Impact REC-1: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies and water and irrigation districts, on existing parks or other recreational facilities and within the water districts' and irrigation districts' service areas would be the same as those described for Alternative 1 under Impact REC-1.

The conservation strategy and conservation measures would not increase the use of existing parks or other recreational facilities. These conservation activities would not result in an increase in population in the Plan Area, and population increase is the primary mechanism for increased use of existing neighborhood and regional parks or other recreational facilities.

The conservation, preservation, and restoration of large, contiguous patches of oak woodland and savanna (with a total protection target of approximately 20,000 acres within the Sierra Foothills and Cascade Foothills CAZs) are anticipated to support mule deer, which are enjoyed by wildlife viewers. The conservation strategy would protect CDFW-designated crucial winter range, the most important habitat for this species. Although CM5 (along with CM2 and CM6, which do not include physical activities) may prohibit access and recreational activities (e.g., rock climbing, hang gliding) in important nesting areas to prevent disturbance of nesting peregrine falcons, overall, it is anticipated the conservation strategy would actually increase the recreational opportunities for the public in the Plan Area.

NEPA Determination: Under Alternative 2, the conservation strategy is anticipated to increase the recreational opportunities for the public in the Plan Area. However, as identified for Alternative 1, implementation of the City of Gridley's general plan would result in unavoidable impacts on parks or other recreational facilities. Gridley would be responsible for implementing its own general plan goals, policies, and actions; however, implementation would not reduce impacts to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

CEQA Determination: Under Alternative 2, the conservation strategy is anticipated to increase the recreational opportunities for the public in the Plan Area. However, as identified for Alternative 1, implementation of the City of Gridley's general plan would have a significant impact on parks and other recreational facilities. Gridley would be responsible for implementing its own general plan goals, policies, and actions; however, implementation would not reduce impacts to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies and water districts and irrigation districts related to the environmental effects of construction or expansion of recreational facilities would be the same as those described for Alternative 1 under Impact REC-2.

The conservation strategy and conservation measures would not include the construction of specific recreational facilities that would have an adverse physical effect on the environment.

NEPA Determination: Under Alternative 2, the conservation strategy would not result in effects related to the environmental effects of construction or expansion of recreational facilities; however,

implementation of the City of Gridley's general plan would result in unavoidable impacts in this area. Gridley would be responsible for implementing its own general plan goals, policies, and actions; however, implementation would not reduce impacts to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

CEQA Determination: Under Alternative 2, the conservation strategy would not result in effects related to the environmental effects of construction or expansion of recreational facilities; however, implementation of the City of Gridley's general plan would result in unavoidable impacts in this area. Gridley would be responsible for implementing its own general plan goals, policies, and actions; however, implementation would not reduce impacts to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Impact REC-3: Have a substantial adverse effect on a scenic vista (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies and water districts and irrigation district on scenic vistas would be the same as those described for Alternative 1 under Impact REC-3.

The conservation strategy and conservation measures could have a beneficial or negative effect on scenic vistas depending on the location of the activities. Conservation of natural and agricultural lands will be beneficial in maintaining open vistas and protecting views of open space and farmland from urban or other types of development. Natural areas are rarer scenic features in the Plan Area, and restoration of natural vegetation would increase visual diversity. In general, restored habitat would create visual interest and would generally not block background views. Restoration actions could also result in the creation of new scenic vistas, perhaps through the removal of existing agricultural tree rows and the establishment of vista points at specific locations or viewing opportunity areas along newly created recreational trails. However, at some sites, the restoration of agricultural lands to riparian forest could block long-distance vistas from scenic vista areas. For example, riparian forest plantings installed along a river or creek segment where roadway travelers currently have open vistas of the waterway would mature and result in more restricted views of the river and vistas beyond.

After completion of construction activities necessary for restoration, areas surrounding the restored/enhanced area may be denuded of vegetation or appear to be so from a distance because immature planted vegetation would be similar in appearance to tilled or newly planted agricultural fields. The sites would be in a transitional state, and over a period of 1 to several years, plant species would mature, and vegetation would recolonize the sites. The restored sites would be scattered throughout the Plan Area and CAZs, so the sites would not create a visual imposition on the landscape or be perceived as a centralized, large-scale visual change. In addition, restored/enhanced sites would increase the amount of native vegetative communities that attract wildlife, thus helping to improve the visual quality and diversity of the restored areas. Other beneficial effects would result when flat agricultural lands and row crops are replaced by restored riparian vegetation. The visual characteristics of these restored/enhanced landscapes would be similar to other natural areas in the Plan Area and would increase the Plan Area's overall amount of natural land, which is less extensive than the widespread areas of agricultural development. The BRCP would have an overall beneficial effect related to the enhancement and creation of scenic vistas in the Plan Area. Therefore, it is anticipated that the conservation strategy and conservation measures would not have a substantial effect on scenic vistas.

NEPA Determination: Under Alternative 2, the conservation strategy would not affect scenic vistas and views and in some cases may enhance existing views. However, implementation of the City of Gridley's general plan would result in the conversion of agricultural land to urban uses and reduce the visibility of the Sutter Buttes, thereby substantially affecting scenic vistas or views. Gridley would be responsible for implementing its own general plan goals, policies, and actions; however, implementation would not reduce impacts to a less-than-significant level. Therefore, impacts would be significant and unavoidable.

CEQA Determination: Under Alternative 2, the conservation strategy would not affect scenic vistas and views and in some cases may enhance existing views. However, implementation of the City of Gridley's general plan would result in the conversion of agricultural land to urban uses and reduce the visibility of the Sutter Buttes, thereby substantially affecting scenic vistas or views. Gridley would be responsible for implementing its own general plan goals, policies, and actions or mitigation; however, implementation would not reduce impacts to a less-than-significant level. Therefore, impacts would be significant and unavoidable.

Impact REC-4: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (NEPA: less than significant; CEQA: less than significant)

The impacts of covered activities within the jurisdictions of the Local Agencies, water districts and irrigation districts, and Caltrans and County transportation project areas on scenic vistas would be the same as those described for Alternative 1 under Impact REC-4.

There is a very low probability that conservation measures would take place along the very short length (i.e., less than 10 miles) of SR 70 (a locally scenic highway) that is within the Plan Area. However, if conservation measure activities were to take place along this short length of road, they would likely be CM4 or CM5, which would restore riparian habitat and other natural habitat in the Cascade Foothills CAZ. These types of activities would have a beneficial effect on the scenic resources seen by roadway travelers because they would provide visual interest and diversity.

NEPA Determination: Under Alternative 2, the conservation strategy and measures would not affect scenic resources along a very short segment of SR 70 because of the low probability activities would occur in this area. In addition, the County general plan EIR determined that implementation of the general plan's goals, policies, and actions would avoid significant impacts on scenic highways, and local jurisdictions lack designated scenic highways. Therefore, the impact would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 2, the conservation strategy and measures would not affect scenic resources along a very short segment of SR 70 because of the low probability activities would occur in this area. In addition, the County general plan EIR determined that implementation of the general plan's goals, policies, and actions would avoid significant impacts on scenic highways, and local jurisdictions lack designated scenic highways. Therefore, the impact would be less than significant. No mitigation is required.

Impact REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies on existing visual character or quality would be the same as those described for Alternative 1 under Impact REC-5.

The conservation strategy and conservation measures would not substantially degrade the existing visual character or quality of the Plan Area. CM1, CM4–CM14 would establish a conservation land system and restore certain acreages of natural communities and habitats activities for covered species. It is unknown the location of site-specific conservation strategy and conservation measure activities and the potential presence of sensitive viewers. However, activities associated with the implementation of restoration and habitat enhancement would take place over 50 years, often during a relatively short window each year between biologically important seasons (e.g., migration or nesting) so as to minimize the effects on species. The overall intensity and duration of each action would vary based on the individual project, but would generally be short to fit within the short window each year. Implementation of the conservation strategy and conservation measures could introduce heavy equipment and associated vehicles, including dozers, graders, scrapers, and trucks, into the viewshed of all viewer groups in the vicinity. Construction may include increasing connectivity between marshes and waterways, grading, and planting. Currently, it is not uncommon for heavy equipment to be seen, intermittently, for existing levee maintenance, agricultural purposes, dredging operations, site-specific construction, and managing and restoring habitat within the Plan Area. Therefore, it is not anticipated that construction equipment and activities for generally short durations over 50 years would result in a substantial degradation of the existing visual character or quality of the Plan Area.

The conversion of agricultural lands to natural communities as a result of implementing the conservation measures could alter the visual character or quality of the Plan Area because the dominant visual feature and resource in the Plan Area is agriculture. Approximately 4,000 acres of agricultural lands in the Plan Area may be affected by conversion to restored natural communities (Butte Regional Conservation Plan 2012: Figure 4-20). The specific conversion sites are unknown, but the conversion would take place over the 50-year permit period and be within the approximately 142,000 acres of agricultural lands in the Plan Area. This conversion represents less than 3% of the agricultural land within the Plan Area. Once the land is converted to natural communities, it is anticipated that there would be beneficial effects where flat agricultural lands and row crops have been replaced by restored riparian vegetation or other vegetation, such as wetlands or grasslands, because natural areas are rarer scenic features in the Plan Area, and such a change would increase visual diversity. The BRCP would have an overall beneficial effect related to the enhancement and creation of scenic vistas in the Plan Area.

NEPA Determination: Under Alternative 2, the conservation strategy would benefit the existing visual character of the Plan area, and not substantially degrade the existing visual character and quality of agricultural lands and natural lands. However, as identified for Alternative 1, implementation of the City of Chico's and City of Gridley's general plans would result in substantial degradation of the existing visual character and quality of the areas within their local jurisdictions primarily due to more urban land uses. Both Gridley and Chico determined there is no feasible mitigation available to reduce this significant impact to a less-than-significant level (City of Gridley 2009; City of Chico 2011b). Therefore, this impact would be significant and unavoidable.

CEQA Determination: Under Alternative 2 the conservation strategy would benefit the existing visual character of the Plan area, and not substantially degrade the existing visual character and quality of agricultural lands and natural lands. However, as identified for Alternative 1, implementation of the City of Chico's and City of Gridley's general plans would result in degradation of the existing visual character and quality of the areas within their local jurisdictions primarily due to more urban land uses. Both Gridley and Chico determined there is no feasible mitigation available

to reduce this significant impact to a less-than-significant level (City of Gridley 2009; City of Chico 2011b). Therefore, this impact would be significant and unavoidable.

Impact REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies on daytime or nighttime views would be the same as those described for Alternative 1 under Impact REC-6.

The intent of the conservation strategy and conservation measures would be to establish native vegetation in the various CAZs. Given the nature of the conservation measures (restoration and management of habitat and species), it is anticipated that there would be very few new sources of permanent lighting during operation and that these sources would not result in a substantial increase in light or glare. Restored areas would largely be natural habitat areas. At this time, it is not known where (if any) new lighting sources might be proposed; however, it is anticipated that there would be a very limited number of such areas and that the lighting would be reduced to the minimum necessary to provide safety and security as required by the County Zoning Ordinance and that effects would not be adverse.

NEPA Determination: Under Alternative 2, the conservation strategy would not result in a substantial increase of light and glare. However, as identified for Alternative 1, substantial new sources of light or glare would be introduced in the Plan Area as a result of implementation of Gridley's general plan. Gridley determined there is no feasible mitigation available to reduce this significant impact to a less-than-significant level beyond the policies and programs of the general plan, which would fully preserve existing nighttime views while at the same time allow urban development (City of Gridley 2009). Therefore, this impact would be significant and unavoidable.

CEQA Determination: Under Alternative 2 the conservation strategy would not result in a substantial increase of light and glare. However, as identified for Alternative 1, substantial new sources light or glare would be introduced in the Plan Area as a result of implementation of Gridley's general plan. Gridley determined there is no feasible mitigation available to reduce this significant impact to a less-than-significant level beyond the policies and programs of the general plan, which would fully preserve existing nighttime views while at the same time allow urban development (City of Gridley 2009). Therefore, this impact would be significant and unavoidable.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies rather than through modification of conservation measures. Consequently, the impacts related to

implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact REC-1: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Under this alternative, a moderate reduction in new development and consequent increased demand for recreational facilities would occur. But in general, effects are not expected to substantially differ from those identified in Impact REC-1 for Alternative 2.

The impacts associated with the conservation strategy and conservation measures would be similar to, but of lower intensity than, those described for Alternative 2 under Impact REC-1. It is anticipated that fewer natural communities would be conserved as a result of there being less development to fund the conservation strategy. The natural communities that would be conserved and restored would be greater than those that currently exist under baseline conditions. Therefore, it is anticipated that the conservation strategy would actually increase the recreational opportunities for the public in the Plan Area.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

an EIR. cts of covered activities within the jurisdictions of the Local Agencies and water districts and and irrigation districts related to the environmental effects of construction or expansion of recreational facilities would be similar to those described for Alternative 2 under Impact REC-2.

The conservation strategy and conservation measures would not include the construction of specific recreational facilities that would have an adverse physical effect on the environment.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-3: Have a substantial adverse effect on a scenic vista (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Generally, under Alternative 3, there would be a greater intensity of urban development within the county's and cities' urbanized areas as compared to Alternative 2. Thus, this alternative is generally anticipated to reduce the amount of land converted to urban uses county-wide, helping to retain the small town, rural character of the county and cities over a larger area of the county and maintain more undeveloped scenic areas. However, implementation of the City of Gridley's general plan would result in a substantial conversion of agricultural land and open space to urban uses and the

potential reduction of the visibility of the Sutter Buttes, and thus would adversely and substantially affect scenic vistas.

The impacts associated with the conservation strategy and conservation measures would be similar, but fewer, than those described for Alternative 2 under Impact REC-3. It is anticipated that fewer natural communities would be conserved as a result of there being less development to fund the conservation strategy. Overall, even though fewer acres of natural communities would be restored/enhanced, the acres that are restored/enhanced would increase the amount of native vegetative communities that attract wildlife, thus helping to improve the visual quality and diversity of the restored areas. The visual characteristics of these restored/enhanced landscapes would be similar to other natural areas in the Plan Area and would increase the Plan Area's overall amount of natural land, which is less extensive than the widespread areas of agricultural development. In this sense, the BRCP would have an overall beneficial effect related to the enhancement and creation of scenic vistas in the Plan Area. Therefore, it is anticipated that the conservation strategy and conservation measures would not have a substantial effect on scenic vistas. This impact would be less than significant.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-4: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (NEPA: less than significant; CEQA: less than significant)

The impacts of covered activities within the jurisdictions of the Local Agencies, water districts and irrigation districts, and Caltrans and County roadway project areas on scenic vistas would be the same as those described for Alternative 2 under Impact REC-4.

The impacts associated with the conservation strategy and conservation measures would be similar, but fewer, than those described for Alternative 2 under Impact REC-4. It is anticipated that fewer acres of natural communities would be conserved as a result of there being less development to fund the conservation strategy. There is a low probability that the conservation strategy and measures would be implemented along SR 70, and if they were implemented, there would be potential beneficial effects on scenic resources seen by roadway travelers. Therefore, impacts would be less than significant.

NEPA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; impacts would be less than significant. No mitigation is required.

Impact REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies and water districts and irrigation districts on existing visual character or quality would be the same as those described for Alternative 2 under Impact REC-5.

The impacts associated with the conservation strategy and conservation measures would be similar, but fewer, than those described for Alternative 2 under impact REC-5. It is anticipated that fewer acres of natural communities would be conserved as a result of there being less development to fund the conservation strategy. As a result, it is anticipated that fewer agricultural acres would be converted to restored natural communities; therefore, it is likely that less than 3% of the existing agricultural acreage in the Plan Area would be converted. A more limited change in the rural visual character and quality of the Plan Area would take place. The visual characteristics of these restored landscapes would be similar to other natural areas in the Plan Area and would increase the Plan Area's overall amount of natural land, which is less extensive than the widespread agricultural development. In this sense, the BRCP would have an overall beneficial effect related to the enhancement and creation of visual character and quality in the Plan Area.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts of covered activities within the jurisdictions of the Local Agencies on daytime or nighttime views would be the same as those described for Alternative 2 under Impact REC-6.

The impacts associated with the conservation strategy and conservation measures would be similar, but fewer, than those described for Alternative 2 under Impact REC-6. It is anticipated that there would be fewer acres of natural communities conserved as a result of there being less development to fund the conservation strategy. Given the nature of the conservation measures (restoration and management of habitat and species), it is anticipated that there would be very few new sources of permanent lighting during operation and that these sources would not result in a substantial increase in light or glare. Restored areas would largely be natural habitat areas. Therefore, any new lighting or glare would be very limited.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. It would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would remain the same as described for Alternative 2. Therefore, impact mechanisms for recreation, open space, and visual resources would be similar to those described for Alternative 2.

Impact REC-1: 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 (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with the conservation strategy and conservation measures would be similar to those described for Alternative 2. Although grassland and rice would not necessarily create additional public use recreational or open space opportunities, they would not prevent some of the other natural community types (e.g., managed wetlands) from occurring. Overall, it is anticipated that the conservation strategy could increase the recreational opportunities for the public in the Plan Area because there would be increased acreage that could be used for recreational opportunities.

NEPA Determination: The impact determination would be the same as Alternative 2; impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with the conservation strategy and conservation measures would be similar to those described for Alternative 2 under Impact REC-2.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-3: Have a substantial adverse effect on a scenic vista (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with the conservation strategy and conservation measures would be similar, but fewer, than those described for Alternative 2 under Impact REC-3. While the visual setting under Alternative 4 might favor more flat topographic lands associated with rice and grasslands, this would not be a substantial change from the existing visual setting of the Plan Area, which is primarily agricultural land (44%), generally located to the west of SR 99. Therefore, it is not anticipated to have a substantial effect on existing scenic resources. Furthermore, any restoration/enhancement of other natural communities or land types (e.g., riparian, wetland, Oak woodlands) would result in landscapes similar to other areas of the Plan Area that are in a natural state and less extensive than the widespread areas of agricultural development. This would help to improve the visual quality and diversity of the setting and enhance effects on scenic vistas.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-4: Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a scenic highway (NEPA: less than significant; CEQA: less than significant)

The impacts associated with the conservation strategy and conservation measures would be similar to those described for Alternative 2 under Impact REC-4. There is a low probability that the conservation strategy and measures would be implemented along SR 70, and if they were implemented, there would be potential beneficial effects on scenic resources seen by roadway travelers.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be less than significant. No mitigation is required.

Impact REC-5: Substantially degrade the existing visual character or quality of the site and its surroundings (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with the conservation strategy and conservation measures would be similar to those described for Alternative 2 under Impact REC-5. As discussed for Alternative 4 under REC-3, this alternative might favor more flat topographic lands associated with rice and grasslands. This would not be a substantial change from the existing visual character and quality of the Plan Area, which is primarily agricultural land (44%), generally located to the west of SR 99. Therefore, it is not anticipated to have a substantial effect on existing visual character and quality because it would continue to support flat land uses that are rural, open, and agricultural in nature. Furthermore, any restoration/enhancement of other natural communities or land types (e.g., riparian, wetland, Oak woodlands) would result in landscapes similar to other areas of the Plan Area that are in a natural state and less extensive than the widespread areas agricultural development. Therefore, this would help to improve the visual quality and diversity of the setting and enhance effects on the visual character and quality of the rural, open space, and agricultural nature of the setting. Impacts would be less than significant.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact REC-6: Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with the conservation strategy and conservation measures would be similar to those identified for Alternative 2 under Impact REC-6. An increase in rice acreage or grassland acreage would not result in any new permanent sources of light or glare. These lands are typically open and in natural settings and do not have permanent light fixtures. Nighttime harvest of rice can take place and currently does take place within the Plan Area; however, this is temporary and only during harvest season and takes place within areas surrounded by other rice fields and agricultural lands. An increase in the acreage of rice is not anticipated to change these conditions substantially.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

13.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for recreation, open space, and visual resources is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This analysis considered development projects, including roadway projects, water supply development projects, and park acquisition and management projects; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

This analysis determines whether the covered activities not analyzed in previous environmental documents would result in a cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. Past and present projects have resulted in an increase in recreational facilities and open space in the Plan Area. These projects have provided a beneficial cumulative effect because of the continued operation and management of available park lands and recreational opportunities to the public in the Plan Area.

Past and present projects have resulted in substantial modification to the visual resources of the Plan Area. These projects have converted natural habitat communities to agricultural land uses and converted agricultural land uses to urban and suburban land uses. These projects have generally contributed to an incrementally cumulative effect on the visual resources of the landscape.

Alternative 1—No Action (No Plan Implementation)

Recreation and Open Space

The City of Gridley determined that the recreational facilities within its jurisdiction would experience cumulatively considerable and significant impacts; no other local jurisdiction made this determination. Therefore, past, present and reasonably foreseeable future projects, including implementation of the general plans of the cities and the county, would result in cumulatively considerable and significant impacts on recreational resources. Although there would be no conservation strategy or conservation measures, Alternative 1 would contribute to cumulative impacts as determined in the Gridley general plan EIR.

Visual Resources

The City of Gridley determined that the visual resources in its jurisdiction would experience cumulatively considerable and significant impacts; the City of Chico also determined that the general

visual character and quality of Chico would result in cumulatively considerable and significant impacts associated with the conversion of undeveloped land to urban and suburban uses. Therefore, past, present, and reasonably foreseeable future projects, including implementation of the general plans of the Cities and the County, would result in cumulatively considerable and significant impacts on visual resources.

Although there would be no conservation strategy or conservation measures, the Alternative 1 would contribute to cumulative impacts as determined in the Gridley and Chico general plan EIRs.

Alternative 2—Proposed Action

Recreation and Open Space

The City of Gridley determined that the visual resources in its jurisdiction would experience cumulatively considerable and significant impacts; no other local jurisdiction made this determination. Therefore, past, present and reasonably foreseeable future projects—including implementation of the general plans—would result in cumulatively considerable and significant impacts on recreational resources. The covered activities identified for water districts or irrigation districts and/or the conservation strategy and conservation measures, combined with other conservation planning, would maintain large areas of open space, which is a land use that does not place high demand on recreational services. Furthermore, the conservation strategy and conservation measures would provide opportunities for additional recreation and open space use by the public (e.g., managed wetlands).

Although there would be no impacts generated by the additional activities (i.e., conservation strategy or conservation measures) beyond implementation of the general plans, Alternative 2 would contribute to cumulative impacts as determined in the Gridley general plan EIR.

Visual Resources

The City of Gridley determined that the visual resources in its jurisdiction would experience cumulatively considerable and significant impacts; the City of Chico also determined that the general visual character and quality of Chico would result in cumulatively considerable and significant impacts associated with the conversion of undeveloped land to urban and suburban uses. Therefore, past, present, and reasonably foreseeable future projects, including implementation of the general plans of the Cities and the County, would result in cumulatively considerable and significant impacts on visual resources. The covered activities identified for water districts or irrigation districts and/or the conservation strategy and conservation measures, combined with other conservation planning, would generally occur where flat agricultural lands and row crops are replaced by restored riparian vegetation. Such a change would increase visual diversity because natural areas are rarer scenic features in the Plan Area than are agricultural lands. Furthermore, restored/enhanced sites would increase the amount of native vegetative communities that attract wildlife, thus helping to improve the visual quality and diversity of the restored areas. The visual characteristics of these restored/enhanced landscapes would be similar to other natural areas in the Plan Area and would increase the Plan Area's overall amount of natural land, which is less extensive than the widespread areas of agricultural development. In this sense, the BRCP would have an overall beneficial effect related to the enhancement and creation of scenic vistas and beneficially adding to the visual character and quality in the Plan Area.

Although there would be no impacts generated by the additional activities (i.e., conservation strategy or conservation measures) beyond implementation of the general plans, Alternative 2 would contribute to cumulative impacts as determined in the Gridley and Chico general plan EIRs.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

Recreation and Open Space

The extent of available recreational facilities and open space associated with implementation of the water districts' and irrigation districts' covered activities and the conservation strategy and conservation measures differs slightly between these two alternatives. However, the mechanism and implications are similar to or slightly reduced compared to Alternative 2. Each of these alternatives would result in an incremental contribution to cumulative impacts. Although there would be no impacts generated by the additional activities (i.e., conservation strategy or conservation measures) beyond implementation of the general plans, Alternative 2 would contribute to cumulative impacts as determined in the Gridley general plan EIR.

Visual Resources

The extent of conversion of undeveloped land to urban and suburban uses and the overall amount of restored/enhanced lands associated with implementation of the water districts' and irrigation districts' covered activities and the conservation strategy and conservation measures differs slightly between these two alternatives. However, the mechanism and implications are similar to or slightly reduced compared to Alternative 2. Each of these alternatives would not result in an incremental contribution to cumulative impacts. Although there would be no impacts generated by the additional activities (i.e., conservation strategy or conservation measures) beyond implementation of the general plans, Alternative 2 would contribute to cumulative impacts as determined in the Gridley and Chico general plan EIRs.

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Chapter 14

Population and Housing, Socioeconomics, and Environmental Justice

14.1 Affected Environment

This section discusses the regulatory setting for population and housing, socioeconomics, and environmental justice, identifying the laws and policies that govern the decision-making processes of relevant federal, state, and local agencies with a role in implementing the alternatives. This section also provides an overview of social and economic conditions, demographics, and the characteristics of minority and low-income populations in the Plan Area that are relevant for analysis of environmental justice effects.

14.1.1 Regulatory Setting

Federal

Population and Housing

There are no federal regulations pertaining to housing and population.

Socioeconomics

National Environmental Policy Act

NEPA requires an EIS to consider social and economic effects if they are related to effects on the natural or physical environment. The NEPA definition of effects includes social and economic factors (40 CFR 1508.8, 1508.14). However, the intent of NEPA is that social and economic effects alone should not trigger preparation of an EIS (40 CFR 1508.14).

Environmental Justice

Executive Order 12898

Environmental justice is rooted in the Civil Rights Act of 1964, which prohibited discrimination in federally assisted programs, and in Executive Order (EO) 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), issued February 11, 1994. EO 12898 was intended to ensure that federal actions and policies do not result in disproportionately high adverse effects on minority or low-income populations. It requires each federal agency to take “appropriate and necessary” steps to identify and address any such disproportionate effects resulting from its programs, policies, or activities, including those it implements directly, as well as those for which it provides permitting or funding.

Council on Environmental Quality Guidance

CEQ guidance (Council on Environmental Quality 1997) for performing environmental justice analyses as part of the NEPA process provides definitions, thresholds, and overall methodological guidance for environmental justice analyses. The analysis used the definitions of minority and low-income populations provided in CEQ's *Guidance for Agencies on Key Terms in Executive Order 12898* (Council on Environmental Quality 1997) as shown below.

Minority individuals are defined as members of the following population groups.

- American Indian or Alaskan Native.
- Asian or Pacific Islander.
- Black.
- Hispanic.

Minority populations are identified by the following factors.

- Where the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general population.
- Where the minority population percentage of the affected area exceeds 50% (Council on Environmental Quality 1997).

Low-income populations are identified on the basis of poverty thresholds provided by the U.S. Census Bureau (Council on Environmental Quality 1997), and identified as one of the following.

- The percentage of the population below the poverty level is meaningfully greater than the corresponding percentage in the general population.
- The percentage of the population below the poverty level in the affected area is 20% or more.

Significant concentrations of minority or low-income individuals are sometimes referred to as *environmental justice populations*. Historically, low-income and minority populations have suffered a greater share of the adverse environmental and health effects of industry and development relative to the benefits than has the general population. The identification and mitigation of this potentially disproportionate burden is referred to as *environmental justice* (Rechtchaffen and Gauna 2002). The current regulatory framework for environmental justice reflects the convergence of civil rights concerns and environmental review processes. In the 1980s community organizers and environmental regulators identified three interrelated concerns. First, these groups identified a significant correlation between hazardous waste and other polluting facilities and demographic concentrations of minority and low-income communities. Second, advocates noticed that minority and low-income communities incurred a greater burden of environmental consequences relative to the benefits of industry and development than did the population at large. Third, minority and low-income communities often suffered a relative lack of access and involvement in environmental decision making relative to the population at large (Rechtchaffen and Gauna 2002). Environmental justice is now regulated through federal policy, with the assessment of environmental justice effects occurring as part of the NEPA process.

Please refer to the Section 14.1.4, *Methods for Impact Analysis*, for additional overview of the CEQ guidance used in this analysis.

Environmental Compliance Memorandum No. ECM 95-3

Memorandum No. ECM 95-3 provides guidance for complying with EO 12898 for U.S. Department of the Interior (DOI or Department) actions and programs (U.S. Department of the Interior 1995a). It stipulates that environmental documents prepared by DOI agencies must analyze the impact of agency actions on minority and low-income populations. The memorandum directs agencies to evaluate the equity of the impacts imposed on these populations relative to the benefit of the action. The relevant environmental document should identify any such impacts, or the absence of impacts, on minority and low-income populations.

U.S. Department of Interior's Environmental Justice Strategic Plan

DOI has adopted a plan that governs the actions of all constituent agencies within the Department, including USFWS. The DOI Environmental Justice Strategic Plan—1995 provides the following goals (1995b).

Goal 1: The Department will involve minority and low-income communities as we make environmental decisions and assure public access to our environmental information.

Goal 2: The Department will provide its employees environmental justice guidance and with the help of minority and low-income communities develop training which will reduce their exposure to environmental health and safety hazards.

Goal 3: The Department will use and expand its science, research, and data collection capabilities on innovative solutions to environmental justice-related issues (for example, assisting in the identification of different consumption patterns of populations who rely principally on fish and/or wildlife for subsistence).

Goal 4: The Department will use our public partnership opportunities with environmental and grassroots groups, business, academic, labor organizations, and federal, Tribal, and local governments to advance environmental justice.

The plan in turn reflects DOI's early guidance implementing EO 12898 (U.S. Department of the Interior 1995a). This guidance indicates that constituent agencies within DOI should identify the effects of agency actions on minority and low-income communities and analyze the equity of the distribution of benefits and risks of agency actions, as described above (U.S. Department of the Interior 1995a). As an agency under DOI, USFWS is subject to this policy, and also refers to the text of EO 12898 in its NEPA guidance (U.S. Fish and Wildlife Service 1999).

State

Population and Housing

California Government Code Section 65302(c)

The state requires all local general plans to include a housing element. The discussion of local regulations below provides relevant descriptions for each local jurisdiction.

California Government Code Section 65584

The state requires Regional Housing Needs Plans (RHNP) to be developed by local jurisdictions based on countywide housing projections developed by the California Department of Housing and Community Development. See local regulations below for a description of the RHNA for Butte County.

Socioeconomics

California Environmental Quality Act

CEQA requires analysis of a proposed project's potential impacts on population growth and housing supply, but social and economic changes are not considered environmental impacts in and of themselves under CEQA. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes, and states that social or economic effects shall not be treated as significant effects on the environment (State CEQA Guidelines Sections 15064[f] and 15131).

Environmental Justice

California Senate Bill 115 (Solis)

Approved in 1999, California Senate Bill 115 (Solis) added Section 65040.12 to the Government Code and Part 3 to Division 34 of the Public Resources Code, both of which concern environmental justice. The bill provides that the Office of Planning and Research is the coordinating agency in California state government for environmental justice programs. The bill also defines environmental justice as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies.”

California Government Code Section 65040.12

For the purposes of Government Code Section 65040.12, environmental justice is defined as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.”

Section 65040.12 requires the Office of Planning and Research to take the following actions.

1. Consult with the Secretaries of the California Environmental Protection Agency, the Resources Agency, and the Business, Transportation and Housing Agency; the Working Group on Environmental Justice established pursuant to Section 72002 of the Public Resources Code; any other appropriate state agencies; and all other interested members of the public and private sectors in this state.
2. Coordinate the office's efforts and share information regarding environmental justice programs with CEQ, EPA, the General Accountability Office, the Office of Management and Budget, and other federal agencies.
3. Review and evaluate any information from federal agencies that is obtained as a result of their respective regulatory activities under EO 12898, and from the Working Group on Environmental Justice established pursuant to Section 72002 of the Public Resources Code.

Section 65040.12 also requires the Office of Planning and Research to establish guidelines for addressing environmental justice issues in city and county general plans, including planning methods for the equitable distribution of public facilities and services, industrial land uses, and the promotion of more livable communities.

Public Resources Code Sections 71110–71116

Public Resources Code Sections 71110–71116 require the California Environmental Protection Agency (Cal/EPA) to develop a model environmental justice mission statement for boards, departments, and offices in the agency. Section 71113 requires Cal/EPA to convene a Working

Group in Environmental Justice to develop a comprehensive environmental justice strategy. The sections also require this strategy to be reviewed and updated. Finally, Section 71116 establishes a small grant program for nonprofit organizations and federally recognized tribal entities to research environmental justice issues in their community and address larger environmental justice issues.

California Resources Agency Environmental Justice Policy

This policy implements the requirements of California Government Code Section 65040.12 for California Resources Agency actions and programs. The policy states that these provisions apply to agency actions, which are defined as follows (California Resources Agency 2012).

- Adopting regulations.
- Enforcing environmental laws or regulations.
- Making discretionary decisions or taking actions that affect the environment.
- Providing funding for activities affecting the environment.
- Interacting with the public on environmental issues.

Collectively, these policies stand for the principle that California state agencies should analyze the effects of their actions on minority and low-income groups, and seek to avoid disproportionate effects on these groups where feasible.

Local

Population and Housing

Local governments are required to adopt and periodically update the housing elements of their general plans as stated in California Government Code Section 65302(c). The guidelines and requirements for housing elements are outlined by the California Department of Housing and Community Development (HCD).

Butte County

Regional Housing Needs Plan

The RHNP is for the cities of Biggs, Chico, Gridley, and Oroville; the town of Paradise; and Butte County. The purpose of the RHNP is to allocate to the cities and county their “fair share” of the region’s projected housing need by household income group over the seven-and-a-half year planning period covered by the plan. The RHNP ensures a fair distribution of housing among the cities and county, so that every community provides an opportunity for a mix of housing affordable to all economic segments. The housing allocation targets are not building requirements, but rather are goals for each community to accommodate through appropriate planning policies and land use regulations. They are not housing unit quotas that jurisdictions must achieve within the timeframe of their next housing element update.

The 2007 RHNP was adopted in 2008 and covers the 2007 through 2014 planning horizon (the time in which the Notice of Intent/Notice of Preparation for this EIS/EIR was released). BCAG prepared and approved a more recent RHNA in 2012, covering the 2014 through 2022 planning horizon.

Housing Element

The *Butte County Housing Element* (Butte County 2012a) identifies the County's goals, objectives, policies, and actions relative to the improvement, development, and maintenance of housing in the county. The Housing Element contains six overarching goals that range in topic from providing adequate and affordable housing to promoting energy efficiency. The objectives, policies, and actions are more specific and aim to help the County achieve its Housing Element goals.

City of Oroville

The City of Oroville's Housing Element (City of Oroville 2009a) contains five goals to enhance, increase, improve, and preserve the City's housing stock in a fair and equitable manner. These goals include increasing housing availability and providing housing free of discrimination. The Housing Element also contains objectives, policies, and actions with more specific information on how to obtain funding and other means to achieve the City's Housing Element goals.

City of Biggs

The City of Biggs' Housing Element (City of Biggs 2014) establishes goals, policies, and programs that concentrate on four specific aspects of the housing market: housing quality, housing quantity and affordability, equal housing opportunity, and natural resources and energy conservation. The purpose of these goals is to create a housing program that preserves, improves, and develops housing for the City, and to address the housing needs identified in BCAG's 2007 Draft Regional Housing Needs Program.

City of Chico

The City of Chico's Housing Element (City of Chico 2011a) contains seven goals that aim to meet the housing needs of existing and future city residents. The goals range in topic from increasing equal housing opportunities to reinvesting in existing neighborhoods. The associated policies and actions support the City's Housing Element goals.

City of Gridley

The City of Gridley's Housing Element (City of Gridley 2010) contains six goals that range in topic from housing quality and quantity to natural resources and energy conservation. The associated policies and actions support the City's Housing Element goals.

Socioeconomics

There are no local regulations pertaining to socioeconomics. However, California Government Code Section 65302 requires the preparation of general plans by local governments; these governments can include an economics element. Relevant elements are discussed below.

City of Biggs

The City's Economic Development Element contains six goals related to economic development. These goals range in topic from encouraging new development to revitalizing the City's core. The associated policies and actions support the City's Economic Development goals.

City of Chico

The City of Chico's Economic Development Element (City of Chico 2011a) guide's the City's use of resources. The Economic Development Element contains three goals that, along with associated policies and actions, are focused on maintaining long-term prosperity, increasing tourism, and creating a redevelopment strategy.

Environmental Justice

There are no local regulations pertaining to environmental justice.

14.1.2 Environmental Setting

Population and Demographics

As of 2010, Butte County's population was 220,000 with, according to the U.S. Census Bureau, a density of 124 persons per square mile, compared with a state average of 217 persons per square mile. Based on an evaluation of the 2010 census blocks, the population of the Plan Area is approximately 172,522.¹

Although the county population has been steadily increasing, the population of unincorporated areas has been declining as people move to urban areas and the annex areas of the cities to accommodate this growth (Butte County 2012a). Table 14-1 lists the populations of the cities of Biggs, Chico, Gridley, and Oroville and the population of the county as a whole (U.S. Census Bureau 2011).

Table 14-1. Butte County City/County Population Data

Jurisdiction	Population Total 2010
City of Biggs	1,707
City of Chico	86,187
City of Gridley	6,584
City of Oroville ^a	29,568
Butte County	220,000

Source: U.S. Census Bureau 2011.

^a Includes Census data collected for Oroville East and South Oroville census-designated places.

Butte County is a generally rural area, with more than 60% of the county area designated for agricultural uses. Much of this agricultural land is in the western portion of the county. As of January 2010, approximately 61% of the county's population resided in the incorporated cities of Biggs, Chico, Gridley, Oroville, and town of Paradise. Based on BCAG's population growth projections, the county's population is projected to grow at an average annual rate of 1.6%, and the unincorporated county is predicted to grow at an average annual rate of 1.3% (Table 14-2) (Butte County Association of Governments 2011). The median age in the county is 37.2, ranging from 27.4 in

¹ The entire population of census blocks more than 50% within the Plan Area is included in the population for the Plan Area.

Gridley to 35 in Biggs.² Table 14-3 shows racial characteristics for the county as reported in the 2010 census.

Table 14-2. Butte County Population and Growth Estimates for 2010-2035 (Medium Scenario)

Area/Jurisdiction	2010	2015	2020	2025	2030	2035	Total Increase	Percent Increase
Incorporated Cities								
Biggs	1,787	2,139	2,774	3,267	3,830	4,265	2,678	150
Chico	88,228	92,678	99,766	110,046	121,407	133,944	45,716	52
Gridley	6,454	7,890	9,986	11,633	13,556	15,428	8,974	139
Oroville	14,687	16,755	20,063	24,359	26,921	29,770	15,083	103
Unincorporated County	84,302	90,102	96,311	102,600	109,342	116,424	32,122	38
Butte County	221,768	236,800	257,266	281,558	306,047	332,459	110,691	50

Source: Butte County Association of Governments 2011. Butte County Long-Term Regional Growth Forecasts Available at:
< http://www.bcag.org/documents/demographics/pop_emp_projections/Growth_Forecasts_2010-2035.pdf > Accessed on: May 9, 2013.

Note: Paradise is not included in this table because it is not within the Plan Area.

Table 14-3. 2010 Census Data on Race in Butte County

Racial Group	California	Butte County	Percent of County Total
White	21,453,934	180,096	74.8
Hispanic origin (of any race)	14,013,719	31,116	13.0
Asian & Pacific Islander	5,005,393	9,509	4.0
Black or African American	2,299,072	3,415	1.4
American Indian & Alaska Native	362,801	4,395	1.8
Other races	6,317,372	12,141	5.0
Total	49,452,291	240,672	100

Sources: U.S. Census Bureau 2010a.

Housing

The number of housing units in Butte County has been growing steadily for the past decade. The California Department of Finance (2011) estimates that the county had a total of 96,623 housing units in January 2010, with 61,708 single-family homes and approximately 34,915 multifamily housing units and mobile homes (Table 14-4). The average household size in the county is approximately 2.45 people, ranging between 2.6 in Oroville and 3.16 in Gridley (U.S. Census Bureau 2009, 2010a). The county's vacancy rate was 6.44% in 2010. The vacancy rate in Biggs was 6.62%, while the vacancy rate in Gridley was 6.17% (California Department of Finance 2011). The vacancy rate in Chico was 6.1%, while the vacancy rate in Oroville was 8.8% in 2010 (U.S. Census Bureau

² Median age was not available in the 2010 Census for the cities of Biggs and Gridley. Therefore, the data represents the 2005-2009 American Community Survey.

2011). Vacancy rates are lower in the City of Chico, likely due to California State University, Chico's presence; housing is typically in higher demand near college campuses.

Housing stock also continues to grow in Biggs, Chico, Gridley, and Oroville. BCAG projects an annual growth rate for housing of 1.6% for the county and 3.7%, 1.7%, 3.5% and 2.9% for Biggs, Chico, Gridley, and Oroville, respectively. Table 14-5 shows the projected housing growth between 2010 and 2035 (Butte County Association of Governments 2011).

Table 14-4. Butte County City/County Housing Data (Housing Units)

City in Butte County	Total 2010	2010 Occupied	2010 Vacant
City of Biggs	617	556	52
City of Chico	37,050	34,805	2,245
City of Gridley	2,406	2,183	223
City of Oroville ^a	11,801	10,740	1,061
Butte County	95,835	87,618	8,217

Source: U.S. Census Bureau 2011.

^a Includes Census data collected for Oroville East CDP and South Oroville CDP.

Table 14-5. Butte County City/County Housing Data Projections (Medium Scenario, Number of Housing Units)

Area/Jurisdiction	2010	2015	2020	2025	2030	2035	Total Increase	Percent Increase
Incorporated Cities								
Biggs	634	759	984	1,159	1,359	1,584	950	150
Chico	37,159	39,034	42,019	46,349	51,134	56,414	19,255	52
Gridley	2,449	2,994	3,789	4,414	5,144	5,854	3,405	139
Oroville	6,393	7,293	8,733	10,603	11,718	12,958	6,565	103
Unincorporated County	37,199	39,759	42,499	45,274	48,249	51,374	14,175	38
Butte County	96,623	103,078	111,813	122,213	132,668	143,948	47,325	49

Source: Butte County Association of Governments 2011.

Note: Paradise is not included in this table since it is not within the Plan Area

Income and Employment

The county's annual median household income between 2007 and 2011 was \$57,911 (U.S. Census Bureau 2012). Median household incomes vary somewhat among the cities in the County (Table 14-6). The cities of Biggs, Gridley, and Oroville have per-capita incomes substantially lower than that of the county.

Table 14-6. Economic Data for Butte County and Incorporated Cities

	Butte County	Biggs	Chico	Gridley	Oroville
Median household income (dollars)	57,911	56,527	59,168	52,202	51,867
Income per capita (dollars)	23,431	18,690	24,418	18,262	19,488
Individuals below poverty level (percent)	19.8	22.6	21.1	20.1	22.9
Families below poverty level (percent)	12.4	16.8	12.2	13.9	15.7

Source: U.S. Census Bureau 2012.

In 2011, approximately 1,600 total wage and salary jobs were lost in the county, a decline of 2.2%. During this time, most industries were characterized by declining employment. Between 2012 and 2017 employment is expected generally to grow in professional service, retail trade, leisure and hospitality, and the public sector. These sectors are expected to account for more than 50% of all jobs created in the county. Total taxable sales are forecasted to rise by 3.5% between 2012 and 2017, and industrial production is anticipated to remain stable at approximately 3% per year. Table 14-7 presents the county's employment by industry (California Department of Transportation 2012).

Table 14-7. Butte County Employment (thousands of jobs)

Sector	2011	2012 Forecast	2017 Forecast	2030 Forecast
Farm	2.59	2.63	2.75	2.81
Construction	2.4	2.5	3.0	3.0
Manufacturing	3.6	3.7	4.0	4.2
Transportation & Utilities	1.6	1.6	1.8	2.1
Wholesale & Retail Trade	10.9	11.1	12.7	14.8
Financial Activities	3.0	3.2	3.7	4.1
Professional Services	5.2	5.5	6.7	8.5
Information	1.0	1.0	1.1	1.1
Health & Education	13.4	13.4	14.2	16.8
Leisure	7.0	7.1	8.0	9.3
Government	15.7	15.5	16.7	17.9
Total Wage and Salary	70.0	71.1	79.7	91.5

Source: California Department of Transportation 2012. Available at:
http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic_files/2012/Butte.pdf Accessed on:
May 13, 2013.

Labor force trends in Butte County show that over the past 10 years, the unincorporated county has generally maintained slightly lower unemployment rates than the total county (Butte County 2012a). While labor force trends are similar to statewide trends, the unemployment rates of both the county as a whole and the unincorporated portion were consistently higher than statewide unemployment rates (Butte County 2012a). Total wage and salary job growth is anticipated to be 1.6% in 2012 and is expected to grow an average of 2.2% per year between 2012 and 2017. The unemployment rate improved slightly in 2011 compared to previous years, dropping from 14.4% to 13.8% (California Department of Transportation 2012).

Agriculture

In 2010, the estimated gross value of agricultural production in all of Butte County was approximately \$622 million (Butte County 2010a). Specialty crops and industries, including organic farming and agricultural tourism, also contribute to the agricultural economy. As of 2010, registered organic producers and certified organic producers generated more than \$8 million dollars of revenue (Butte County 2010a). Table 14-8 identifies the value of the county's top ten crops in 2010 dollars.

Table 14-8. Butte County's Top Ten Crops (2010)

Commodity	Value (dollars)
Rice	182,248,000
Walnuts	173,392,000
Almonds	113,781,000
Dried Plums	42,566,000
Nursery stock	23,837,000
Cattle and calves	11,714,000
Rice seed	10,494,000
Fruit and nut (misc.)	10,494,000
Peaches—clingstone	9,690,000
Kiwis	8,177,000
Olives (all)	7,270,000
Apiary pollination	7,078,000

Source: Butte County 2010a.

Property Tax Revenues

Butte County property tax revenues for the 2011–2012 fiscal year totaled \$195 million (Butte County 2011). The average tax rate on property with a home is 0.6% of the home value, although actual tax rates vary between tax rate zones (Tax Rates.org 2013). Property tax revenues generated by the county are limited by Williamson Act contracts. Tax revenues generated by agriculture are generally lower than would be generated by other uses on the same land. (See Chapter 4, *Agricultural and Forestry Resources*, for additional information regarding the Williamson Act).

Environmental Justice Populations

The following discussion describes minority, Hispanic, and low-income communities in the Plan Area based on data from the 2010 decennial census. This section first identifies the census blocks with meaningfully greater total minority and Hispanic populations. A description of the overall distribution of minorities in the Plan Area follows. The section then describes block groups with meaningfully greater low-income populations as well as relevant employment characteristics associated with these populations.

The U.S. Census Bureau collects comprehensive demographic data every 10 years during the decennial census. This analysis uses data from the 2010 decennial census data (i.e., Census 2010). The U.S. Census Bureau collects demographic information on ethnicity at the level of census blocks

(the smallest geographic unit used by the U.S. Census Bureau). Generally, several census blocks make up block groups, which in turn make up census tracts. The population of a census block can vary, depending on the urban or rural character of the area. The U.S. Census Bureau considers Hispanic status to reflect a geographic place of origin rather than ethnicity; data on Hispanic status are collected at the block level.

Minority Populations

Total minority data include the constituent ethnic categories of Black/African-American, Asian, Native Hawaiian or Pacific Islander, and American Indian or Alaskan Native. Consistent with the CEQ's 1997 Guidance, census blocks with more than 50% total minority were identified within the Plan Area.

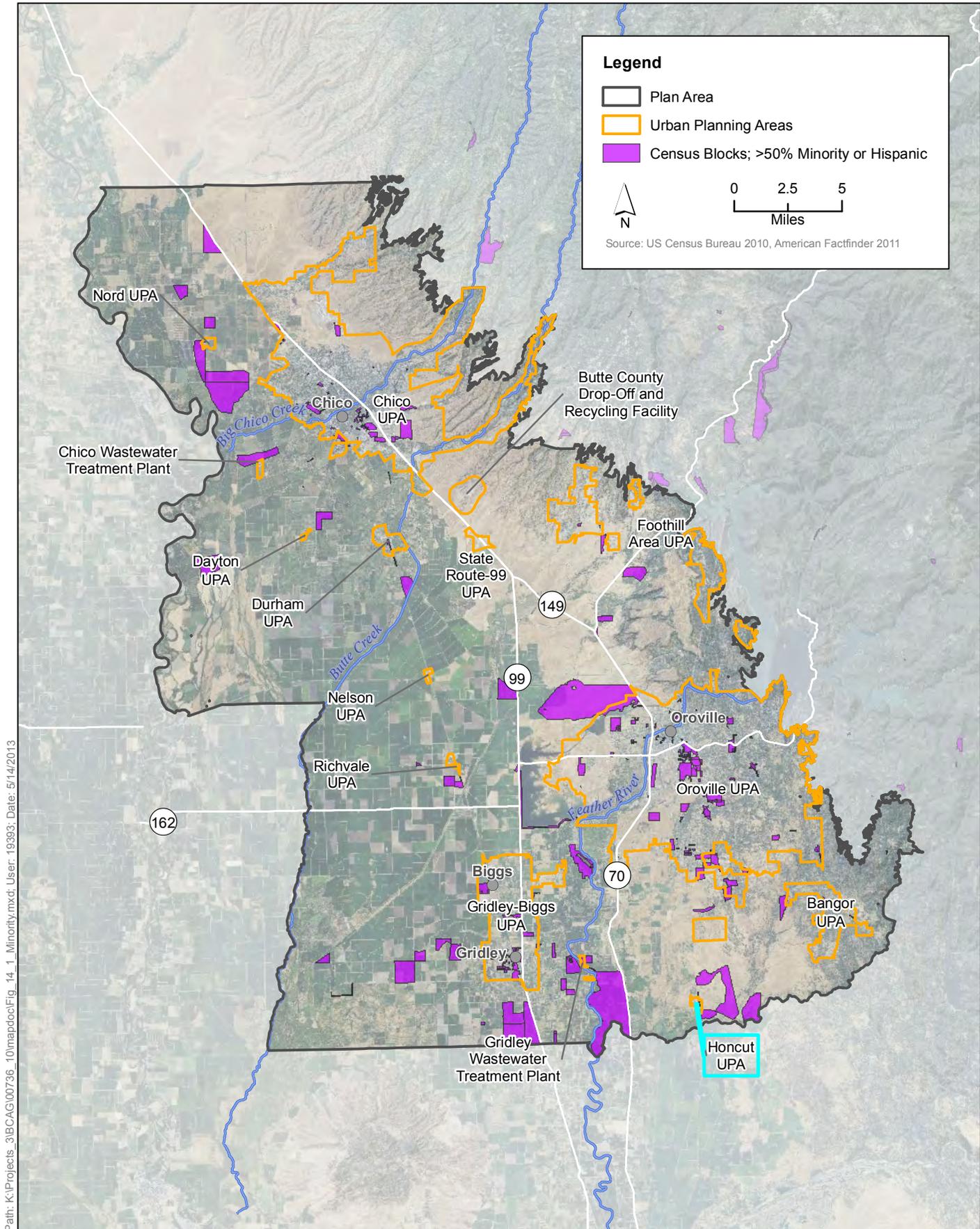
Figure 14-1 depicts the census blocks within the Plan Area with minority populations of greater than 50%. These data were generated based on census data collected for all minority and Hispanic populations within the Plan Area. In general, Figure 14-1 shows a wide distribution over the Plan Area of census blocks with meaningfully greater minority populations. Areas exhibiting high proportions of minority residents are present in both urban and rural areas. Tables 14-9a and 14-9b identify the minority populations per census block and UPA in the Plan Area.

Table 14-9a. Census Blocks with Greater than 50% Minority or Hispanic Populations by Local Jurisdiction within the Plan Area

Local Jurisdiction	Number of Census Blocks
Biggs	6
Chico	57
Gridley	31
Oroville	117
County	99
Total	310

Table 14-9b. Census Blocks with Greater than 50% Minority or Hispanic Populations by UPA within the Plan Area

UPA Name	Number of Census Blocks
Bangor	3
Chico	57
County	66
Dayton	1
Durham	2
Foothill Area	2
Gridley-Biggs	39
Honcut	2
Nord	1
Oroville	136
Rangor	1
Total	310



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Figure 14-1
Minority Populations in the Plan Area

Hispanic Residents

Hispanic populations include persons originating in or descended from populations in Latin America and portions of the Caribbean. Consistent with CEQ's 1997 Guidance, census blocks with greater than 50% total Hispanic populations were identified within the Plan Area. Figure 14-1 and Tables 14-9a and 14-9b show the distribution of areas with meaningfully greater proportions of Hispanic residents in the study area. Of minority groups present in the study area, Hispanics are the most widely dispersed, being present in both urban and rural locations.

Low-Income Populations

The U.S. Census Bureau collects poverty status data at the level of census block groups, a geographic unit that includes census blocks but is smaller than census tracts. For purposes of this analysis, low-income populations consist of persons living below the 2010 poverty threshold as defined by the U.S. Census Bureau (U.S. Census Bureau 2010b). Low-income populations were identified as block groups that contained 20% or more low-income individuals (i.e., below the 2010 poverty threshold). Because the income required to sustain a household varies in relation to the number of individuals dependent on a given quantity of income, there is no single threshold for poverty status (U.S. Census Bureau 2010b). The 20% threshold was used because the cost of living in California is higher than elsewhere in the country, and thus the use of a 50% threshold might incorrectly under identify low-income populations in the study area.

Figure 14-2 shows the distribution of areas with meaningfully greater proportions of low-income households in the Plan Area. Low-income populations were identified based on the Federal poverty threshold in 2010 as defined by the U.S. Census Bureau (U.S. Census Bureau 2010b). Generally, there are three distinct areas of meaningfully greater proportions of low-income households: around Oroville and to the north of Oroville, around Chico and to the south of Chico, and north of Big Chico Creek. Table 14-10 identifies the low-income populations per census block and UPA in the Plan Area.

Table 14-10. Low Income Populations in the Plan Area

General Plan Area/UPA	Census Tracts with 20% or More of Households in Poverty
Chico GP Area/UPA	4
Oroville GP/UPA	2
County (outside UPAs)	2
Total	8

14.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for population and housing in the Local Agencies' general plan EIRs (as described in more detail in Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).³ The significance findings and mitigation

³ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

14.2.1 Methods for Impact Analysis

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on population and housing, socioeconomics, and environmental justice are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on population and housing, socioeconomics, and environmental justice.

Population and Housing

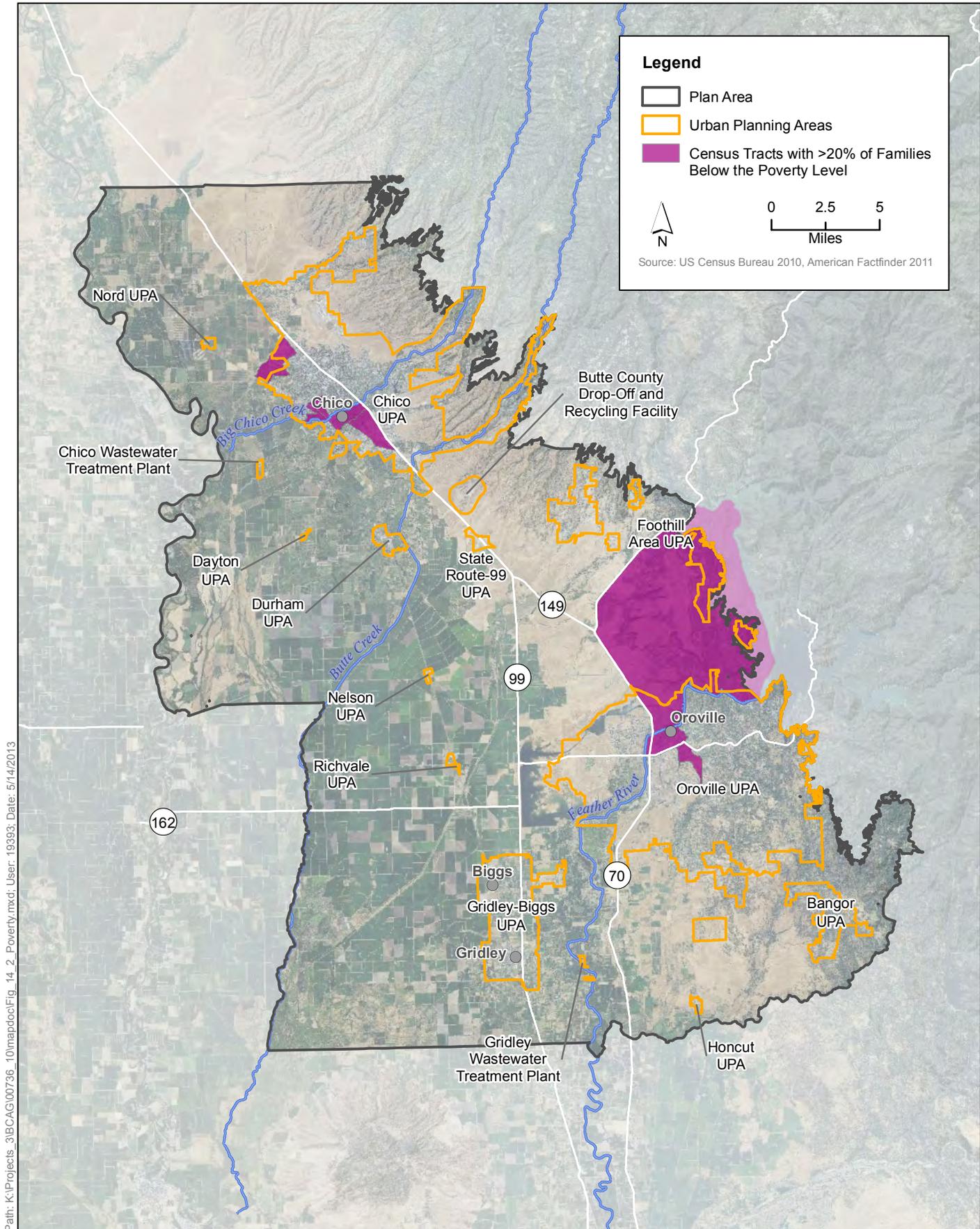
The effects of the action alternatives on population and housing are evaluated qualitatively. Generally, population and housing impacts could occur if covered activities within the Local Agencies' jurisdictions (i.e., within the UPAs) cause substantial increases in population or growth or result in the substantial displacement of existing housing or people. These impacts could be caused by implementation of the general plan or future development within the jurisdictions of the Local Agencies.

In adopting the EIRs for their respective general plans, each Local Agency, except the Cities of Gridley and Oroville, determined that the programmatic impacts on population and housing would be less than significant or mitigated to a less-than-significant level through implementation of general plan policies and adoption of identified mitigation measures. The Cities of Gridley and Oroville have determined that significant and unavoidable impacts would result from substantial population growth in their respective plan areas. It is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified.

The covered activities associated with activities outside the Local Agencies' jurisdictions are analyzed qualitatively for their potential to affect population and housing. Population and housing impacts could be caused by infrastructure development by the water or irrigation districts if these types of covered activities result in substantial increases in population growth or displace existing housing or people.

Socioeconomics

The effects of the action alternatives on socioeconomics are evaluated qualitatively. Generally, socioeconomic effects could occur if the alternatives result in a substantial change in wages earned in the current employment sectors through the displacement of nonagricultural or agricultural businesses or in a substantial reduction in property tax revenue. Such a reduction could occur if land currently used for nonagricultural and agricultural businesses is converted into public uses as a result of the restoration activities identified in the BRCP that do not contribute to property taxes



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Figure 14-2
Percentage of Families Below the Poverty Level

(e.g., restored habitat). Accordingly, the analysis qualitatively addresses the potential conversion of agricultural lands to nonagricultural uses that do not generate tax revenue and estimates the degree to which implementing each alternative would reduce agricultural uses—affecting the agricultural economy of the region—or affect property tax revenues through acquisition of land for preserves. The analysis uses the potential loss of ricelands as a reference point for potential dollars lost, because rice is the county's largest agricultural product. References to Chapter 4, *Agricultural and Forestry Resources*, are made where appropriate. Since socioeconomics analysis is not required by CEQA, only a NEPA determination is made in the analysis.

Environmental Justice

This subsection describes how disproportionately high and adverse effects on environmental justice populations were identified. This methodology follows the general guidance provided by EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, CEQ's *Environmental Justice: Guidance under the National Environmental Policy Act* (Council on Environmental Quality 1997), and EPA's *Toolkit for Assessing Potential Allegations of Environmental Injustice* (U.S. Environmental Protection Agency 2004).

The following definitions were used to identify relevant populations and guide analysis of environmental justice issues. These definitions come from the CEQ guidance and EPA *Toolkit for Assessing Potential Allegations of Environmental Injustice*.

- **Minorities:** individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black (not of Hispanic origin); or Hispanic (Council on Environmental Quality 1997). Hispanic or Latino refers to a place of origin whereas American Indian, Alaskan Native, Asian, Pacific Islander, and Black or African-American (as well as White or European-American) refer to racial categories; thus, for census purposes, individuals classify themselves into racial categories as well as place of origin categories, including Hispanic/Latino and non-Hispanic/Latino. The U.S. Census 2010 allowed individuals to choose more than one race. For this analysis, consistent with guidance from CEQ and EPA (U.S. Environmental Protection Agency 2004), minority refers to people who are Hispanic/Latino of any race, as well as those who are non-Hispanic/Latino of a race other than White or European-American.
- **Low-income:** low-income populations are identified using the national poverty thresholds from the U.S. Census Bureau (Council on Environmental Quality 1997).
- **Disproportionately high and adverse effects:** effects that are adverse under NEPA and disproportionately affect a minority or low-income community as described below. Where minority or low-income individuals constitute a meaningfully greater population, a disproportionately high and adverse finding is made.

The EPA *Toolkit for Assessing Potential Allegations of Environmental Injustice* (U.S. Environmental Protection Agency 2004) provides a general roadmap and methodology for the assessment of environmental justice effects. In accordance with this guidance, environmental justice effects are identified in a phased process with the following steps.

- **Problem formulation:** identify the scope of the action or program that may have environmental justice consequences and integrate the environmental justice assessment with parallel environmental review processes (U.S. Environmental Protection Agency 2004). For this chapter, the scope of the problem subject to analysis consists of all the alternatives.
- **Data collection:** collect information about sources of environmental or health effects in environmental justice populations and identify minority and low-income groups as well as appropriate reference populations (U.S. Environmental Protection Agency 2004). In Section

14.1.2, *Environmental Setting*, of this chapter, information about the distribution of environmental justice populations in the Plan Area is presented.

- **Identification of adverse effects:** identify significant environmental effects associated with the agency action or program that may affect environmental justice populations (U.S. Environmental Protection Agency 2004). This environmental justice assessment is limited to effects that have been identified as adverse even after mitigation as described in Chapters 4 through 13 and Chapter 15 of this EIS/EIR that may affect environmental justice populations. These effects are included in this chapter and analyzed for their potential to result in disproportionate adverse effects on environmental justice populations. Effects determined not to be adverse in Chapters 4 through 13 and Chapter 15 are not considered in the analysis below because those effects would not result in disproportionate effects on minority and low-income populations. In addition, significant effects that would not result in direct or discernable indirect effects on environmental justice populations are not included in the analysis. These would include terrestrial and aquatic resources, as any significant environmental effects that may be disclosed in Chapter 6, *Biological Resources*, would not result in direct or discernable indirect effects on environmental justice populations. This approach is consistent with CEQ guidance (Council on Environmental Quality 1997).
- **Identification of disproportionate effects:** use the information gathered in the identification of adverse effects and determine if these environmental consequences may disproportionately affect an environmental justice population as shown in Figures 14-1 and 14-2. Where effects are identified as adverse under NEPA, this analysis further identifies whether the adverse effects would result in disproportionately high and adverse effects on minority or low-income populations.

Because analysis of environmental justice impacts is not required by CEQA, only a NEPA determination is made.

14.2.2 Significance Criteria

Population and Housing

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).
- Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere.
- Displace a substantial number of people, necessitating the construction of replacement housing elsewhere.

Socioeconomics

For the purposes of this analysis, a socioeconomic impact is considered to be adverse if it would result in any of the following.

- Substantially change economic activity within the Plan Area.

- Substantially affect property tax revenue.

Environmental Justice

Federal CEQ guidance provides relevant thresholds for identification of environmental justice effects. The CEQ guidance identifies three factors to be considered to the extent practicable when determining whether environmental effects are disproportionately high and adverse (Council on Environmental Quality 1997).

- Whether there is or would be an impact on the natural or physical environment that significantly and adversely affects a minority population, or low-income population. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment. For the purposes of this analysis a significant and adverse effect on a minority population is found where significant environmental effects would occur in a location where minorities constitute greater than 50% of the population or low-income individuals constitute 20% or more of the population.
- Whether the environmental effects are significant and are or may have an adverse impact on minority populations, or low-income populations, which appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group. For the purposes of this analysis an effect appreciably exceeds the effect on the general population if it would occur in a location where minorities constitute greater than 50% of the population or low-income individuals constitute 20% or more of the population.
- Whether the environmental effects occur or would occur in a minority population or low-income population affected by cumulative or multiple adverse exposures from environmental hazards that appreciably exceed the cumulative or adverse exposure of the population at large. For the purposes of this analysis an effect appreciably exceeds the effect on the general population if the affected population is greater than 50% minority or 20% or greater low-income.

These standards are consistent with the standards of the California Resources Agency Environmental Justice Policy. This policy states that the Resources Agency and the constituent departments shall (California Resources Agency 2012) undertake the following.

- Identify relevant populations that might be adversely affected by programs or projects submitted by outside parties, as appropriate.
- Work in conjunction with other federal, state, regional, and local agencies to ensure consideration of disproportionate impacts on relevant populations

The factors and standards described above have been summarized into the following significance criteria. Therefore, for the purposes of this analysis, an impact is considered to be adverse if it would result in any of the following:

- Substantially disproportionately affect minority or low-income populations

14.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, project proponents would apply for permits on a project-by-project basis, without coordinated effort to minimize biological impacts through the BRCP. Under Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plans. These include residential, commercial, and industrial development as well as construction, maintenance, and use of urban infrastructure, parks, recreational facilities, public services, and similar types of urban land uses. Other activities that would occur under Alternative 1 are construction and maintenance of public infrastructure projects outside of urban areas, including public infrastructure projects in and over streams (e.g. bridge replacements). The primary impact mechanism for impacts on population and housing, socioeconomics, and environmental justice under Alternative 1 are implementation of the various general plans and the potential resulting increase in population, changes in tax base and employment, and the potential for disproportionate environmental effects on minority and low-income populations. No regional conservation strategy or conservation measures would be implemented; therefore, benefits to and impacts on population and housing, socioeconomic conditions, and environmental justice associated with implementation of the conservation strategy and conservation measures would not occur.

Impact SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

As shown in Table 14-2, the Local Agencies expect a population increase between 50% and 150% through 2035. The County and the City of Chico determined that activities associated with implementation of the general plan would result in less-than-significant impacts (City of Chico 2011b; Butte County 2010b), because land use activities associated with the general plan would anticipate and accommodate the population growth. In addition, the levels of population growth anticipated to occur as a result of implementation of the County's general plan would be similar to that anticipated by BCAG in its population projections for the unincorporated portion of the county; consequently, it would be planned for and accommodated by the County General Plan 2030 goals, policies, and actions (Butte County 2010b).

The Cities of Gridley, Biggs, and Oroville determined that activities associated with implementation of their general plans would result in substantial population growth in an area by proposing new homes and businesses (City of Oroville 2009b; City of Gridley 2009; City of Biggs 2013). The EIRs for the Gridley, Biggs, and Oroville general plans concluded that, although implementation of the goals, plans, and policies of each general plan to accommodate and control the growth in each city's plan areas would limit impacts associated with population growth, they would not reduce impacts to a less-than-significant level. The permit term for the proposed action (Alternative 2) would extend past the implementation of the adopted general plans (horizon 2030); consequently, it is anticipated the local jurisdictions would revise their general plans for the period extending after 2030.

NEPA Determination: Under Alternative 1, the Cities of Gridley, Oroville, and Biggs would experience substantial increases in population growth as a result of implementation of the general

plan, and these Cities could not reduce impacts to less-than-significant levels through mitigation or general plan policies; therefore, the effect would be significant and unavoidable.

CEQA Determination: Under Alternative 1, the Cities of Gridley, Oroville, and Biggs concluded that implementation of the general plan goals, policies, and actions could reduce the impacts of population growth, but not to a less-than-significant level. Furthermore, Gridley determined that the purpose of the general plan is to provide a framework for governing future growth of the city's planning area and thus could not propose feasible mitigation to reduce the expected growth. These three local jurisdictions determined that impacts on population growth would be significant and unavoidable. Accordingly, the impact is considered significant and unavoidable.

Impact SOC-2: Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

As shown in Table 14-5, Butte County and the local jurisdictions are expected to experience an increase in housing of 49–150% through 2035. The County and the Cities of Biggs, Chico, and Oroville determined that implementation of their general plans would not result in the displacement of substantial amounts of housing and would generally allow an increase in the total number of housing units (City of Oroville 2009b; City of Chico 2011b; Butte County 2010b; City of Biggs 2013). Overall, these general plans would allow a net increase of housing and include policies and actions that preserve existing neighborhoods. Those general plans that include redevelopment, such as Chico and Oroville, could result in some displaced housing units. However, the proposed redevelopment is in underutilized areas and would be conducted a voluntary fashion such that substantial numbers of existing housing units would not be displaced (City of Oroville 2009b; City of Chico 2011b). The City of Gridley determined that implementation of the general plan would not result in the displacement of existing houses or residences because changes are not proposed that would require the removal or displacement of any existing housing or residences (City of Gridley 2009).

NEPA Determination: Under Alternative 1, implementation of the general plan would result in an increase in housing in undeveloped areas or underutilized areas of the various jurisdictions and that general plan implementation would not result in a substantial displacement of housing. The impact would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, determined that implementation of the general plan would result in an increase in housing in undeveloped areas or underutilized areas of the various jurisdictions and that general plan implementation would not result in a substantial displacement of housing. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-3: Displace a substantial number of people, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

As shown in Table 14-2, Butte County and the local jurisdictions are expecting an increase in population of 50–150% through 2035. The County and the Cities of Biggs, Chico, and Oroville determined that general plan buildout would not result in displacement of a substantial number of people (City of Oroville 2009b; City of Chico 2011b; Butte County 2010b; City of Biggs 2013) because general plan implementation would not entail the removal of existing housing or businesses that would result in the displacement of people. Overall, these general plans would increase housing where it does not presently exist, and would provide opportunities for infill residential and urban

development. The City of Gridley determined that general plan implementation would not result in the removal or displacement of existing residences or housing; therefore, it would not result in displacing a substantial number of people (City of Gridley 2009).

NEPA Determination: Under Alternative 1, the buildout of various general plans would not result in a substantial displacement of people because it would not result in the removal of existing housing and would generally increase housing in undeveloped or underutilized areas of the various jurisdictions. The impact would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 1, the buildout of various general plans would not result in a substantial displacement of people because it would not result in the removal of existing housing. The impact would be less than significant. No mitigation is required.

Impact SOC-4: Substantially change economic activity in the Plan Area (NEPA: beneficial)

It is anticipated that Alternative 1 would result in an overall projected increase in housing, employment, and income as shown in Tables 14-7 and 14-9 as a consequence of implementation of the general plan. This increase would constitute a beneficial effect on the economic activity resulting from employment and industry within the jurisdictions of the Local Agencies and the Plan Area. While some displacement of farms may result from expansion of urban land uses into agricultural areas, the general projection for the farm sector is expected to result in an increase from 259,000 jobs in 2011 to 281,000 jobs in 2030 (Table 14-7). Thus, it is expected that employment within the county, including the farm sector, would continue to increase.

NEPA Determination: Under Alternative 1, employment and jobs are expected to increase over the next few years and through 2030, including jobs in the farm sector. This would be a beneficial effect.

Impact SOC-5: Substantially affect property tax revenue (NEPA: beneficial)

Property values associated with urban uses are dependent on a wide range of site-specific and broad geographic considerations, such as size and shape of the property, accessibility and visibility, environmental conditions, legal constraints, utilities, zoning and regulation, land supply, and overall economic climate. Covered activities associated with general plan implementation could entail rezoning parcels, introducing new or substantially different uses, and altering or expanding support infrastructure (e.g., water service, transportation facilities) in support of planned development.

Housing in Butte County and the local jurisdictions is projected to increase by 49–150% through 2035. Jobs and employment are also anticipated to increase. The associated increase in urban property uses, the number of businesses, and the expansion of existing businesses are expected to positively contribute to the local tax base through the generation of property tax revenue. Because the County is able to collect more property taxes from urban uses (e.g., residential homes) than from other uses (e.g., agricultural uses) property taxes are expected to increase as urban uses increase. Displacement and overall reduction of farms and agricultural land are expected as urban land uses expand into existing agricultural areas (i.e., a total of approximately 9,000 acres shown in Table 4-7 in Chapter 4, *Agricultural and Forestry Resources*). However, farms typically generate lower levels of property taxes—and taxes in general—than do urban uses. Consequently, it is expected that overall property tax revenues would increase as a result of implementation of the general plan.

NEPA Determination: Under Alternative 1, property tax revenue is expected to increase with implementation of the general plan. This would be a beneficial effect.

**Impact SOC-6: Substantially disproportionately affect minority or low-income populations
(NEPA: significant and unavoidable)**

The following resources, summarized in Table ES-2, were identified to have significant and unavoidable impacts: agricultural resources; air quality; hydrology and water quality; noise; public services and public utilities; recreation and visual resources; and transportation. The significant and unavoidable impacts related to these resources generally result because of the following impact mechanisms.

- Conversion of farmland to nonagricultural land uses as a result of implementation of the general plan in the Local Agencies' jurisdictions.
- Conversion of farmland to nonagricultural uses as a result of other changes in the existing environment in the Local Agencies' jurisdictions.
- Conflicts with applicable air quality plans and violation of air quality standards. Substantial contributions to existing or projected air quality violations as a result of construction emissions the Local Agencies' jurisdictions.
- Exposure of sensitive receptors to substantial pollutant concentrations and a cumulatively considerable net increase of criteria pollutants during construction in the Local Agencies' jurisdictions.
- Create objectionable odors affecting a substantial number of people during construction in the Local Agencies' jurisdictions.
- Generation of greenhouse gases in the Local Agencies' jurisdictions.
- Exposure of people or structures to a significant risk of loss, injury, or death involving flooding as a result of implementation of the general plan in flood zones in the Local Agencies' jurisdictions.
- A substantial permanent increase in ambient noise levels as a result of implementation of the general plan in the Local Agencies' jurisdictions.
- Reduced service ratios or standards for public services and facilities as a result of implementation of the general plan in Gridley.
- Exceedance of wastewater treatment requirements and inadequate capacity by a wastewater treatment provider to serve the projected demand, in addition to the provider's existing commitments, for Gridley.
- Construction of new water or wastewater treatment facilities, stormwater drainage facilities, additional water supplies, or need new landfill services as a result of implementation of the general plan in Gridley.
- Increased use of recreational facilities and a substantial change in visual character and quality, scenic views, and daytime and nighttime glare as a result of implementation of the general plan in Gridley.
- Substantial increases in traffic volumes as a result of regional and local roadways, resulting in exceedance of the capacity of the existing roadway system as a result of implementation of the general plan in the Local Agencies' jurisdictions.

- Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access as a result of implementation of the general plan in Biggs.

As shown in Figure 14-1, minority individuals constitute a meaningfully larger percentage of the population (more than 50%) within and adjacent to Biggs, Gridley, Oroville, and Chico than in the general population. As shown in Figure 14-2, low-income individuals constitute a meaningfully larger percentage of the population (more than 20%) within and adjacent to Oroville and Chico than in the general population. As a result of the significant and unavoidable resource determinations summarized above and the locations of the meaningfully greater populations of minority and low-income persons, it is determined that minority and low-income persons would experience a disproportionately high and adverse effect associated with the impacts listed above.

NEPA Determination: Under Alternative 1, there would be significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation and these impacts would occur in locations of the Plan Area with meaningfully larger populations of minority and low-income persons. Therefore, effects on these populations would be disproportionately high, and the impact would be significant and unavoidable.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operations-related impacts; some covered activities, however, may be exempted from environmental review requirements due to project characteristics, including small projects or infill projects.

It is anticipated that implementation of permanent development projects within the jurisdiction of the Local Agencies would result in the same impacts as those identified in the discussion of Impact SOC-1 through SOC- 6 under Alternative 1 activities associated with implementation of the general plans.

Alternative 2 includes a conservation strategy and conservation measures to preserve and restore habitat in the Plan Area. The exact locations of easements or fee-title acquisition for conservation areas within the Plan Area have not been determined, but an average transaction size of 160 acres to obtain land for the conservation strategy is a general presumption. In most instances, permanent conservation easement acquisitions are preferred, as they allow for continued land use practices in the working landscapes of the county (e.g., farming, ranching, and other land uses) and can be less costly to acquire and maintain than fee-title acquisitions. In some instances, fee-title acquisition will be necessary—for example, in areas where habitat will be restored, conservation lands that require frequent access and intensive habitat management, and instances where landowners are only interested in fee-title sale of the land (Butte County Association of Governments 2015). The

expected total costs for the conservation component or BRCP implementation over the 50-year implementation period are estimated at \$428.1 million. These costs, distributed over the 50-year implementation period, address implementation of conservation actions that contribute to the conservation of natural communities and the conservation and recovery of covered species (see Appendix F of the BRCP).

Impact SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 1 and are significant and unavoidable.

Implementation of covered activities associated with water and irrigation districts and the conservation strategy is not anticipated to result in substantial population growth because these activities would not facilitate growth in the Plan Area beyond that planned by the Local Agencies. The water and irrigation districts would perform activities that they currently perform to upgrade and maintain their systems. These water and irrigation districts provide water for agricultural uses only and so these activities would only accommodate agricultural production growth in their service areas as needed. The conservation strategy and conservation measures—generally entailing such activities as conservation easements on agricultural lands and active restoration along streams—have no mechanism for inducing population growth. Therefore, impacts associated with these types of covered activities would not result in substantial population growth.

NEPA Determination: While the conservation strategy and conservation measures and the water and irrigation districts' activities would not result in substantial population growth, covered activities associated with implementation of the Gridley, Biggs, and Oroville general plans would result in substantial increases in population growth as identified in Alternative 1; therefore, this impact would be significant and unavoidable.

CEQA Determination: While the conservation strategy and conservation measures and the water and irrigation districts' activities would not result in substantial population growth, covered activities associated with implementation of the Gridley, Biggs, and Oroville general plans would result in substantial increases in population growth as identified in Alternative 1; therefore, this impact would be significant and unavoidable.

Impact SOC-2: Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

Impacts associated with implementation of the general plans would be the same as under Alternative 1. Implementation of covered activities associated with water and irrigation districts and the conservation strategy would have a very low potential to displace any existing housing because they would primarily take place along existing district roads or within existing pipeline rights of ways as described in Chapter 2, *Proposed Action and Alternatives*, and depicted in Figure 2-3 of the BRCP. Implementation of covered activities associated with the conservation strategy and conservation measures would similarly have a very low potential to displace existing housing because they would involve either placing easements on existing agricultural lands or restoring habitat in underutilized areas. Therefore, these activities would not displace a substantial number of existing housing units.

NEPA Determination: Under Alternative 2, housing implemented in the general plans would occur in undeveloped areas or underutilized areas of the various jurisdictions and would not result in a substantial displacement of housing. Furthermore, the other covered activities would have a very low potential to displace existing housing. Accordingly, impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 2, housing implemented in the general plans would occur in undeveloped areas or underutilized areas of the various jurisdictions and would not result in a substantial displacement of housing and that the other covered activities would have a very low potential to displace housing. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-3: Displace a substantial number of people, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

Impacts associated with general plan buildout would be the same as under Alternative 1. As disclosed in the discussion of Impact SOC-2 under Alternative 2, implementation of covered activities associated with water and irrigation districts and the conservation strategy would have a very low potential to displace housing. Consequently, they are not expected to displace substantial numbers of people.

NEPA Determination: Alternative 2 would not result in substantial displacement of people as a result of general plan buildout. Furthermore, the other covered activities would have a very low potential to displace existing people. Accordingly, the impact would be less than significant. No mitigation is required.

CEQA Determination: Alternative 2 would not result in substantial displacement of people as a result of general plan bailout. And the other covered activities would have a very low potential to displace existing people. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-4: Substantially change economic activity within the Plan Area (NEPA: beneficial)

Impacts associated with implementation of the general plans would be the same as under Alternative 1.

Because the conservation plan and conservation measures are programmatic in nature and do not specify locations of actions, there is a high degree of uncertainty regarding the extent of Alternative 2's effects on economic activity within the Plan Area. However, the process of land development is complex and subject to a wide range of influences, and implementation of the proposed conservation strategy and issuance of take permits would change development conditions, which could in turn affect the overall economic activity in the Plan Area. Issuance of take permits to local authorities would streamline the permit process and clearly define project mitigation requirements for future projects. The streamlined process may allow for quicker completion of projects and greater efficiency in land development. Take authorization under Alternative 2 would be associated with specific costs in the form of fees or land dedications (summarized in Table 8-5, *Summary of BRCP Mitigation Implementation Costs by Cost Category*, and 8-6, *Summary of BRCP Conservation Component Implementation Costs by Cost Category*, of the BRCP).

More displacement of farms and agriculture is likely to occur under Alternative 2 than under Alternative 1 because the covered activities outside the Local Agencies' jurisdictions (conservation

strategy and conservation measures) are anticipated to remove a certain amount of land from agricultural production through conversion to different habitat types. Approximately 3,800 acres of three agricultural communities—rice, irrigated pasture, and irrigated cropland—are expected to be removed in the Plan Area (Table 4-5 of the BRCP). As shown in Table 4-9 in Chapter 4, *Agricultural and Forestry Resources*, 1.3% of the overall amount of rice in the Plan Area, the top crop in the county (Table 14-8) would be affected. When applying the 2010 total production value for rice—\$182,248,000 (Table 14-8)—this decrease in ricelands could result in a potential loss of approximately \$2,369,224. However, the estimated gross value of agricultural production in the county was \$622,414,000 in 2010 (Butte County 2010a); consequently, the potential loss would be equivalent to less than 0.4% of the gross value of the county’s agricultural production. Alternative 2 includes land purchase of conservation easements on agricultural lands that would permit continued agricultural use. The protection target for agricultural lands is approximately 26,000 acres of rice and irrigated pasture and irrigated cropland. Thus, this land would continue to be farmed. Changes in agricultural practices (e.g., use of pesticides or herbicides, schedule of activities) may be required as conditions of the proposed easements, but the conditions would be compatible with maintaining the ongoing economic viability of agricultural use.

NEPA Determination: Alternative 2 is expected to increase employment and jobs in the Plan Area associated with implementation of the general plans and preservation of existing agricultural lands under the conservation strategy would more than compensate for the potential loss of dollars from the reduction of ricelands. This would be a beneficial effect.

Impact SOC-5: Substantially affect property tax revenue (NEPA: beneficial)

Impacts associated with implementation of the general plans would be the same as under Alternative 1.

Land acquisition for the conservation strategy could indirectly affect property tax revenue by influencing a number of land valuation factors. Land acquisition would result in specific restrictions on the use of individual preserve properties. The extent and type of restrictions would be highly variable, depending on the current conditions and use of the property. For example, agricultural lands acquired may continue in agriculture use, but with minor conditions on use to enhance biological values. Restrictions on use of property could be perceived in the marketplace as detrimental to the value of adjacent agricultural properties because of the potential for endangered species relocation onto adjacent agricultural properties. Alternative 2 provides take coverage for adjacent agricultural parcels a half a mile from the reserve edges to prevent impacts on surrounding agricultural practices (see Chapter 6, Section 6.9 of the BRCP for additional information). Other more intensively managed lands—such as commercial or industrial uses—near preserves would not likely be affected to any measurable degree, because these lands offer little habitat value that would attract sensitive species.

Land acquisition under Alternative 2 could affect property tax revenue by removing agricultural lands from production and from County tax rolls. Lands acquired through conservation easement would continue to be taxed as agricultural lands. Land acquired in fee title would be broadly distributed throughout Plan Area and may have a lower tax rate than the same parcels under current conditions. Because Alternative 2 does not specify the amount of fee-title versus easement acquisition and has not yet identified specific parcels for acquisition, a detailed determination of impact on property tax revenue is not feasible. However, the conservation strategy’s priority is to

use conservation easements wherever feasible, thereby keeping the land in production and reducing the amount of land removed from the tax rolls.

In general, agricultural lands provide far less revenue from property taxes on a per-acre basis than urban uses. Agricultural lands tend to have a lower assessed value than urban and commercial land uses. Accordingly, the potential loss in property taxes associated with removal of agricultural lands from the tax rolls through implementation of the conservation strategy would be offset by higher tax rates—and, consequently, revenues—associated with planned urban development actions that are covered activities under Alternative 2.

NEPA Determination: The expected increase in property tax revenue associated with implementation of the general plans under Alternative 2 and the continued revenue from agricultural lands placed under conservation easement are anticipated to offset any potential losses from the removal of agricultural lands from the County's tax rolls through implementation of the conservation strategy and conservation measures. This would be a beneficial effect.

Impact SOC-6: Substantially disproportionately affect minority or low-income populations (NEPA: significant and unavoidable)

The effects associated with implementation of the general plans would be the same as under Alternative 1 and are significant and unavoidable.

Implementation of the conservation strategy and conservation measures was determined to have less-than-significant effects (after mitigation) on air quality, noise and transportation and significant and unavoidable impacts on air quality and agriculture. These conclusions are summarized below.

Agriculture

Implementation of the conservation strategy would result in the direct removal of important agricultural land and conversion of this land to nonagricultural uses. The conservation strategy would preserve approximately 26,000 acres of agricultural land; however, the removal of important agricultural land is considered significant and unavoidable.

Air Quality

Construction-related emissions produced as a result of implementing the conservation strategy and conservation measures would result in impacts on air quality by potentially conflicting with the Northern Sacramento Valley Planning Area 2006 Air Quality Attainment Plan; violating air quality standards; resulting in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard; exposing sensitive receptors to substantial pollutant concentrations; and creating objectionable odors affecting a substantial number of people. These impacts would be considered significant. However, BRCP AMMs, in addition to implementation of Mitigation Measures AQ-1a and AQ-1b, which would implement Butte County Air Quality Management District mitigation measures for construction equipment and fugitive dust, respectively, would reduce these air quality impacts to a less-than-significant level.

Greenhouse gas (GHG) emissions associated with implementing BRCP conservation measures could exceed applicable GHG thresholds and could conflict with GHG reduction planning efforts in the Plan Area. Mitigation Measure AQ-6, which would require the implementation of best construction

practices for minimizing GHG emissions, but not below threshold levels. Therefore, this impact is considered significant and unavoidable.

Noise

Implementation of the conservation strategy and conservation measures would likely result in the generation of noise levels in excess of standards established in local general plans or noise ordinances during construction, and would likely result in a temporary or periodic increase in ambient noise. Mitigation Measure NOI-1, which would employ noise-reducing construction practices during construction and initiate a complaint/response tracking program prior to construction, would reduce this impact.

Transportation

The conservation strategy and conservation measures could result in potential conflicts with transportation plans, programs, and planned projects. Mitigation Measure TRA-3 was incorporated to reduce this impact.

As a result of the impact determinations disclosed in the discussion of Impact SOC-6 under Alternative 1 and the locations of the meaningfully greater populations of minority and low-income persons, it is determined that minority and low-income persons would experience a disproportionately high and adverse effect associated with the impacts listed above.

NEPA Determination: Significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation would occur in locations of the Plan Area with meaningfully larger populations of minority and low-income persons. Therefore, effects on these populations would be disproportionately high and adverse. The mitigation measures incorporated for the effects associated with air quality, noise, and transportation would reduce effects associated with implementation of the conservation strategy and conservation measures. However, overall, the impact would be significant and unavoidable to environmental populations.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be very similar to those described under Alternative 2.

Impact SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

According to the County's general plan EIR, this impact would be similar to that under the Alternatives 1 and 2: in other words, it would not result in substantial population growth in the County's planning area (Butte County 2010b). The impact would be less than significant. The City of Chico's general plan EIR determined that fewer population impacts would occur under Alternative 3 because less development would occur; however, that alternative is not expected to provide adequate residential or nonresidential development to meet future demands.

The general plan EIRs for the Cities of Gridley, Biggs, and Oroville concluded that population growth predicted under a reduced development alternative would be substantial (City of Oroville 2009b; City of Gridley 2009; City of Biggs 2013). Although population and growth in these cities would be less than that described under Alternative 1, Alternative 3 would still result in a larger buildout potential of residential units than the projections for Gridley's population growth; would still result in substantial growth in Oroville; and could result in growth beyond that anticipated by BCAG's population projections.

Implementation of covered activities outside the Local Agencies' jurisdictions (i.e., water and irrigation districts' activities and the conservation strategy) would result in impacts similar to those under Alternative 2. There is very low potential for these covered activities to result in a substantial population increase because they are not activities that facilitate growth beyond that planned by the Local Agencies.

NEPA Determination: While the conservation strategy and conservation measures and the water and irrigation districts' activities would not result in substantial population growth, covered activities associated with implementation of the Gridley, Oroville, and Biggs general plans would result in substantial increases in population growth as identified in Alternative 1; therefore, this impact would be significant and unavoidable.

CEQA Determination: The conservation strategy and conservation measures and the water and irrigation districts' activities would not result in substantial population growth, covered activities associated with implementation of the Gridley, Oroville, and Biggs general plans would result in substantial increases in population growth as identified in Alternative 1; therefore, the impact would be significant and unavoidable.

Impact SOC-2: Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

Impacts associated with implementation of the general plans would be the same as under Alternative 2. Because implementation of covered activities associated with water and irrigation districts and the conservation strategy would have the same—but slightly reduced—impacts as Alternative 2, this impact would be slightly less than that disclosed for Alternative 2.

NEPA Determination: Construction of housing under Alternative 3 (i.e., their Reduced Development Alternatives) would occur in undeveloped or underutilized areas of the various jurisdictions and would not result in a substantial displacement of housing. Furthermore, the other

covered activities would have a very low potential to displace existing housing. Accordingly, the impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of the general plans under Alternative 3 (e.g., their Reduced Development Alternatives) would not result in a substantial displacement of housing. Furthermore, the other covered activities would have a very low potential to displace housing. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-3: Displace a substantial number of people, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

Impacts associated with general plan buildout would be the same as under Alternative 1. As disclosed in the discussion of Impact SOC-2 under Alternative 2, implementation of covered activities associated with water and irrigation districts and the conservation strategy would have a very low potential to displace housing. Consequently, they are not expected to displace substantial numbers of people.

NEPA Determination: Substantial displacement of people would not occur as a result of general plan buildout under the Alternative 3. Furthermore, the other covered activities would have a very low potential to displace existing people. Accordingly, the impact would be less than significant. No mitigation is required.

CEQA Determination: Substantial displacement of people would not occur as a result of general plan buildout under Alternative 3 and that the other covered activities would have a very low potential to displace existing people. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-4: Substantially change economic activity within the Plan Area (NEPA: beneficial)

It is anticipated that Alternative 3 would result in a lesser benefit to economic activities in the Plan Area than described in Tables 14-2 and 14-7 because the covered activities within the Local Agencies' jurisdictions would be reduced. While development would still occur, it would be more highly concentrated and limited to certain areas. Consequently, Alternative 3 is anticipated to result in fewer positive effects on employment and businesses than Alternative 2.

The effects associated with implementation of the conservation strategy and conservation measures would be similar to those under Alternative 2, but would be reduced. Because the conservation plan and conservation measures are programmatic in nature and do not specify locations of actions, there is a high degree of uncertainty regarding the extent of Alternative 3's effects on economic activity in the Plan Area. It is anticipated that reduced development would lead to a decreased extent of conservation because of reduced development fees would be available to support habitat preservation and restoration, and because the lesser extent of impacts associated with development would require less mitigation.

Alternative 3 would likely result in less displacement of farms and agriculture than Alternative 2 because the conservation strategy would conserve fewer acres and fewer acres would be removed by urban development. Approximately 1,876 acres of three agricultural communities—rice, irrigated pasture and irrigated crop land—are expected to be removed in the Plan Area under this alternative. Approximately 1% of the overall amount of rice in the Plan Area, the top crop in the county (Table 14-8), would be affected. When applying the 2010 total production value for rice—\$182,248,000 (Table 14-8—this could result in a potential loss of approximately \$1,822,480.

However, the estimated gross value of agricultural production in the county was \$622,414,000 in 2010 (Butte County 2010a); consequently, the potential loss would be equivalent to less than 0.3% of the gross value of the county's agricultural production.

NEPA Determination: The expected increase in employment and jobs in the Plan Area associated with general plan implementation under Alternative 3 and preservation of existing agricultural lands under the conservation strategy would more than compensate for the potential loss of dollars from the reduction of ricelands. This would be a beneficial effect.

Impact SOC-5: Substantially affect property tax revenue (NEPA: beneficial)

Impacts associated with general plan implementation under the Reduced Development Alternatives would be less than those under Alternative 2 because the extent of development would be reduced, thereby generating reduced revenues.

The reduction of conserved lands associated with the reduction of urban development would have a minimal effect on tax revenues because lands currently in agricultural production would continue to generate tax revenue. Because Alternative 2 does not specify the amount of fee-title versus easement acquisition and has not yet identified specific parcels for acquisition, a detailed determination of impact on property tax revenue is not feasible. However, the conservation strategy's priority is to use conservation easements wherever feasible, thereby keeping the land in production and reducing the amount of land removed from the tax rolls.

Although both development and conservation would be reduced under this alternative, it is anticipated that the potential loss in property taxes associated with removal of agricultural lands from the tax rolls through implementation of the conservation strategy would be offset by higher tax rates—and, consequently, revenues—associated with planned urban development actions that are covered activities under Alternative 2.

NEPA Determination: Although Alternative 3 would result in a lesser increase in property tax revenue associated with general plan implementation under the Reduced Development Alternatives than would Alternative 2, it would still result in an overall increase above baseline. This would be a beneficial effect.

Impact SOC-6: Substantially disproportionately affect minority or low-income populations (NEPA: significant and unavoidable)

The effects associated with general plan implementation under the Alternative 3 would be similar to but less than those under Alternative 1 because less development is expected. The effects associated with the conservation strategy under the Alternative 3 would be similar to but less than those under Alternative 2 because there would likely be fewer conservation lands.

NEPA Determination: Significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation would occur in locations of the Plan Area with meaningfully larger populations of minority and low-income persons. Therefore, effects on these populations would be disproportionately high and adverse. The mitigation measures incorporated for the effects associated with air quality, noise, and transportation would reduce effects associated with implementation of the conservation strategy and conservation measures. However, overall, the impact would be significant and unavoidable.

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2. The covered activities associated with water and irrigation districts and transportation projects would be the same under Alternative 4 as under Alternative 2. Therefore, impact mechanisms for population, socioeconomics, and environmental justice would be similar to those described for Alternative 2.

Impact SOC-1: Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure) (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Impacts associated with implementation of the general plans would be the same as under Alternative 2. The increase in conserved rielands and grasslands under Alternative 4 would have a low potential to cause substantial population growth because the conservation would primarily place conservation easements on existing agricultural lands or restore habitat in underutilized areas.

NEPA Determination: While the conservation strategy and conservation measures and the water and irrigation districts' activities would not result in substantial population growth, covered activities associated with implementation of the Gridley, Oroville, and Biggs general plans would result in substantial increases in population growth as identified in Alternative 2; therefore, this impact would be significant and unavoidable.

CEQA Determination: While the conservation strategy and conservation measures and the water and irrigation districts' activities would not result in substantial population growth, covered activities associated with implementation of the Gridley, Oroville, and Biggs general plans would result in substantial increases in population growth as identified in Alternative 2; therefore, this impact would be significant and unavoidable.

Impact SOC-2: Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

The increase in rielands and grasslands under Alternative 4 when compared to Alternative 2 is not anticipated to result in the demolition of existing housing. This is because conservation would primarily place conservation easements on existing agricultural lands or restore habitat in underutilized areas. These activities would not result in the demolition of substantial number of existing housing units because the land is already in agricultural production where few to no houses are located. Impacts of covered activities resulting from implementation of the general plans of the Local Jurisdictions would be the same as under Alternative 2, as described in the discussion of the Impact SOC-2 for Alternative 2.

NEPA Determination: Implementation of general plans under Alternative 4 would occur in undeveloped areas or underutilized areas of the various jurisdictions and would not result in a substantial displacement of housing. Furthermore, the other covered activities would have a very

low potential to displace existing housing. Accordingly, there the impact would be less than significant. No mitigation is required.

CEQA Determination: Implementation of the general plans under Alternative 4 would not result in a substantial displacement of housing and that the other covered activities would have a very low potential to displace housing. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-3: Displace a substantial number of people, necessitating the construction of replacement housing elsewhere (NEPA: less than significant; CEQA: less than significant)

Impacts associated with general plan buildout would be the same as under Alternative 1. As disclosed in the discussion of Impact SOC-2 under Alternative 2, implementation of covered activities associated with water and irrigation districts and the conservation strategy would have a very low potential to displace housing. Consequently, they are not expected to displace substantial numbers of people.

NEPA Determination: Under Alternative 4 substantial displacement of people would not occur as a result of general plan buildout. Furthermore, the other covered activities would have a very low potential to displace existing people. Accordingly, impacts would be less than significant. No mitigation is required.

CEQA Determination: Under Alternative 4 substantial displacement of people would not occur as a result of general plan buildout. Furthermore, the other covered activities would have a very low potential to displace existing people. Accordingly, the impact would be less than significant. No mitigation is required.

Impact SOC-4: Substantially change economic activity within the Plan Area (NEPA: beneficial)

Impacts associated with implementation of the general plans would be the same as under Alternative 2. The projected increase in housing, employment, and income would be a beneficial effect. Impacts associated with implementation of covered activities outside the Local Agencies' jurisdiction would be similar to those under Alternative 2. However, less displacement of farms and agriculture is likely to occur under Alternative 4 than under Alternative 2 because the conservation strategy would protect more acres of ricelands. It is anticipated the potential loss of ricelands would be less than anticipated under Alternatives 2 and 3. Moreover, Alternative 4 would entail increased land acquisition through conservation easements on agricultural lands that would ensure continued agricultural use. The conservation target of 35,300 additional acres of ricelands would aim to maintain production on these lands.

NEPA Determination: The expected increase in employment and jobs in the Plan Area associated with implementation of the general plans under Alternative 4 and preservation of existing agricultural lands under the conservation strategy would more than compensate for the potential loss of dollars from the loss of agricultural production, which would be less than that under Alternative 2. This effect would be beneficial.

Impact SOC-5: Substantially affect property tax revenue (NEPA: beneficial)

Impacts associated with implementation of the general plans would be the same as under Alternative 2. Impacts associated with implementation of the conservation strategy and conservation measures would be similar to those under Alternative 2. However, the targeted

protection of an additional 35,300 acres of ricelands is anticipated increase tax revenues generated by those lands compared to revenues under Alternative 2.

NEPA Determination: The expected increase in property tax revenue associated with implementation of the general plans and the continued revenue from agricultural lands placed under conservation easement under Alternative 4 are anticipated to offset any potential losses from the removal of agricultural lands from the County's tax rolls through implementation of the conservation strategy and conservation measures. This effect would be beneficial.

Impact SOC-6: Substantially disproportionately affect minority or low-income populations (NEPA: significant and unavoidable)

The effects associated with implementation of the general plans would be the same as under Alternative 2 and implementation of the conservation strategy and conservation measures would be the same as under Alternative 2. Significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation would occur in locations of the Plan Area with meaningfully larger populations of minority and low-income persons. The mitigation measures incorporated for the effects associated with air quality, noise, and transportation would reduce effects associated with implementation of the conservation strategy and conservation measures. However, overall, the effects on these populations would be disproportionately high and adverse.

NEPA Determination: As with Alternative 2, the effects on populations of minority and low-income persons would be disproportionately high, and the impact would be significant and unavoidable under Alternative 4.

14.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for population and housing, socioeconomics, and environmental justice is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. This analysis considered agricultural, urban development, and water supply development projects, including roadway projects; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

This analysis determines whether the covered activities not analyzed in previous environmental documents (e.g., those activities not considered in the general plan EIRs) would result in cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Past, present, and reasonably foreseeable future projects are identified in Chapter 3, Section 3.3.2, under *Cumulative Impacts*. Past and present projects have resulted in an overall increase in population and housing in the Plan Area. Flood control activities have reclaimed land that can be developed for urban uses, and water supply projects have been developed to provide urban infrastructure with water. These projects have provided a beneficial cumulative effect on population

and housing by supporting and providing housing and development necessary for a growing population.

Past and present projects have also resulted in an overall growing market of employment and jobs in the Plan Area, providing a beneficial cumulative effect on socioeconomics. While agricultural resources in the Plan Area are experiencing a decline, the industry provides employment and is anticipated to continue doing so with future water supply infrastructure and irrigation efficiency projects.

There is a potential for disproportionate effects on minority and low-income populations to occur in the Plan Area as a result of past and present projects in the vicinity of the concentration of minority and low-income populations (Figures 14-1 and 14-2). It is surmised that some disproportionate effects on environmental justice populations have occurred because of the concentration of such populations in the Plan Area.

Alternative 1—No Action (No Plan Implementation)

Population and Housing

The Cities of Gridley, Oroville, and Biggs determined that cumulatively considerable and significant impacts on population and housing would result from implementation of their general plans. Consequently, past, present, and reasonably foreseeable future projects—including implementation of the general plans—would result in cumulatively considerable and significant impacts. Accordingly, Alternative 1 would result in an incremental contribution to cumulative impacts.

Socioeconomics

It is anticipated that implementation of the general plans would result in an overall increase in market activities as a result of urban development and would not substantially reduce expected agricultural production in the Plan Area, given the projections presented in Table 4-7. Accordingly, Alternative 1 would not result in an incremental contribution to cumulative socioeconomic effects.

Environmental Justice

It is anticipated that implementation of the general plans would result in overall disproportionate effects on environmental justice populations. Specifically, Alternative 1 would result in disproportionate effects as a result of significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation. While mitigation measures are available to reduce some of these effects as discussed in the impact analyses, the effect would remain disproportionate. Accordingly Alternative 1 would result in an incremental contribution to cumulative environmental justice impacts.

Alternative 2—Proposed Action

Population and Housing

The Cities of Gridley, Oroville, and Biggs determined that cumulatively considerable and significant impacts on population and housing would result from implementation of their general plans, which is included in the covered activities. Accordingly, past, present, and reasonably foreseeable future projects—including general plan buildout—would result in cumulatively considerable and

significant impacts on population and housing. The covered activities associated with implementation of the conservation strategy and conservation measures would not result in a substantial increase in population or displace housing because these activities have a very low potential to affect population growth or housing. Overall, Alternative 2 would result in an incremental contribution to cumulative population and housing impacts.

Socioeconomics

It is anticipated that implementation of the general plans would result in an overall increase in market activities as a result of urban development. While the conservation strategy might result in a reduction of employment opportunities and tax base, the covered activities associated with implementation of the general plans would offset any potential reduction. Therefore, Alternative 2 would not result in an incremental contribution to cumulative socioeconomic effects.

Environmental Justice

It is anticipated that implementation of the general plans would result in overall disproportionate effects on environmental justice populations. Specifically, Alternative 2, like Alternative 1, would result in disproportionate effects as a result of significant and unavoidable impacts on agricultural resources, air quality, hydrology and water quality, noise, public services and public utilities, recreation and visual resources, and transportation. While mitigation measures are available to reduce some of these effects as discussed in the impact analyses, the effect would remain disproportionate. Accordingly, the Alternative 2 would result in an incremental contribution to cumulative environmental justice impacts.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

Although the extent of impacts on population and housing, socioeconomics, and environmental justice associated with implementation of the conservation strategy and conservation measures varies slightly between these alternatives, the mechanism and implications are the same as under Alternative 2. Both alternatives would result in a cumulatively considerable contribution to cumulative impacts on population and housing and environmental justice. Neither Alternative 3 nor Alternative 4 would result in a cumulatively considerable contribution to cumulative impacts on socioeconomics.

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15.1 Affected Environment

This section provides an overview of relevant transportation regulations and the existing transportation systems in the Plan Area.

15.1.1 Regulatory Setting

Federal

No directly relevant federal regulations have been identified.

State

Caltrans Route Concept Reports

Caltrans has completed transportation or route concept reports for State Route (SR) 32, 70, 99, 149, 162, and 191. These reports identify long-range improvements and establish the *concept*, or desired, level of service (LOS) for specific corridor segments. These reports identify long-range improvements needed to bring an existing facility up to standards anticipated to adequately serve 20-year traffic forecasts. Additionally, the reports identify the ultimate design concept for conditions beyond the immediate 20-year design period. An overview of each route concept report is provided in pages 4.13-3 through 4.13-6 of the County general plan EIR (Butte County 2010); these overviews are hereby incorporated by reference.

Local

Butte County Association of Governments

Metropolitan Transportation Plan

BCAG adopted the MTP for Butte County in December 2012 (Butte County Association of Governments 2012). The MTP specifies the policies, projects, and programs necessary to maintain, manage, and improve the region's transportation system. The Butte County 2012 MTP covers the 23-year period between 2012 and 2035, and it is required to be updated every 4 years. The MTP includes an Air Quality Conformity Analysis and Determination, as well as a Program EIR. The MTP provides a comprehensive long-range view of transportation needs and opportunities for the county. It establishes goals and objectives for the future system. BCAG transportation projects within and outside the UPAs were included in the MTP and the EIR that evaluates the environmental impacts of the MTP. In addition, Caltrans projects outside the UPAs related to SR 70 capacity improvements and SR 99 capacity improvements are identified in Chapter 6, *Highways and Local Streets and Roads*, of the MTP. The funded SR 70 capacity improvement projects include construction of passing lanes from Ophir Road to Palermo Road, from Palermo Road to East Gridley Road, and from East Gridley Road to the Yuba County line in the next 23 years. The funded SR 99

capacity improvement projects include construction of auxiliary lanes, Eaton Road/SR 99 interchange improvements, SR 99/East Avenue interchange improvements, and SR 99/Southgate interchange improvement in Chico by 2035. The unfunded improvements on SR 70 and SR 99 include SR 99 corridor projects, SR 99 passing lane projects between Gridley and the junction at SR 149, SR 99–Neal Road interchange improvements, SR 70–Ophir Road interchange improvements, and SR 70–Georgia Pacific interchange improvements.

Regional Transportation Improvement Program

As the designated Regional Transportation Planning Agency (RTPA) serving the incorporated cities of Biggs, Chico, Gridley, Oroville; the town of Paradise; and the county, BCAG is charged with the responsibility of preparing the RTIP.

The 2014 RTIP (Butte County Association of Governments 2013) covers the 5 fiscal years from 2014/15 through 2018/19. The purpose of the RTIP is to identify project recommendations for the Regional Improvement Program (RIP) funds made available to BCAG as provided by the State Transportation Improvement Program (STIP) process. The RTIP project recommendations are then subject to approval by the California Transportation Commission for inclusion into the STIP.

SR 70 passing lane projects from Ophir Road to Palermo Road and from Palermo Road to East Gridley Road are included in the 2014 RTIP.

Coordinated Public Transit and Human Services Transportation Plan

BCAG produced a Coordinated Public Transit–Human Services Transportation Plan for Butte County in 2008. This plan identifies existing public transit services in the county, unmet transit needs, and recommendations for providing future services. The plan specifically identifies and prioritizes projects eligible for federal funding to address transportation needs of persons of low income, persons with disabilities, and seniors.

Butte County

General Plan

The Circulation Element of the County’s General Plan 2030 (Butte County 2012) is concerned with the safe and efficient movement of people and goods in and around the county. To ensure that the county’s transportation system can accommodate growth anticipated during the 20-year planning period, the Circulation Element works closely with the Land Use Element. The Circulation Element sets forth goals and policies describing the overall mobility program for the county. The following policies regarding transportation and circulation are applicable to the Plan Area.

- Regional land use and transportation planning (policies 1.1 through 1.3, 3.4, 3.5, 3.7, 3.8, 7.1 through 7.3, 8.1 through 8.3, 9.1, 11.1, and 11.2).
- Provisions for bicycles and pedestrians (policies 3.1 through 3.3, 3.6, 5.1 through 5.5, 9.2, 10.1, and 10.2).
- Level of service standards (LOS C for County roadways and concept LOS for Caltrans facilities) and mitigation of traffic impacts (policies 6.1 through 6.6).

Bicycle Plan

The purpose of the *Butte County Bicycle Plan* (Butte County 2011) is to encourage use of bicycling as a sensible, non-polluting, healthy, and affordable mode of transportation and recreation in the unincorporated County areas through the provision of feasible improvements that promote interconnectivity between similar facilities in local communities, parks, and other recreational areas within the county.

The plan provides maps showing planned future bikeway facilities in the unincorporated County areas, as well as connectivity to existing and proposed bikeway facilities within the municipal jurisdictions.

Incorporated Municipalities

The Plan area includes four incorporated municipalities: Biggs, Chico, Gridley, and Oroville. The roadway capacity level of service policies adopted by each of these jurisdictions guides what is considered to be acceptable operations on local roadways in their jurisdictional boundaries and respective SOIs.

City of Biggs General Plan

The Circulation Element (City of Biggs 2014a) describes the full range of transportation systems in the City of Biggs and its planning area. The goals, policies, and actions established in the element guide development of the City's circulation system, including roadways and transit, bicycle, and pedestrian facilities and services. The following policies regarding transportation and circulation are applicable to the Plan Area.

- Regional land use and transportation planning (policies 1.1 through 1.4, 1.9, 2.2, and 4.3).
- Provisions for bicycles and pedestrians (policies 4.1, 4.2, and 4.4).
- Level of service standards (LOS C on all City roadways and intersections and D or better during peak travel times) and mitigation of traffic impacts (policies 1.3, 1.5, 1.6, and 2.1).

City of Chico General Plan

The Circulation Element (City of Chico 2011a) establishes a multimodal transportation network that accommodates vehicles, transit, bicycles, and pedestrians. This network is intended to enhance mobility for the entire community. The following regarding transportation and circulation are applicable to the Plan Area.

- Regional land use and transportation planning (policies 1.1, 1.8, 2.1, and 2.2).
- Provisions for bicycles and pedestrians (policies 3.3 through 3.5, 4.2, and 4.3).
- Level of service standards (LOS D for most roadways and intersections at the peak PM period and concept LOS for Caltrans facilities) and mitigation of traffic impacts (policies 1.2 through 1.4).

City of Gridley General Plan

The Circulation Element (City of Gridley 2010) addresses the movement of people, goods, resources, and services in the Gridley planning area. The following policies regarding transportation and circulation are applicable to the Plan Area.

- Regional land use and transportation planning (policies 4.1 through 4.3, 5.10 through 5.13).
- Provisions for bicycles and pedestrians (policies 2.3 through 2.5, 4.4, and 5.7).
- Level of service standards (LOS D for city roadways and intersections and concept LOS for Caltrans facilities) and mitigation of traffic impacts (policies 1.5, 1.8 through 1.9).

City of Oroville General Plan

The Circulation Element (City of Oroville 2009a) accounts for the critical link between land use patterns and transportation. It has been developed in close correlation with the Land Use Element to ensure that the circulation system will be adequate to serve Oroville's existing and future land uses. The following policies regarding transportation and circulation are applicable to the Plan Area.

- Regional land use and transportation planning (policies 1.1 through 1.6, 2.2, 2.3, 6.10 and 7.7).
- Provisions for bicycles and pedestrians (policies 6.1, 6.2, 6.4, 6.8, and 7.1).
- Level of service standards (LOS D for most city roadways and intersections and concept LOS for Caltrans facilities) and mitigation of traffic impacts (policies 2.1 and 3.4).

15.1.2 Environmental Setting

This section provides an overview of the existing transportation system in the Plan Area, comprising roadways, nonmotorized (pedestrian and bicycle) facilities, public transit services, and airports. The circulation elements of the Local Agencies' general plans provide detailed descriptions of existing transportation conditions and planned transportation improvements and are incorporated by reference in the sections detailed below.

Roadway System

Existing Roadway System

The County is not served regionally by an interstate freeway. State highways in the county are operated by Caltrans and are conventional highways, with the exception of several segments of SR 70 and SR 99 in the Chico and Oroville areas that are designated as freeways.

The Plan Area is served by four major highways. SR 99 travels north-south, connecting the county with Yuba City and Sacramento to the south and Red Bluff to the northwest. SR 70 splits from SR 99 south of Marysville, runs north to Oroville, and continues northeast toward Quincy. SR 149 connects SR 99 and SR 70 and provides a connection between Chico and Oroville. SR 162 is a mainly east-west highway that connects southern Butte County, including Oroville, with Interstate 5 (I-5) in Glenn County. Figure 1-1 shows the major state routes in the Plan Area.

Existing Traffic Conditions

Traffic operating conditions on major roadway facilities in the county were evaluated on pages 4.13-1 through 4.13-23 of the County general plan EIR (Butte County 2010). Facilities were selected for analysis either because they were believed to carry relatively high volumes or because they provide an important connection to populated areas or major county resources. The traffic operations are described in terms of LOS, a scale used to determine the operating quality of a roadway segment or intersection based on volume-to-capacity (V/C) ratio or average delay experienced by vehicles on

the facility. The levels range from A to F, with LOS A representing free traffic flow and LOS F representing severe traffic congestion.

The LOS was calculated for key roadway segments to evaluate the quality of traffic conditions on the major roadway facilities in the county. Table 4.13-4 of the County general plan EIR summarizes the existing LOS on the key roadway segments as well as the jurisdictions establishing the LOS policy for the facilities. The following major roadway segments in the Plan Area were found to operate unacceptably during the PM peak hour in 2006 based on the LOS standard established by the applicable state, county, or incorporated municipal jurisdiction.

- SR 32 between East Avenue and West 1st Street (in Chico)—LOS F.
- SR 70 from Montgomery Avenue to Grand Avenue (in Oroville)—LOS E.
- SR 162 from Olive Highway to Lower Wyandotte Road (in Oroville)—LOS F.
- The Skyway from SR 99 to Notre Dame Boulevard (in Chico)—LOS F.

Bicycle and Pedestrian Facilities

The bicycle and pedestrian transportation system in the Plan Area consists of local and regional bikeways and trails; these facilities are defined below.

- Class I bike paths are designated for exclusive use by both bicyclists and pedestrians, and are separated from, but often adjacent to, roadways.
- Class II bike lanes usually consist of one-way lanes adjacent to the traffic lane on either side of the roadway, separated from the motor vehicle lane by a painted white stripe and designated with signs and permanent pavement markings. These facilities are intended for the exclusive use of bicyclists. However, in rural areas, bike lanes are located on the roadway shoulder, which is also utilized by pedestrians.
- Class III bike routes may be located on roadway facilities with sufficient width for shared motor vehicle and bicycle use and are usually only designated by signs indicating the route and shared use.

In the Chico urban area, the County currently has an existing Class I bike path on the eastern side of the Midway extending from the Chico city limits on East Park Ave south to Jones Avenue. Within the Chico urban area, there are also existing Class I bike paths, Class II bike lanes and Class III bike routes that connect facilities within Chico city limits and continue into the County's jurisdiction.

In the greater Oroville area, County bicycle facilities include a Class I bike path adjacent to Palermo Road from Lincoln Boulevard to Palermo-Honcut Highway and a Class II bike lane on Lincoln Boulevard from Oroville city limits south to Monte Vista Avenue. Within the Oroville urban area, there are also existing Class I bike paths, Class II bike lanes, and Class III bike routes that connect facilities within Oroville city limits and continue into the County's jurisdiction.

In the Durham area south of Chico, a Class II bike lane facility runs along Durham-Pentz Highway from the Midway east to Lott Road. In the other portions of the county, existing urban bikeway facilities typically fall under the jurisdiction of the Cities of Biggs and Gridley or the Town of Paradise.

The *Butte County Bicycle Plan* (Butte County 2011) identifies planned future bikeway facilities in unincorporated county areas. The bikeway facilities in the unincorporated areas of the county are

typically planned to interface with facilities planned by the local jurisdictions. The proposed bikeway system was designed to provide the most practical routes and facilities, where possible, along with already identifiable recreational routes frequented by more avid bicyclists in the county.

Public Transit Service

Public transit services in the Plan Area consist of public buses, paratransit, private motorcoach operators, and passenger rail service. Butte Regional Transit (B-Line) is administered by BCAG and provides fixed route bus and paratransit services to Chico, Oroville, Paradise, Gridley, Biggs, and the unincorporated county. Additional public bus services include Glenn Ride, which provides services from Chico to Glenn County, and Plumas Transit, which provides weekly service between Chico and Quincy. For seniors and disabled individuals, there are also a number of service providers and social service agencies that provide door-to-door service. Greyhound Lines provides the scheduled motorcoach service to and from the Butte County area.

Intercity passenger rail service is provided by Amtrak. Amtrak operates the Coast Starlight train originating in Seattle with major stops in Portland, Eugene, Sacramento, and Oakland and terminating in Los Angeles. Trains operate daily through the Chico Amtrak station.

Airport

Air transportation in the county is accommodated by a number of private and public airfields and heliports serving general aviation and agricultural users. Most of these are small fields for private use. Commercial flights to distant or out-of state destinations are available at Sacramento International Airport, about 60 miles south of Oroville.

The major aviation facilities in the Plan Area are the Chico Municipal Airport, the Oroville Municipal Airport, and the Rancharo Airport. The Chico Municipal Airport is the county's largest airport, serving one commercial airline as well as private and public agency aviation. The Oroville Municipal Airport is the second largest airport, serving the south county areas. The Rancharo Airport is privately owned and operated.

15.2 Environmental Consequences

This section incorporates by reference the impact determinations presented for transportation in the Local Agencies' general plan EIRs (as described in more detail in Chapter 3, Section 3.3, *Resource Chapter Organization and NEPA/CEQA Requirements*).¹ The significance findings and mitigation measures of each of the general plan EIRs are compiled in Appendix C. The Lead Agencies have reviewed these analyses and found them to be appropriate for the purposes of this EIS/EIR.

15.2.1 Methods for Impact Analysis

Transportation impacts are usually evaluated in terms of temporary impacts (i.e., during construction) and permanent impacts (i.e., changes in traffic as a result of land use changes).

¹ These previous CEQA documents are available collectively for public review at the BCAG offices (2580 Sierra Sunrise Terrace, Suite 100 Chico, CA 95928-8441). Individual general plans and EIRs are also available at each of the respective land use agencies.

Potential impacts were assessed by reviewing the local standards and general plans, and by contacting local agencies.

The BRCP would not provide individual project approvals or entitlements for any private or public development or infrastructure projects. Accordingly, this EIS/EIR does not provide CEQA or NEPA coverage for individual covered activities and does not function as a *programmatic* or *umbrella* CEQA or NEPA document for regional development and infrastructure projects. The BRCP EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. Accordingly, the methods for analyzing direct impacts on transportation are tailored to evaluate the decisions of the Local Agencies, water and irrigation districts, and Caltrans to approve, permit, and implement the BRCP. This EIS/EIR also incorporates the impact determinations of the Local Agencies' general plan EIRs to analyze indirect impacts on transportation.

It is assumed that all covered activities approved by the Local Agencies would be consistent with the policies of their respective general plans and would be subject to any mitigation measures identified such that impacts would be adequately mitigated to the extent identified in the general plan EIRs. Water and irrigation district activities have not been analyzed in previous CEQA documents. These activities include: rerouting of existing canals, replacement of water delivery structures, replacement of large weirs, mowing and trimming vegetation along service roads, and removing aquatic vegetation from canals. Potential impacts on transportation could occur primarily during construction or maintenance of these activities.

The methodology for evaluating impacts on traffic and transportation resources also incorporates standard best management practices (BMPs) required by Caltrans during construction of transportation projects and summarized in Appendix D. The analysis assumes that Caltrans would incorporate these BMPs where appropriate on transportation projects within the Plan Area.

15.2.2 Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the action alternatives would be considered to have a significant effect if they would result in any of the conditions listed below.

- A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system.
- Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access.
- Conflict with adopted transportation plans, programs, or projects.

15.2.3 Impacts and Mitigation Measures

Alternative 1—No Action (No Plan Implementation)

As discussed in Chapter 2, Section 2.3.1, *Alternative 1—No Action (No Plan Implementation)*, under Alternative 1, project proponents would apply for permits on a project-by-project basis, without a coordinated and comprehensive effort to minimize and mitigate biological impacts through the BRCP. Under the Alternative 1, urban development and public infrastructure projects would continue to occur pursuant to the approved general plans of the Local Agencies and BCAG's regional plan(s). No regional conservation strategy or conservation measures would be implemented;

therefore, benefits to and impacts on transportation associated with the conservation strategy and conservation measures would not occur.

However, activities such as land development and associated infrastructure development, operation, and maintenance as established in the Local Agencies' general plans would introduce new vehicles onto the regional and local roadway system. Impacts on the regional and local transportation system have been anticipated as part of regional transportation planning efforts, which take into account population growth consistent with local general plans. Impacts on local roadways from individual development projects would be addressed by local studies (e.g., CEQA review). Regional projects developed by BCAG and the Local Agencies are expected to implement mitigation for these traffic impacts. Mitigation to reduce traffic impacts will also be implemented in association with local projects implemented by developers—either by the developers or by the municipalities using development impact fees.

Because Alternative 1 would incorporate the land developments and infrastructure projects adopted in the local general plans and transportation plans (including the 2012 MTP and the 2014 RTIP), the impacts of this alternative on transportation and circulation are those that have been evaluated in the general plan EIRs of the various jurisdictions in the Plan Area.

Impact TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The Local Agencies' general plan EIRs concluded that land development through implementation of the general plans would result in a substantial increase in traffic volumes on regional and local roadways, resulting in exceedance of the capacity of the existing roadway system. The County (Butte County 2010) determined that implementation of the County General Plan 2030 would result in traffic operation impacts on major roadway facilities that would remain significant after implementation of plan policies and the adoption of identified mitigation measures. The City of Chico (2011b) determined that implementation of its general plan would result in significant and unavoidable impacts on state facilities within the city limits; no additional mitigation measures are identified in the EIR. The City of Gridley (2009) determined that implementation of its general plan would result in traffic operation impacts on local and state facilities that would remain significant after implementation of plan policies and the adoption of identified mitigation measures. The City of Oroville (2009b) determined that implementation of its general plan would result in significant and unavoidable impacts on state facilities within the city limits; no additional mitigation measures are identified in the EIR. The City of Biggs (2014b) determined that implementation of its general plan would result in significant and unavoidable traffic operation impacts on local and state facilities and that no mitigation would reduce this impact (City of Biggs 2014b). The construction of state road projects within these jurisdictions would need to comply with Caltrans requirements and BMPs summarized in Appendix D; however, compliance would not likely reduce the significant and unavoidable impacts associated with the implementation of the general plans because the substantial increase in traffic is associated with the expected land development and population increase.

Short-term traffic impacts could result from construction-related activities associated with water and irrigation district construction and recurring maintenance. Such activities would likely include grading and fill operations and construction of drainage infrastructure, requiring the movement of heavy equipment on roadways during limited construction periods. The number of vehicle trips

generated by these activities is expected to entail traffic volumes similar to those associated with current maintenance activities. Furthermore, construction projects would be located in areas with little traffic. Consequently, they would not result in a significant increase in traffic. Long-term traffic impacts associated with water and irrigation district activities could result from monitoring and recurring maintenance and is anticipated to use existing employees of the water and irrigation districts and thus not result in a substantial increase in traffic.

NEPA Determination: Alternative 1 would result in a substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system as a result of implementation of the general plans. Traffic operation impacts on major roadway facilities, traffic operation impacts on local and state facilities, and impacts on state facilities within city limits would remain significant after implementation of plan policies and the adoption of identified mitigation measures in general plan EIRs, where applicable. This impact would be significant and unavoidable.

CEQA Determination: Alternative 1 would result in a substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system as a result of implementation of the general plans. Traffic operation impacts on major roadway facilities, traffic operation impacts on local and state facilities, and impacts on state facilities within city limits would remain significant after implementation of plan policies and the adoption of identified mitigation measures in general plan EIRs, where applicable. This impact would be significant and unavoidable.

Impact TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The Local Agencies, except the City of Biggs, determined in their general plan EIRs that land development activities and construction of any associated infrastructure project and transportation projects would not result in significant impacts related to traffic safety hazards or inadequate emergency access. The City of Biggs (2014b) determined that implementation of its general plan would result in significant and unavoidable impacts on traffic hazards and emergency access because funding has not been secured to improve existing roadway design deficiencies, and the City is uncertain as to whether roadway connectivity improvements proposed in the general plan would be implemented simultaneously with future development(City of Biggs 2014b).

The construction of state road projects within these jurisdictions would need to comply with Caltrans requirements and BMPs summarized in Appendix D; compliance would likely reduce the significant and unavoidable impacts associated with the implementation of the general plans because they would maintain the safety of roads during construction and maintain emergency access during construction.

The construction and recurring maintenance activities of the water and irrigation districts would not result in safety hazards or inadequate emergency access as these activities would not be located on the existing roadway system and thus would not result in a change in the existing roadway system or a modification to the existing roadway system such that emergency vehicles could not have access. Furthermore, maintenance of water and irrigation district service roads would actually maintain the existing service roads such that hazards or inadequate emergency access would not occur.

NEPA Determination: Alternative 1 would result in significant impacts related to traffic safety hazards or inadequate emergency access within the city of Biggs. Implementation of policy

provisions in the proposed general plan would reduce the impacts. However, funding has not been secured to improve existing roadway design deficiencies, and it is uncertain as to whether roadway connectivity improvements proposed in the general plan would be implemented simultaneously with future development. Therefore, impacts would remain significant after implementation of plan policies. Because no other feasible mitigation would reduce these impacts, the impacts would be significant and unavoidable.

CEQA Determination: Alternative 1 would result in significant impacts related to traffic safety hazards or inadequate emergency access within the City of Biggs. Implementation of policy provisions in the proposed general plan would reduce the impacts. However, funding has not been secured to improve existing roadway design deficiencies, and it is uncertain as to whether roadway connectivity improvements proposed in the general plan would be implemented simultaneously with future development. Therefore, impacts would remain significant after implementation of plan policies. Because no other feasible mitigation would reduce these impacts, the impacts would be significant and unavoidable.

Impact TRA-3: Potential conflicts with transportation plans, programs, and planned projects (NEPA: no impact; CEQA: no impact)

A number of transportation projects are proposed in the Plan Area, including programmed and future projects in the BCAG's RTP, planned projects in the County/city TIPs and capital improvement plans (CIPs), and local projects that may not be specifically listed. Because Alternative 1 would incorporate the infrastructure and transportation projects adopted in the local general plans and regional transportation plans, this alternative would not conflict with transportation plans, programs, and planned projects developed by the Local Agencies.

NEPA Determination: Alternative 1 would not conflict with transportation plans, programs, and planned projects because it would incorporate the infrastructure and transportation projects adopted in the local general plans and transportation plans. There would be no impact. No mitigation is required.

CEQA Determination: Alternative 1 would not conflict with transportation plans, programs, and planned projects because it would incorporate the infrastructure and transportation projects adopted in the local general plans and transportation plans. There would be no impact. No mitigation is required.

Alternative 2—Proposed Action

Under Alternative 2, covered activities would include the existing, planned, and proposed land uses over which the Permit Applicants have land use authority; state and local transportation projects; maintenance of water delivery systems (e.g., WCWD canals and similar delivery systems); habitat restoration, enhancement, and management actions (conservation measures); and adaptive management and monitoring activities. Most covered activities would require individual permits and approvals pursuant to the Local Agencies' general plans and land use regulations or the requirements of the implementing agency (such as Caltrans and irrigation districts) and would undergo subsequent project-level CEQA review and relevant NEPA review for construction and operation-related impacts; some covered activities, however, may be exempted from this environmental review requirement due to project characteristics, including small projects or infill project.

Impact TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Development associated with implementation of the Local Agencies' general plans, Caltrans projects, and water and irrigation district activities would result in the same effects on traffic volumes as described in Impact TRA-1 under Alternative 1. Therefore, a substantial increase in traffic is expected compared to existing traffic volumes and the capacity of the roadway system.

Implementation of the conservation strategy and conservation measures would not result in a significant increase in traffic over existing conditions. Short-term traffic impacts could result from construction-related activities associated with restoration. Such activities would likely include grading and fill operations and construction of drainage infrastructure, requiring the movement of heavy equipment on roadways during limited construction periods. The number of vehicle trips generated by these activities is expected to entail traffic volumes similar to those associated with current farming and grazing activities. Furthermore, construction projects would generally be small, of limited duration, and located in areas with little traffic. Consequently, they would not result in a significant increase in traffic over existing conditions. Long-term traffic impacts associated with implementation of the conservation strategy and conservation measures could result from public access to individual conservation lands for recreational or educational purposes. Public access to the conservation lands is not expected to result in a significant increase in traffic because such access would be limited to uses compatible with the preservation and enhancement of natural communities—in other words, heavy recreational uses would be disallowed. Long-term traffic impacts associated with conservation measures could also result from normal operations and maintenance activities in the conservation areas and conservation-related facilities and infrastructures. Such activities are expected to include planting trees, seeding grassland areas, removing fences, adding or resizing culverts, transporting livestock, and mowing fuel breaks. Long-term traffic impacts associated with operations and maintenance activities in the conservation areas and conservation-related facilities and infrastructures would be expected to be minimal.

NEPA Determination: The impact determination would be the same as Alternative 1 for development associated with implementation of the Local Agencies' general plans. The conservation strategy would not result in a substantial increase in traffic as short-term and long-term traffic generation is not expected to substantially differ from the No Action alternative. The impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 1 for development associated with implementation of the Local Agencies' general plans; however, the conservation strategy would not result in a substantial increase in traffic short-term and long-term traffic generation is not expected to substantially differ from the No Action alternative. The impact would be significant and unavoidable.

Impact TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts associated with implementation of the general plans, Caltrans projects, and water and irrigation district activities are the same as those identified in the discussion of Impact TRA-2 under Alternative 1. The Local Agencies, except the City of Biggs, determined that implementation of their general plans would not result in significant impacts on traffic hazards or emergency access.

However, the City of Biggs determined that significant and unavoidable impacts would result because funding has not been secured for roadway improvements whether planned roadway improvements would coincide with future development is uncertain.

Implementation of the conservation strategy and conservation measures would not result in a significant increase in traffic, as discussed in Impact TRA-1. Construction projects related to the conservation strategy, traffic related to public use of conservation areas, and operation and maintenance activities in the conservation areas and conservation-related facilities and infrastructures would generally be small, of limited duration, and located in areas with little traffic.

NEPA Determination: Like Alternative 1, Alternative 2 would result in significant impacts related to traffic safety hazards or inadequate emergency access within the City of Biggs. Impacts would be reduced but would remain significant after implementation of Biggs general plan policies. The conservation strategy would not result in significant traffic impacts. Because no other feasible mitigation would reduce the impacts identified in the Biggs General Plan EIR, the impacts would be significant and unavoidable.

CEQA Determination: Like Alternative 1, Alternative 2 would result in significant impacts related to traffic safety hazards or inadequate emergency access within the City of Biggs. Impacts would be reduced but would remain significant after implementation of Biggs general plan policies. The conservation strategy would not result in significant traffic impacts. Because no other feasible mitigation would reduce the impacts identified in the Biggs General Plan EIR, the impacts would be significant and unavoidable.

Impact TRA-3: Potential conflicts with transportation plans, programs, and planned projects (NEPA: less than significant with mitigation; CEQA: less than significant with mitigation)

The impacts associated with the proposed transportation projects within the Plan Area and potential conflicts with transportation plans, programs, and planned projects are the same as those disclosed in the discussion of Impact TRA-3 under Alternative 1, and no conflicts are expected. A number of transportation projects are proposed in the Plan Area, including programmed and future projects in the BCAG's RTP, Caltrans District 3 planned improvements, planned projects in the County/city TIPs and CIPs, and local projects that may not be specifically listed. Many of the transportation projects identified would require only minor additional right-of-way or would be conducted within existing rights-of-way; these would have minimal potential to conflict with land acquisition objectives of the conservation strategy. However, some transportation projects are still conceptual and only general information on alignments or construction locations has been developed. The establishment of conservation areas in areas where land may be required for transportation project rights-of-way could impair construction of these transportation projects; similarly, the construction of transportation projects in such areas could limit their suitability as conservation areas. Consequently, this impact associated with the conservation strategy would be considered significant as there could be potential conflicts with transportation plans. However, implementation of Mitigation Measure TRA-3 would reduce this impact to a less-than-significant level.

NEPA Determination: The impact determination would be the same as Alternative 1 for development associated with implementation of the Local Agencies' general plans. The establishment of conservation areas in areas where land may be required for transportation project rights-of-way could impair construction of these transportation projects; similarly, the construction of transportation projects in such areas could limit their suitability as conservation areas.

Consequently, the impact would be significant. Implementation of Mitigation Measure TRA-3 would reduce this impact to a less-than-significant level.

CEQA Determination: The impact determination would be the same as Alternative 1 for development associated with implementation of the Local Agencies' general plans. The establishment of conservation areas in areas where land may be required for transportation project rights-of-way could impair construction of these transportation projects; similarly, the construction of transportation projects in such areas could limit their suitability as resource preserves. Consequently, the impact would be significant. Implementation of Mitigation Measure TRA-3 would reduce this impact to a less-than-significant level.

Mitigation Measure TRA-3: Avoid acquisition of conservation lands that are within or adjacent to proposed alignments of programmed or planned transportation projects

As part of the process of identifying suitable sites for land acquisition under the conservation strategy, the Implementing Entity will avoid lands that are within or adjacent to proposed alignments for the programmed or planned transportation projects identified in BCAG's MTP and RTIP and Caltrans District 3 roadway improvement projects. Lands within or adjacent to the proposed rights-of-way should not be considered for acquisition unless it is determined that, as part of acquisition, adequate avoidance and minimization measures could be developed and implemented to permit construction of the proposed project and avoid conflicts with the goals and objectives of the proposed Plan.

Alternative 3—Reduced Development/Reduced Fill

Alternative 3 is similar to Alternative 2 except that it uses the various general plan EIR reduced development alternatives as described in Chapter 2, *Proposed Action and Alternatives*, to create a single reduced development footprint. Covered activities under this alternative would be similar to those described in the BRCP but would be limited to the reduced development footprint for a reduced permit term of 30 years. The reduced footprint and reduced land conservation would result in fewer built structures and less ground disturbance.

It is anticipated that under Alternative 3, fewer acres of natural communities would be conserved because reduced development would provide reduced funding for the conservation strategy. However, it is anticipated that the conservation measures would be the same because the reduction of fill would be achieved through the reduced development footprint of the Local Agencies' general plans rather than through modification of the conservation measures. Consequently, the impacts related to implementation of the conservation strategy and conservation measures would be the same as under Alternative 2.

Impact TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Development specified in Alternative 3 would result in similar impacts on traffic volumes and roadway capacity as would Alternative 2, but the severity of these impacts would be less because of the reduction in overall development. Nevertheless, because of the increased traffic volumes that would be associated with this alternative, this impact would be significant and unavoidable. The transportation-related effects associated with implementation of the conservation strategy and

conservation measures would be similar to, but slightly less than, those under Alternative 2 because it is anticipated there would be fewer acres preserved.

NEPA Determination: Transportation-related effects associated with Alternative 3 would be similar to, but slightly less than, those under Alternative 2 as a result of less development and fewer acres preserved. The impact would be significant and unavoidable.

CEQA Determination: Transportation-related effects associated with Alternative 3 would be similar to, but slightly less than, those under Alternative 2 as a result of less development and fewer acres preserved. The impact would be significant and unavoidable.

Impact TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts under Alternative 3 are similar to those under Alternative 2 even though the impacts would be of a lesser extent when compared with Alternative 2 because less development and fewer acres of conservation land are expected under this alternative. The Local Agencies, except the City of Biggs, determined that implementation of their general plans would not result in significant impacts on traffic hazards or emergency access. However, the City of Biggs determined that significant and unavoidable impacts would result because funding has not been secured for roadway improvements whether planned roadway improvements would coincide with future development is uncertain.

NEPA Determination: The impact determination would be the same under Alternative 3 as for Alternative 2. The impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same under Alternative 3 as for Alternative 2. The impact would be significant and unavoidable.

Impact TRA-3: Potential conflicts with transportation plans, programs, and planned projects (NEPA: less than significant with mitigation; CEQA: less than significant with mitigation)

The potential for conflicts with transportation plans, programs, and planned projects associated with implementation of the conservation strategy and conservation measures would be the same as under Alternative 2. The establishment of conservation areas in areas where land may be required for transportation project rights-of-way could impair construction of these transportation projects; similarly, the construction of transportation projects in such areas could limit their suitability as conservation areas.

NEPA Determination: Similar to under Alternative 2, the potential for conflicts with transportation plans, programs, and planned projects would be significant; however, implementation of Mitigation Measure TRA-3 would reduce this impact to a less-than-significant level.

CEQA Determination: Similar to under Alternative 2, the potential for conflicts with transportation plans, programs, and planned projects would be significant; however, implementation of Mitigation Measure TRA-3 would reduce this impact to a less-than-significant level.

Mitigation Measure TRA-3: Avoid lands that are within or adjacent to proposed alignments of programmed or planned transportation projects

Alternative 4—Greater Conservation

Alternative 4 would be similar to Alternative 2 except that under Alternative 4, the conservation strategy would include the conservation of an additional 9,850 acres of grassland and 35,310 acres of riceland. Alternative 4 would include the same conservation measures as Alternative 2, and all other acreage protection targets for natural communities/land types would be the same as described under Alternative 2.

Under Alternative 4, covered activities such as urban and rural land developments and construction, operation, and maintenance of various infrastructure projects would be the same as under Alternative 1.

Impact TRA-1: A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

Development associated with implementation of the Local Agencies' general plans would result in the same effects on traffic volumes as Alternative 1 and is expected to substantially increase traffic compared to existing traffic volumes and the capacity of the roadway system. The transportation-related effects associated with implementation of the conservation strategy and conservation measures would be similar to those under Alternative 2 and would not result in a substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact TRA-2: Safety hazards due to design features, incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit), or inadequate emergency access (NEPA: significant and unavoidable; CEQA: significant and unavoidable)

The impacts under Alternative 4 are the same as those under Alternative 2 despite the increased area of conserved grassland and riceland. The Local Agencies, except the City of Biggs, determined that implementation of their general plans would not result in significant impacts on traffic hazards or emergency access. However, the City of Biggs determined that significant and unavoidable impacts would result because funding has not been secured for roadway improvements whether planned roadway improvements would coincide with future development is uncertain.

NEPA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

CEQA Determination: The impact determination would be the same as Alternative 2; the impact would be significant and unavoidable.

Impact TRA-3: Potential conflicts with transportation plans, programs, and planned projects (NEPA: less than significant with mitigation; CEQA: less than significant with mitigation)

The potential for conflicts with transportation plans, programs, and planned projects associated with implementation of the conservation strategy and conservation measures would be similar to

those described in Impact TRA-3 under Alternative 2. However, the increased area of conserved grassland and ricelands increases the potential for conflicts to arise when compared to Alternative 2.

NEPA Determination: Though the potential for conflicts with transportation plans, programs, and planned projects would be similar to those under Alternative 2, the increased area of conserved grassland and riceland increases the potential for conflicts to arise. Implementation of Mitigation Measure TRA-3 would reduce this significant impact to a less-than-significant level.

CEQA Determination: Though the potential for conflicts with transportation plans, programs, and planned projects would be similar to those under Alternative 2, the increased area of conserved grassland and riceland increases the potential for conflicts to arise. Implementation of Mitigation Measure TRA-3 would reduce this significant impact to a less-than-significant level.

Mitigation Measure TRA-3: Avoid lands that are within or adjacent to proposed alignments of programmed or planned transportation projects

15.2.4 Cumulative Analysis

Methods and Approach

The cumulative analysis for transportation impacts is a qualitative evaluation using the past, present, and reasonably foreseeable future projects listed in Chapter 3, Section 3.3.2, under *Cumulative Impacts*; the general plan EIR impact determinations for cumulative impacts, where applicable; and the impact determinations identified above for the various alternatives.

This analysis determines whether the covered activities would result in a cumulatively considerable incremental contribution that, when combined with the past, present, and reasonably foreseeable future projects, would result in a cumulatively significant impact.

Cumulative Impacts

Alternative 1—No Action (No Plan Implementation)

The Local Agencies determined that cumulatively considerable and significant impacts on the regional and local roadway system in the Plan Area would result from implementation of the general plans (development and associated infrastructure and transportation projects). Therefore, past, present, and reasonably foreseeable future projects—including implementation of the general plans—would result in cumulatively considerable and significant impacts on the transportation system.

Alternative 2—Proposed Action

The Local Agencies determined that cumulatively considerable and significant impacts on the roadway systems in their jurisdictions would result from implementation of Alternative 2. Accordingly, past, present, and reasonably foreseeable future projects—including implementation of the general plans—would result in cumulatively considerable and significant impacts on the transportation system. The conservation strategy and conservation measures are not expected to result in a substantial increase in traffic volumes or to degrade traffic operation of the existing roadway system and therefore would not contribute to the cumulatively considerable and

significant impacts on the transportation system from the other covered activities (i.e., development) Therefore, overall, Alternative 2 is expected to result in an cumulatively considerable and significant impacts.

Alternative 3—Reduced Development/Reduced Fill and Alternative 4—Greater Conservation

Although the extent of conservation associated with implementation of the conservation strategy and conservation measures varies with these two alternatives, the mechanism and implications associated with effects on transportation are the same as under Alternative 2. Neither Alternative 3 nor Alternative 4 would result in a cumulatively considerable contribution to cumulative impacts on transportation.

15.3 References

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Chapter 16

Other Required NEPA and CEQA Analyses

NEPA requires an EIS and CEQA requires an EIR to evaluate a number of other types of environmental impacts in addition to those already addressed in the resource chapters. The analysis required under NEPA and CEQA is in many cases similar; therefore, the NEPA and CEQA required analyses in this section are combined, as appropriate.

16.1 Significant and Unavoidable Impacts

Tables ES-2 and ES-3 and Appendix C summarize the significant and unavoidable impacts and their determinations, as disclosed in Chapters 4 through 15 of this EIS/EIR, for the proposed action. The resources are listed below.

- Agricultural Resources as a result of converting agricultural lands to urban land uses or native habitat, primarily due to covered activities, but also due to the conservation strategy, within Local Agency jurisdictions and the Plan Area.
- Air Quality and Climate Change as a result of conflicts with the Northern Sacramento Valley Planning Area 2006 Air Quality Attainment Plan due to covered activities for the cities of Gridley, Oroville, and Biggs (i.e., urban land uses identified in the Local Agencies' general plans); violations of air quality standards as a result of covered activities for all Local Agencies; causing cumulatively considerable net increases in criteria pollutants as a result of covered activities for all Local Agencies; generation of greenhouse gas emissions as a result of covered activities for Local Agencies but also due to the conservation strategy; and, exposing sensitive receptors to objectionable odors as a result of covered activities for the cities of Oroville and Gridley.
- Hydrology, Water Resources, and Water Quality as a result of exposing structures and people to loss, injury, death involving flooding due to covered activities within all Local Agency jurisdictions (i.e., urban land uses identified in Local Agencies' general plans).
- Noise as a result of substantial and permanent increase in ambient noise levels above levels currently existing due to covered activities (i.e., urban land uses identified in Local Agencies' general plans) and as a result of substantial temporary or periodic increase in ambient noise levels associated with construction and agricultural uses within the city of Biggs.
- Public Services and Utilities as a result of the increased use and need of public services and utilities due to covered activities within the city of Gridley (i.e., urban land uses).
- Recreation and visual resources as a result of increased use of recreational facilities and substantial changes to the visual character and quality of the area due to covered activities within the city of Gridley (i.e., urban land uses).
- Population as a result of substantial increases population growth in the cities of Gridley, Biggs, and Oroville due to the implementation of covered activities (i.e., urban land uses).
- Environmental Justice as a result of disproportionately high and adverse effects on minority and low-income populations in the Plan Area due to covered activities on agricultural resources, air quality, hydrology and water quality, noise, public services and utilities, recreation and visual

resources, and transportation. Implementation of the conservation strategy would also contribute to the significant and unavoidable impacts on agricultural resources and air quality.

- Transportation as a result of a substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system due to covered activities within all Local Agency jurisdictions (i.e., urban land uses); and as a result of increasing traffic safety hazards and inadequate emergency access due to covered activities within the city of Biggs.

16.2 Short-Term Uses of the Environment versus Maintenance and Enhancement of Long-term Productivity (NEPA)

In accordance with NEPA, Section 102 (40 USC 4332), an EIS must include a discussion of the relationship between the short-term uses of the environment and the maintenance and enhancement of long-term productivity. The proposed action is fundamentally designed to ensure that the long-term productivity of the environment is ensured, despite the short-term uses of the environment. In the short-term, a wide range of urban development and infrastructure projects would be carried out under the terms and conditions of the proposed action. Although these activities would result in a loss of habitat and the take of sensitive species, these activities would be undertaken pursuant to the terms of the proposed action. The proposed action provides for a comprehensive mechanism to avoid, minimize, and mitigate for impacts on sensitive species and natural communities from covered activities.

16.3 Irreversible and Irretrievable Commitments of Resources (NEPA)/Significant Irreversible Environmental Changes (CEQA)

In accordance with NEPA, Section 102 (40 USC. 4332), an EIS must explain which environmental impacts of the proposed action are irreversible or would result in an irreversible commitment of resources, such as consumption of fossil fuels. CEQA similarly requires an EIR to discuss uses of nonrenewable resources that would occur during the initial phases and the continued operation of a project (State CEQA Guidelines Section 15126.2[c]).

The proposed action would result in an irreversible commitment of fossil fuel resources for habitat restoration and enhancement activities, as well as irreversible commitment of fossil fuels to perform surveys, manage the administrative functions of the proposed action, and maintain and operate the preserve system. Preserves would be established under the proposed action to provide for ecosystem viability and species enhancement; however, establishment of preserves, whether purchased in-fee or through easements, would not be considered an irreversible commitment of resources since this use would not preclude modifications or adjustments in the use in the future.

No specific development activities are authorized under the proposed action that would result in the irreversible commitment of resources; however, urban development as described by the Local Agencies' general plans is included as a covered activity. The conversion of existing agricultural or

other land to urban uses is considered an irreversible environmental commitment. Conversion of land to urban uses is a covered activity by the proposed action, but such conversion is not specifically authorized by the proposed action. The irreversible commitment of lands to urban uses and of nonrenewable and renewable resources have been evaluated in the Local Agencies' general plan EIRs and incorporated into the analysis, as described below.

- **Butte County.** Implementation of the general plan would result in the conversion of vacant land to other land uses and the intensification of underutilized areas. This development would constitute a long-term commitment of these areas to urban-type land uses. In addition, construction of buildings and infrastructure in the general plan area would irretrievably commit nonrenewable resources, both from within and outside the county. These non-renewable resources include mined materials, such as sand, gravel, steel, lead, copper, and other metals. Implementation of the general plan also would commit the consumption of fossil fuels, natural gas, and gasoline, as well as commit limited, renewable resources, such as lumber and water for the long term. (Butte County 2010.)
- **City of Biggs.** Implementation of the general plan could result in the conversion of undeveloped properties to residential, commercial, office, public, and recreational uses. Subsequent development under the general plan would constitute a long-term commitment to these uses. Development of the city would irretrievably commit energy and building materials to construction and maintenance. Renewable, nonrenewable, and limited resources including water, oil, gasoline, lumber, sand and gravel, asphalt, steel, and similar materials. (City of Biggs 2013.)
- **City of Chico.** Implementation of the general plan would result in the conversion of undeveloped and/or underutilized residentially zoned properties to other uses. It is unlikely that circumstances would arise that would justify the return of those sites to their original condition. Development of the city as allowed by the general plan would irretrievably commit building materials and energy to construction and maintenance. Renewable, nonrenewable, and limited resources that would likely be consumed include oil, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials. (City of Chico 2010.)
- **City of Gridley.** The land use designations proposed in the general plan would result in the commitment of allowable land uses to certain areas for the foreseeable future. Specifically, it would allow the conversion of agriculture to other land uses, thus resulting in an irreversible environmental change. Irreversible changes would also likely occur as a result of future excavation, grading, and associated construction activities for development of land uses within the general plan planning area. The construction and operation of future urban development would consume renewable and nonrenewable resources, such as energy and water, as well as concrete, glass, plastic, and petroleum products. These resources would also be irreversibly committed as urban development occurs. (City of Gridley 2009.)
- **City of Oroville.** Development allowed under the general plan would result in the conversion of vacant land to commercial and residential uses and the intensification of underutilized area. This would constitute a long-term commitment to urban-type land uses. Development would also irretrievably commit nonrenewable resources associated with the construction and operation of urban buildings and infrastructure, including sand, gravel, steel, lead, copper, and other materials. It would also represent a long-term consumption of fossil fuels, natural gases, and gasoline, as well as renewable resources such as lumber and water. (City of Oroville 2008.)

Due to the irreversible commitment of resources and significant irreversible environmental changes that would occur as a result of general plan implementation, irreversible commitment of resources and significant irreversible environmental changes are expected to occur under the proposed action.

16.4 Growth Inducement (CEQA)

CEQA requires that an EIR discuss the extent to which a proposed project would directly or indirectly foster economic or population growth or the construction of new housing, including removing obstacles to growth that may result in significant environmental effects (State CEQA Guidelines Section 15126.2[d]). The proposed action includes covered activities that would have direct growth-inducing impacts. The proposed action also includes covered activities that would not directly cause growth to occur, but rather would accommodate growth that is already planned in the Local Agencies' general plans.

Future development that is covered under the proposed action and assessed as part of the proposed action impact analysis is considered planned development because it is derived directly from the Local Agencies' general plans and from transportation plans adopted by regional transportation authorities. The direct and indirect impacts of this planned growth and any mitigation requirements is provided under the general plan and transportation EIRs for each jurisdiction, as well as under project-specific environmental compliance that would be required for specific developments in the future. In general, the local jurisdictions made the following growth inducing findings in the various general plan EIRs.

- **Butte County.** Implementation of the general plan would directly induce population, employment, and economic growth by allowing development in areas not currently designated for urban growth. However, the proposed general plan includes policies to control how growth occurs within the county and to encourage infill development. It also includes policies that would maintain the rural character of the county and minimize the environmental impacts of anticipated growth. Indirect growth-inducing impacts would be growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by a new project allowed under the general plan (Butte County 2010).
- **City of Biggs.** Implementation of the general plan would induce population and job growth in the city. The general plan may indirectly induce growth by removing an obstacle to additional growth and development, such as removing a constraint on a required public service. Proposed roadway improvements would support such growth in the city's planning area. Infrastructure development, including extension of infrastructure into unserved areas, would be provided for under the general plan. Therefore, the general plan is considered growth inducing (City of Biggs 2013).
- **City of Chico.** The intent of the general plan is to accommodate anticipated growth through compact, infill, and mixed use development, as well as to focus redevelopment along transit corridors and at key locations in the city. The general plan would provide for anticipated growth, would minimize outward expansion of the city's boundaries, and would retain the current Butte County greenline. Thus, growth accommodated under the general plan would be confined to the immediate Chico area and would avoid growth effects of sprawl development patterns or induced growth on parcels adjacent to the city (City of Chico 2010).

- **City of Gridley.** The general plan intends to provide for and address future growth and conservation in the city and its planning area. Indirect growth-inducing effects would result, in part, from changes in the goals and policies of the general plan, as they provide the framework to accommodate future growth; thus, the general plan is considered growth inducing (City of Gridley 2009).
- **City of Oroville.** The general plan allows for additional growth, however, no direct impacts would occur as a result of implementing the plan, since the general plan does not ensure that development in the planning area would occur. Although the general plan does allow for additional growth, it includes policies which focus new development within existing city limits and sphere of influence and would control growth such that it would maintain and enhance the character of Oroville (City of Oroville 2008).

The 50-year term of the proposed action and take permits would extend beyond the planning horizon of the local general plans. The proposed action does not induce future growth since other factors (e.g., updates to the general plans) would be more accommodating to growth than the attainment of take authorization.

The proposed action would provide a streamlined mechanism for specific projects to comply with ESA and CESA. An improved permitting mechanism would not remove a barrier to growth but would perhaps lower it. Under the proposed action, permit approval would be easier for development applicants to secure, resulting in improved development efficiencies and potential development cost savings.

The efficiencies and cost savings under the proposed action would affect different types of development projects differently. For example, development of lands where there are few species concerns would not be substantially affected by the proposed action since permitting without the proposed action would be a minor issue. Projects with a greater level of species concerns would be most affected by implementation of the proposed action since these projects would benefit most by streamlined permit approvals. Nevertheless, without the proposed action, these projects would presumably still be able to proceed under the existing case-by-case permit approval process. Given the current rate of development and growth being experienced in the Plan Area, the cost of issuing permit approvals on a project-by-project basis does not appear to be a noticeable disincentive to development. Thus, the proposed action may influence the speed with which development could proceed, but not the extent of development. The speed of development would be more substantially influenced by larger economic conditions, population growth, housing stocks, as well as local land use and growth-management controls.

16.5 Environmentally Preferable/Superior Alternative

The State CEQA Guidelines (Section 15126.6([e][2])) require that an environmentally superior alternative be identified from the alternatives considered. The *environmentally superior alternative* is generally defined as the alternative that would result in the least adverse environmental impacts on the project site and the surrounding area. NEPA regulations require that when an agency has concluded an EIS and the decision is recorded in a public Record of Decision (ROD) (40 CFR Section 1505.2), the ROD needs to “identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable” (40 CFR Section 1505.2[b]). The agency must discuss all factors essential to the agency decision and

discuss how those factors influenced the agency's decision (40 CFR Section 1505.2[b]). The *environmentally preferable and superior alternative* is the alternative that would result in the least damage to the environment. Based on the analysis presented in Chapters 4 through 15, the environmentally preferable/environmentally superior alternative is the proposed action. The proposed action would provide the most comprehensive approach to habitat conservation among the alternatives, with the greatest potential to provide long-term benefits to the covered species.

16.6 Executive Orders

Executive orders that are relevant to the proposed action are described below.

Executive Order 11988—Floodplain Management

Executive Order 11988, Floodplain Management, requires federal agencies to prepare floodplain assessments for proposed projects located in or affecting floodplains. An agency proposing to conduct an action in a floodplain must consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the only practicable alternative involves siting in a floodplain, the agency must minimize potential harm to or development in the floodplain and explain why the action is proposed in the floodplain.

The proposed action includes covered activities that would allow future development that may occur in floodplains within the incorporated cities. This development is planned development that has been evaluated, and mitigation measures have been identified in the Local Agencies' general plan EIRs and incorporated in Chapter 9, *Hydrology, Water Resources, and Water Quality*.

Executive Order 11990—Protection of Wetlands

Executive Order 11990, Protection of Wetlands, requires federal agencies to prepare wetland assessments for projects located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands.

The proposed action has been designed to address impacts on federal and state jurisdictional waters, including wetlands, and on state jurisdictional streams and lakes. Specific biological goals and objectives for wetlands and streams have been developed, and the conservation strategy includes a range of specific measures to avoid and mitigate for impacts on these resources. Specific measures included in the proposed action include the following.

- **CM1: Protect Natural Communities.** This conservation measure provides the mechanism and guidance for the acquisition of lands and the establishment of the BRCP conservation lands system that will meet the natural community and covered species habitat protection biological objectives presented in Section 5.3 of the BRCP. This includes the protection of wetlands and waters of the United States.
- **CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans.** The BRCP Implementing Entity will restore 579 acres of riparian forest habitat, 34 acres of riparian willow scrub, 121 acres of emergent wetland, and 307 acres of vernal pool and other seasonal wetlands in the quantities indicated for each of the CAZs. Restoration will be conducted on BRCP

conservation lands, be designed to support habitat for covered species, and be dominated by native plant species that are typical of these riparian and wetland habitat types in the Plan Area.

- **CM5: Enhance Protected Natural Communities for Covered Species.** The BRCP Implementing Entity will prepare and implement management plans for protected natural communities and covered species habitats supported by those communities. The communities include riparian natural community, wetland natural community, and aquatic natural community.
- **AMM1: Conduct Planning Surveys.** Project proponents are required to delineate CWA Section 404 jurisdictional wetlands and other waters of the United States within project sites. Project proponents are required to conduct delineate Section 1602 Fish and Game Code jurisdictional riparian habitat within project sites. All covered species planning surveys will be conducted during the specified time period indicated by the BRCP. All planning surveys will be conducted by qualified and permitted (as necessary) biologists using the methods indicated in the BRCP or alternative methods approved by the BRCP Implementing Entity, USFWS, and CDFW.
- **AMM6: Establish Permanent Habitat Buffers along Stream and Riparian Corridors.** Residential, commercial, public, and industrial facility projects will be designed to include a minimum 100-foot permanent habitat buffer zone (set-back easement) from the top of bank along both sides of all natural perennial stream corridors as defined in the BRCP GIS database and a minimum 25-foot permanent habitat buffer zone from the edge of existing or restored riparian forest and scrub if riparian forest/scrub is wider than 75 feet from the top of the stream bank. For major water conveyance channels that support woody riparian vegetation a minimum 25-foot permanent habitat buffer zone will be established from the edge of the existing or restored riparian forest and scrub. Permanent habitat buffers apply to stream and riparian habitat areas that remain following construction of permanent development projects (note the allowable level of impacts is identified in the BRCP).

These measures, implemented in concert, would provide adequate protection for existing wetlands, as well as restore and create additional wetlands in the Plan Area.

Executive Order 12898—Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their actions on minorities and low-income populations and communities. Potential impacts related to environmental justice are discussed in Chapter 14, *Population and Housing, Socioeconomics, and Environmental Justice*.

16.7 References

Butte County. 2010. *Butte County General Plan 2030 Final Environmental Impact Report*. August 30. Oroville, CA. Available: <<http://www.buttegeneralplan.net/>>. Accessed: February 25, 2013. City of Biggs. 2013. *Biggs General Plan Draft Environmental Impact Report*. October. Prepared for the City of Biggs by PMC, Chico, CA.

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Chapter 17

Consultations and Public Outreach

This chapter provides an overview of the agency consultation and other regulatory requirements and the scoping and public involvement process for the proposed action.

17.1 Consultation and Requirements

17.1.1 Federal Endangered Species Act

Threatened and endangered species are listed under the provisions of Section 4 of ESA; prohibitions in Section 9 provide for substantial protection of these listed species. Through Section 7 and Section 10 processes, USFWS and NMFS ensure that activities undertaken by federal agencies and nonfederal entities do not result in jeopardy of listed species or adverse modification of critical habitat.

If federally listed species may be affected, the federal lead agency must informally consult with USFWS and/or NMFS to assess the consequences of its actions and to determine whether formal consultation is warranted. USFWS is proposing to issue a Section 10 ITP, which is a federal action that triggers Section 7 consultation requirements under the proposed action. As the federal action agency for the proposed action and permit, USFWS will consult internally pursuant to Section 7. USFWS will initiate internal consultation following the submission of the Section 10 permit application package by the Habitat Conservation Plan Association. If USFWS concludes that the proposed action is not likely to adversely affect a listed species, then no formal consultation will be conducted and no BO will be prepared. If the proposed action is likely to result in adverse effects on a listed species, then USFWS will prepare a biological opinion describing how the proposed action will affect the listed species. The USFWS's opinion will be either a *jeopardy opinion* or a *no-jeopardy opinion*. A jeopardy opinion concludes that the proposed action would jeopardize the continued existence of a federally listed species or would adversely modify designated critical habitat. Under this finding, the BO must suggest "reasonable and prudent alternatives" that would avoid jeopardy. If the USFWS issues a no-jeopardy opinion, this opinion may include "reasonable and prudent measures" to minimize adverse effects on listed species and an "incidental take statement" that specifies the allowable amount of take that may occur as a result of the proposed action.

17.1.2 National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to inventory historic properties and evaluate the eligibility of those properties for listing in the NRHP. The potential effects of the proposed action or action alternatives on cultural resources, including properties listed or eligible for the NRHP, and any necessary measures to avoid or reduce impacts on these resources, are described in Chapter 7, *Cultural Resources*. As presented in that chapter, the proposed action is not expected to result in any significant effects on cultural resources. And a cultural resources management plan would be developed as a basis for establishing a programmatic memorandum of agreement between USACE, SHPO, and ACHP for compliance with the requirements of the NHPA Section 106 process such that no NRHP-listed eligible or potentially eligible resources would be affected.

17.1.3 Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) of 1981 requires federal agencies to consider project alternatives that minimize or avoid adverse impacts on important farmland. As described in Chapter 4, *Agricultural and Forestry Resources*, the FPPA does not apply to federal permitting (7 CFR § 658.2[a][1][i]).

17.1.4 Clean Air Act

Section 176(c) of the Clean Air Act requires federal agencies to ensure that their actions are consistent with the Clean Air Act and with federally enforceable state implementation plans (SIPs) (air quality management plans). The conformity review process is intended to ensure that federal agency actions will not cause or contribute to new violations of any federal ambient air quality standards; will not increase the frequency or severity of any existing violations of federal ambient air quality standards; and will not delay the timely attainment of federal ambient air quality standards.

The proposed action is within an area designated by EPA as a partial non-attainment area for ozone and PM 2.5 and a maintenance area for CO. Consequently, to fulfill general conformity requirements, a General Conformity evaluation would be required to identify whether the total ozone, CO, and PM2.5 emissions for the action alternatives are subject to the General Conformity rule.

As described in Chapter 5, *Air Quality and Greenhouse Gases*, a conformity analysis was performed, and emissions were evaluated to determine if they would exceed the General Conformity *de minimis* thresholds. A conformity determination is not required, as it was concluded emissions would likely not exceed the *de minimis* thresholds.

17.1.5 Migratory Bird Treaty Act

Migratory birds are protected by USFWS under the provisions of the MBTA of 1916 as amended (16 U.S.C. Chapter 7, 703-712) which governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take. The Secretary of the Interior, in adopting regulations, is to consider such factors as distribution and abundance to ensure that take is compatible with the protection of the species. This guidance would be utilized in informal consultation on any such activities within the Plan Area for the proposed action.

17.2 Lead and Cooperating Agencies and Stakeholders

The BRCP EIS/EIR was prepared under the combined efforts of the following partners.

- USFWS
- NMFS

- USACE
- BCAG

BCAG is the CEQA lead agency. USFWS is the federal lead agency pursuant to NEPA. CDFW is a CEQA responsible and trustee agency. USACE and NMFS are cooperating agencies pursuant to NEPA. To comply with both CEQA and NEPA, these agencies combined efforts to notify stakeholders, the public, agencies, and tribes of the proposed permits and intent to prepare a joint EIS/EIR.

The BRCP was prepared under the combined efforts of the following partners (collectively known as the Permit Applicants).

- BCAG
- Butte County
- The Cities of Oroville, Chico, Biggs, and Gridley
- Western Canal Water District
- Biggs–West Gridley Water District
- Butte Water District
- Richvale Irrigation District
- Caltrans District 3

An organizational structure that allowed for input from stakeholders and the general public was created to develop the BRCP. This organizational structure consisted of a steering committee composed of the Permit Applicants and a stakeholder committee composed of parties with a broad range of interests in the Plan Area. These interests include biological resources, agriculture, land use and development, education, transportation, resource management, and water delivery. USFWS, NMFS, and CDFW provided input throughout the development of the BRCP and participated in steering committee and stakeholder committee meetings as well as in separate meetings with BCAG and the consultant team that helped draft the BRCP. Public involvement was encouraged through open stakeholder committee meetings, public workshops, newsletters, and a regularly updated website.

The BRCP was developed in coordination with the development of county and city general plans in the Plan Area, allowing for feedback between the BRCP and general plan processes. This feedback process identified opportunities and constraints and allowed for improvements in the general plans regarding the avoidance and minimization of impacts on biological resources and the development of open space and conservation elements that dovetail with the BRCP.

17.3 NEPA/CEQA Scoping

The NOI for the purposes of NEPA and the NOP for the purposes of CEQA served to inform the public of scoping meetings and the public comment period regarding the scope of the EIS/EIR (Appendix A). Additional details regarding meeting locations and times and the public comment period were provided in the NOI/NOP.

In compliance with the requirements set forth in CEQA, BCAG prepared an NOP. The NOP contained a brief description of the proposed action, the anticipated timeframe, probable environmental

effects, the date, time, and place of the public scoping meeting, and contact information. The NOP solicited participation in determining the scope and content of the environmental content of the EIR. On December 14, 2012, the NOP was sent to Responsible and Trustee Agencies and involved federal agencies, to the State Clearinghouse, and parties previously requesting notice in writing. The comment period on the NOP was December 14, 2012, to January 30, 2013.

In compliance with the requirements set forth in NEPA, USFWS prepared an NOI describing its intent to prepare an EIS, the proposed action, the possible alternatives, and relevant scoping meeting and contact information. The NOI was posted in the Federal Register, the United States Government's official noticing and reporting publication, on December 14, 2012. The official comment period for the NOI was December 14, 2012, to January 28, 2013.

17.3.1 Notifications, Publicity, and Scoping Meetings

Legal notices of the NOP were run in the Gridley Herald, Chico Enterprise, and Oroville Mercury on Friday, December 14, 2012. The NOI/NOP and information about scoping meetings were sent via mail to BCAG's BRCP distribution list, posted on the BRCP website (www.buttehcp.com), and sent via email to USFWS' media contacts and BCAG's email distribution list. Publication of the NOI in the Federal Register constitutes public notice of that document. Additionally, the USFWS posted a media release on its website.

On January 6, Chicoer.com published a news article about the BRCP and the scoping meetings at: http://www.chicoer.com/ci_22320033/conservation-plan-would-alter-butte-county-environmental-permit?IADID=Search-www.chicoer.com-www.chicoer.com.

Two scoping meetings were held during the NOI/NOP public comment period. They were held on Wednesday, January 9, 2013, at the following locations and times:

Oroville

Wednesday, January 9, 2013
2:00 p.m. to 4:00 p.m.
Oroville City Council Chambers
1735 Montgomery Street
Oroville, CA 95965

Chico

Wednesday, January 9, 2013
6:00 p.m. to 8:00 p.m.
BCAG Conference Room
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928

Nine people in total attended the two meetings. Three people attended the meeting in Oroville and six attended the meeting in Chico. Two comments, summarized below, were received from stakeholders regarding the EIS/EIRs during the scoping period.

- Nitrogen deposition in the Plan Area could contribute to growth of invasive plant species.
- Compliance with CEQA should be ensured in terms of adherence to laws related to historic resources and notification of appropriate tribal governments.

The Office of Planning and Research sent a courtesy letter to reviewing agencies to encourage them to submit comments on the scope and content of the NOP in a timely manner.

Chapter 18 List of Preparers

Name	Contribution/Role
ICF International	
Shahira Ashkar	Cultural Resources Review
Russ Brown	Hydrology Review
Dave Buehler	Noise Review
Lindsay Christensen	Noise
Lesa Erecius	Hydrology
Alex Gole	GIS Analyst
Lawrence Goral	Managing Editor
Shannon Hatcher	Air Quality Review
Robin Hoffman	Cultural Resources
Julia Hooten	Public Services and Public Utilities
ICF Staff	Wildlife Resources
Jody Job	Publications Specialist
Kai Ling Kuo	Transportation
Margaret Lambright	Project Coordinator
Alexa La Plante	Hydrology
David Lemon	Cultural Resources
Doug Leslie	Wildlife Resources Review
Donna Maniscalco	Aquatic Resources
Cory Matsui	Air Quality/Climate Change
Steve Mikesell	Cultural Resources Review
Bill Mitchell	Aquatic Resources Review
Stephanie Monzon	Technical Editor
Rob Preston	Botanical Resources
Gregg Roy	Population, Housing, Socioeconomics, and Environmental Justice Review
Senh Saelee	Graphic Artist
Dan Schiff	Senior GIS Analyst
Jennifer Stock	Visual Resources Review
Ellen Unsworth	Geology
Nicole Williams	Assistant Project Manager Agriculture Population and Housing, Socioeconomics, and Environmental Justice Recreation, Open Space and Visual Resources
Sally Zeff	Project Manager
David Zippin	Project Director
The Planning Center/DC&E	
Eric Panzer	Land Use and Planning Consistency
Tanya Sundberg	Land Use and Planning Consistency

