



PUBLIC DRAFT
ENVIRONMENTAL IMPACT REPORT

FOR THE

2030 COLUSA COUNTY GENERAL PLAN UPDATE

SCH# 2011062052

NOVEMBER 2011

Prepared for:

County of Colusa
Department of Planning and Building
220 12th Street
Colusa, CA 95932

Prepared by:

De Novo Planning Group
4630 Brand Way
Sacramento, CA 95819
www.denovoplanning.com

D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



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DRAFT EIR

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Appendix A – Notice of Preparation/Initial Study and Comments Received Regarding the Notice of Preparation

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PURPOSE

The County of Colusa (County), as lead agency, determined that the 2030 General Plan project (2030 General Plan or project) is a "project" within the definition of the California Environmental Quality Act (CEQA), and requires the preparation of an Environmental Impact Report (EIR). This Draft EIR has been prepared to evaluate the environmental impacts associated with implementation of the project. This EIR is designed to fully inform decision-makers in the County, other responsible and trustee agencies, and the general public of the potential environmental consequences of approval and implementation of the 2030 General Plan. A detailed description of the proposed project, including the components and characteristics of the project, project objectives, and how the EIR will be used, is provided in Chapter 2.0, Project Description.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the project that are known to the County, raised during the Notice of Preparation (NOP) scoping process, or were raised during preparation of the Draft EIR. This Draft EIR addresses the potentially significant impacts associated with aesthetics, agricultural and timber resources, air quality, biological resources, cultural resources, geology/soils/minerals, greenhouse gases/climate change, hazards, hydrology/water quality, land use planning/population, noise, public services, transportation/circulation, utilities, and cumulative impacts. During the NOP process, comments were received from the California Emergency Management Agency, California Department of Transportation, California Public Utilities Commission, California Regional Water Quality Control Board – Central Valley Region, California Department of Conservation, Colusa Local Agency Formation Commission, and California Native American Heritage Commission. Comments received addressed hazards, transportation impacts, including "Complete Streets," safety associated with railroad crossings, water quality, conversion of agricultural lands, provision of public services, and cultural resources, including Native American resources. The comments are summarized in Chapter 1.0, Introduction, and are also provided in Appendix A.

ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require an EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the proposed project. The alternatives analyzed in this EIR include the following:

- Alternative 1: Reduced Land Use Intensity Alternative. Under Alternative 1, urban and industrial development under the 2030 General Plan Land Use Map would be focused more tightly around existing communities as shown on Figure 5-1. Approximately 3,026 acres of land designated Urban Residential, Urban Reserve Area, and Industrial would be changed to Agricultural General and Agricultural Transition designations. This alternative would result in less growth and is intended to reduce impacts associated with traffic, air quality, noise, and farmland conversion.

- **Alternative 2: Revised Land Use (Airport Area) Alternative.** Alternative 2 would revise the 2030 General Plan to avoid land use impacts and potential safety hazards associated with conflicts between the Colusa County Airport Comprehensive Land Use Plan and the uses allowed under the 2030 General Plan.
- **Alternative 3: No Project Alternative.** Under Alternative 3, the County would not adopt the 2030 General Plan. The 1989 General Plan would continue to be implemented and no changes to the General Plan, including the Land Use Map and Circulation Diagram, goals, policies, or actions would occur. Subsequent projects, such as amending the County Code and Zoning Ordinance, would not occur.

As summarized in Table ES-1 below, Alternative 1 (Reduced Land Use Intensity) is the environmentally superior alternative because it provides the greatest reduction of potential impacts in comparison to the other alternatives. Alternative 2 (Revised Land Use - Airport Area) is slightly better than the proposed project while Alternative 3 (No Project) is worse than the Project.

TABLE ES-1: COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT				
ENVIRONMENTAL ISSUE	PROPOSED PROJECT	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
Adverse Effects on Visual Character	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Conversion of Farmlands	3 - Same	2 - Better	3 - Comparable	2 - Better
Airport Hazards	3 - Same	2 - Better	1 - Best	2 - Better
Flooding	3 - Same	2 - Better	3 - Comparable	4 - Worse
Land Use Conflicts	3 - Same	2 - Better	1 - Best	4 - Worse
Traffic Noise	3 - Same	3 - Comparable	3 - Comparable	3 - Comparable
Circulation Impacts – Cities of Colusa and Williams	3 - Same	3 - Comparable	3 - Comparable	3 - Comparable
Circulation Impacts – Caltrans Facilities	3 - Same	3 - Comparable	3 - Comparable	3 - Comparable
Water Supply	3 - Same	3 - Comparable	3 - Comparable	4 - Worse
Wastewater Treatment	3 - Same	3 - Comparable	3 - Comparable	4 - Worse
Cumulative: Visual Character	3 - Same	1 - Best	3 - Comparable	2 - Better
Cumulative: Agricultural and Timber Resources	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Cumulative: Air Quality	3 - Same	2 - Better	3 - Comparable	4 - Worse
Cumulative: Biological Resources	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Cumulative: Noise	3 - Same	2 - Better	3 - Comparable	4 - Worse
Cumulative: Transportation	3 - Same	2 - Better	3 - Comparable	4 - Worse
Cumulative: Utilities	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Irreversible Effects	3 - Same	2 - Better	3 - Comparable	4 - Worse
SUMMARY	54 - Same	41 - Best	50 - Better	61 - Worse

SUMMARY OF IMPACTS AND MITIGATION MEASURES

In accordance with the CEQA Guidelines, this EIR focuses on the significant effects on the environment. The CEQA Guidelines defines a significant effect as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project. A less than significant effect is one in which there is no long or short-term significant adverse change in environmental conditions. Some impacts are reduced to a less than significant level with the implementation of mitigation measures and/or compliance with regulations. The definition of "beneficial" effect is not defined in the CEQA Guidelines, but for purposes of this EIR a beneficial effect is one in which an environmental condition is enhanced or improved.

The environmental impacts of the proposed project, the impact level of significance prior to mitigation, the proposed mitigation measures to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-2.

TABLE ES-2: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
AESTHETICS AND VISUAL RESOURCES			
Impact 3.1-1: General Plan Implementation could result in Substantial Adverse Effects on Visual Character, including Scenic Vistas or Scenic Resources	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.1-2: General Plan Implementation could result in the Creation of New Sources of Nighttime Lighting and Daytime Glare	LS	<i>None Required</i>	LS
AGRICULTURAL RESOURCES			
Impact 3.2-1: Conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.2-2: Conflict with Existing Farmlands, Agricultural Zoning, or Williamson Act Contracts	LS	<i>None Required</i>	LS
Impact 3.2-4: Result in the Loss or Conversion of Forest Land	LS	<i>None Required</i>	LS
AIR QUALITY			
Impact 3.3-1: Mobile Source Emissions	LS	<i>None Required</i>	LS
Impact 3.3-2: Stationary Source Emissions	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 3.3-3: Area Source Emissions	LS	<i>None Required</i>	LS
Impact 3.3-4: Construction Emissions	LS	<i>None Required</i>	LS
Impact 3.3-5: CO and PM Hot-spots	LS	<i>None Required</i>	LS
Impact 3.3-6: Air Toxics	LS	<i>None Required</i>	LS
Impact 3.3-7: Objectionable Odors	LS	<i>None Required</i>	LS
Impact 3.3-8: Asbestos Exposure	LS	<i>None Required</i>	LS
BIOLOGICAL RESOURCES			
Impact 3.4-1: General Plan Implementation Could Result in Direct or Indirect Effects on Candidate, Sensitive, or Special-Status Species including their Habitat or Movement Corridors	LS	<i>None Required</i>	LS
Impact 3.4-2: General Plan Implementation Could Result in Adverse Effects on Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, Regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service, or on Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act through Direct Removal, Filling, Hydrological Interruption, or Other Means	LS	<i>None Required</i>	LS
Impact 3.4-3: General Plan Implementation may Interference with the Movement of Native Resident or Migratory Fish or Wildlife Species	LS	<i>None Required</i>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
or with Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites			
Impact 3.4-5: Conflicts with an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, Recovery Plan, Oak Woodlands Plan, or Local Policies or Ordinances Protecting Biological Resources	LS	None Required	LS
CULTURAL RESOURCES			
Impact 3.5-1: Substantial Adverse Change in the Significance of a Historical or Archaeological Resource	LS	None Required	LS
Impact 3.5-2: Disturbance of Human Remains	LS	None Required	LS
Impact 3.5-3: Damage to or the Destruction of Paleontological Resources	LS	None Required	LS
GEOLOGY, SOILS, AND MINERALS			
Impact 3.6.1: Potential to expose people or structures to potential adverse effects involving rupture of a fault, strong seismic ground shaking, or seismic-related ground failure	LS	None Required	LS
Impact 3.6.2: Potential to expose people or structures to potential adverse effects involving ground instability or failure	LS	None Required	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 3.6.3: Potential to result in substantial soil erosion or the loss of topsoil	LS	<i>None Required</i>	LS
Impact 3.6.4: Potential to have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water	LS	<i>None Required</i>	LS
Impact 3.6.5: Result in the loss of availability of a locally important mineral resource or known mineral resource that would be of value to the region and the residents of the state	LS	<i>None Required</i>	LS
GREENHOUSE GASES AND CLIMATE CHANGE			
Impact 3.7.1: General Plan Implementation Would Not Result in Conflicts with AB 32 or Conflict with the Policy Guidance Provided by CAPCOA	LS	<i>None Required</i>	LS
HAZARDS			
Impact 3.8-1: Potential hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials	LS	<i>None Required</i>	LS
Impact 3.8-2: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or	LS	<i>None Required</i>	LS

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LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

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<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
proposed school			
Impact 3.8-3: Impact from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5	LS	<i>None Required</i>	LS
Impact 3.8-4: Impact to people residing or working within two miles of a public airport, public use airport, or private airstrip	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.8-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	LS	<i>None Required</i>	LS
Impact 3.8-6: Expose people or structures to a risk of loss, injury or death from wildland fires	LS	<i>None Required</i>	LS
HYDROLOGY AND WATER QUALITY			
Impact 3.9-1: General Plan Implementation Could Result in a Violation of Water Quality Standards or Waste Discharge Requirements	LS	<i>None Required</i>	LS
Impact 3.9.2: General Plan Implementation Could Result in the Depletion of Groundwater Supplies or Interfere Substantially with Groundwater Recharge	LS	<i>None Required</i>	LS
Impact 3.9-3: General Plan Implementation Could Alter the Existing Drainage Pattern in a Manner which Would Result in Substantial	LS	<i>None Required</i>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

B – beneficial impact

SU – significant and unavoidable

<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Erosion, Siltation, Flooding, or Polluted Runoff			
Impact 3.9.4 General Plan Implementation Could Otherwise Substantially Degrade Water Quality	LS	<i>None Required</i>	LS
Impact 3.9.5 General Plan Implementation Could Place Housing and Structures 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	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.9-6: General Plan Implementation Could Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding as a Result of the Failure of a Levee or Dam, Seiche, Tsunami, or Mudflow	LS	<i>None Required</i>	LS
LAND USE AND POPULATION			
Impact 3.10-1: Physical Division of an Established Community	LS	<i>None Required</i>	LS
Impact 3.10-2: Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.10-3: Conflicts with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan	LS	<i>None Required</i>	LS
Impact 3.10-4: Induce Substantial Population	LS	<i>None Required</i>	LS

CC – cumulatively considerable

LCC – less than cumulatively considerable

LS – less than significant

PS – potentially significant

SU – significant and unavoidable

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Growth in an Area			
Impact 3.10-5: Displace Substantial Numbers of People or Existing Housing, Necessitating the Construction of Replacement Housing Elsewhere	LS	None Required	LS
NOISE			
Impact 3.11-1: Traffic Noise Sources	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.11-2: Stationary Noise Sources	LS	None Required	LS
Impact 3.11-3: Airport Noise	LS	None Required	LS
Impact 3.11-4: Construction Noise	LS	None Required	LS
PUBLIC SERVICES AND RECREATION			
Impact 3.12-1: Adverse Physical Impacts on the Environment Associated with Governmental Facilities and the Provision of Public Services	LS	None Required	LS
Impact 3.12-2: Adverse Physical Impacts Associated with the Deterioration of Existing Parks and Recreation Facilities	LS	None Required	LS
Impact 3.12-3: Adverse Physical Impacts on the Environment Associated with Construction of New Parks and Recreation	LS	None Required	LS

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<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Facilities			
TRANSPORTATION AND CIRCULATION			
Impact 3.13-1: Implementation of the proposed General Plan would result in acceptable traffic operation on County roadways	LS	<i>None Required</i>	LS
Impact 3.13-2: Implementation of the Draft General Plan would contribute vehicle trips to roadway project to operate worse than the LOS thresholds of the incorporated Cities of Colusa and Williams	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.13-3: Implementation of the Draft General Plan would Result in Increased Traffic on State Highways and Facilities	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.8-4: Potential Hazards Due to Design Features of Incompatible Uses	LS	<i>None Required</i>	LS
Impact 3.8-5: Increased Demand for Public Transit Services would Not Conflict with Applicable Plans or Exceed Capacity	LS	<i>None Required</i>	LS
Impact 3.8-6: Increased Demand for Pedestrian and Bicycle Infrastructure would Not Exceed Capacity or Disrupt Existing or Planned Facilities	LS	<i>None Required</i>	LS
Impact 3.8-7: Increased Demand for Aviation Facilities and Services	LS	<i>None Required</i>	LS

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ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
Impact 3.8-8: Emergency Access	LS	None Required	LS
UTILITIES			
Impact 3.14-1: Increased Demand for Water Supply	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.14-2: The project would generate wastewater that would be conveyed and treated at an existing wastewater treatment plant	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 3.14-3: The project would be served by a landfill for solid waste disposal needs and will require compliance with various laws and regulations	LS	None Required	LS
OTHER CEQA-REQUIRED TOPICS			
Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 4.2: Cumulative Impact on Agricultural and Timber Resources	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 4.3: Cumulative Impact on the Region's Air Quality	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 4.4: Cumulative Loss of Biological Resources Including Habitats and Special Status Species	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU

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<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 4.5: Cumulative Impacts on Known and Undiscovered Cultural Resources	LCC	<i>None Required</i>	LS
Impact 4.6: Cumulative Impacts related to Geology and Soils	LCC	<i>None Required</i>	LS
Impact 4.7: Increased Transportation Greenhouse Gas Emissions May Contribute to Climate Change	LCC	<i>None Required</i>	LS
Impact 4.8: Cumulative impacts from hazardous materials and human health risks	LCC	<i>None Required</i>	LS
Impact 4.9: Cumulative impacts from to Hydrology and Water Quality	LCC	<i>None Required</i>	LS
Impact 4.10: Cumulative Impact on Communities and Local Land Uses	LCC	<i>None Required</i>	LS
Impact 4.11: Cumulative Exposure of Noise-Sensitive Land Uses to Noise in Excess of Normally Acceptable Noise Levels or to Substantial Increases in Noise	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 4.12: Cumulative Impact on Public Services and Recreation	LCC	<i>None Required</i>	LS
Impact 4.13: Cumulative Impact on the Transportation Network	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU
Impact 4.14: Cumulative Impact on Utilities	CC	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU

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<i>ENVIRONMENTAL IMPACT</i>	<i>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</i>	<i>MITIGATION MEASURE</i>	<i>RESULTING LEVEL OF SIGNIFICANCE</i>
Impact 4.15: Irreversible Effects	PS	<i>Mitigated to the greatest extent feasible through General Plan Policies and Actions. No additional feasible mitigation is available.</i>	SU

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1.1 INTRODUCTION

In the summer of 2009, Colusa County began a two-year process to update the County's 1989 General Plan. State law requires every city and county in California to prepare and maintain a planning document called a general plan. A general plan is a "constitution" or "blueprint" for the future physical development of a county or city. As part of the Colusa County General Plan Update process, a General Plan Background Report was prepared to establish a baseline of existing conditions in the county. Additionally, an Issues and Opportunities Report was prepared to identify the challenges facing the community and to provide an opportunity for citizens and policymakers to come together in a process of developing a common vision for the future. The General Plan update includes a framework of goals, objectives, policies, and actions that will guide the community toward their common vision. The General Plan is supported with a variety of maps including a Land Use Map and Circulation Diagram.

COLUSA COUNTY GENERAL PLAN UPDATE

General Plan

The Colusa County 2030 General Plan (General Plan, General Plan Update, or proposed project) is the overarching policy document that guides land use, housing, transportation, infrastructure, community design, and other policy decisions throughout the unincorporated areas of Colusa County. The General Plan includes the seven elements mandated by State law, to the extent that they are relevant locally: Circulation, Conservation, Housing, Land Use, Noise, Open Space, and Safety Elements. The County may also address other topics of interest; this General Plan includes Agriculture, Community Character, Economic Development, and Public Services and Facilities Elements. The General Plan sets out the goals, policies, and programs in each of these areas and serves as a policy guide for how the County will make key planning decisions in the future, and how the County will interact with the Cities of Colusa and Williams, and other local, regional, State, and Federal agencies, and surrounding counties.

The General Plan contains the goals and policies that will guide future decisions within the County. It also identifies implementation programs that will ensure the goals and policies in the General Plan are carried out. As part of the Colusa County General Plan Update, the County and the consultant team prepared several support documents that serve as the building blocks for the Policy Document and analyze the environmental impacts associated with implementing the General Plan.

The following paragraphs describe a summary of the key component documents that are the building blocks of the Colusa County General Plan Update.

Background Report

The Background Report takes a "snapshot" of Colusa County's current (2009) trends and conditions. It provides a detailed description of a wide range of topics within the county, such as

demographic and economic conditions, land use, public facilities, and environmental resources. The Background Report provides decision-makers, the public, and local agencies with context for making policy decisions. The Background Report also serves as the environmental setting and description contained within this Draft EIR.

Issues and Opportunities Report

Based on public input from stakeholder interviews, community visioning workshops, focus group meetings, direction from County staff, and direction from the Planning Commission and Board of Supervisors, this Issues and Opportunities report identified key issues and opportunities to be addressed in the General Plan and identifies the various Land Use Alternative Maps that have been developed. The Issues and Opportunities Report provided the Board of Supervisors with tools and information in order for them to select the preferred Land Use Map Alternative, and to provide direction to the General Plan update team and the Steering Committee for the development of the General Plan Policy Document.

Environmental Impact Report

An EIR responds to the requirements of the California Environmental Quality Act (CEQA) as set forth in Sections 15126, 15175, and 15176 of the CEQA Guidelines. The Planning Commission and Board of Supervisors will use the EIR during the General Plan Update process in order to understand the potential environmental implications associated with implementing the General Plan. This EIR was prepared concurrently with the General Plan policy document in order to facilitate the development of a General Plan that is largely self-mitigating. In other words, as environmental impacts associated with the new General Plan, including the Land Use Map, are identified; policies, programs and measures may be incorporated into the General Plan policy document in order to reduce or avoid potential environmental impacts.

1.2 PURPOSE OF THE EIR

The County of Colusa, as lead agency, determined that the Colusa County 2030 General Plan is a "project" within the definition of the California Environmental Quality Act (CEQA). CEQA requires the preparation of an environmental impact report (EIR) prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

This Draft EIR has been prepared according to CEQA requirements to evaluate the potential environmental impacts associated with the implementation of the General Plan for the unincorporated portion of Colusa County. A copy of the Public Draft General Plan is located on the accompanying CD at the end of this Draft EIR. The Draft EIR also discusses alternatives to the General Plan, and proposes mitigation measures that will offset, minimize, or otherwise avoid significant environmental impacts. This Draft EIR has been prepared in accordance with CEQA, California Resources Code Section 21000 et seq.; the Guidelines for the California Environmental Quality Act (California Code of Regulations, Title 14, Chapter 3); and the rules, regulations, and procedures for implementing CEQA as adopted by the County of Colusa.

An EIR must disclose the expected direct and indirect environmental impacts associated with a project, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

1.3 TYPE OF EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Program EIR pursuant to CEQA Guidelines Section 15168. Section 15168 states:

A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

- 1) Geographically,
- 2) As logical parts in the chain of contemplated actions,
- 3) In connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program, or
- 4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The program-level analysis considers the broad environmental effects of the proposed project. This EIR will be used to evaluate subsequent projects and activities under the proposed project. This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering approval of the proposed project, but not to the level of detail to consider approval of subsequent development projects that may occur after adoption of the General Plan.

Additional environmental review under CEQA may be required for subsequent projects and would be generally based on the subsequent project's consistency with the proposed project and the analysis in this EIR, as required under CEQA. It may be determined that some future projects or infrastructure improvements may be exempt from environmental review. When individual subsequent projects or activities under the proposed project are proposed, the lead agency that would approve and/or implement the individual project will examine the projects or activities to determine whether their effects were adequately analyzed in the program EIR (CEQA Guidelines Section 15168). If the projects or activities would have no effects beyond those disclosed in this EIR, no further CEQA compliance would be required.

1.4 INTENDED USES OF THE EIR

The County of Colusa, as the lead agency, has prepared this EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts

resulting from adoption of the proposed project and subsequent implementation of projects consistent with the proposed project. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all subsequent planning and permitting actions associated with the proposed project. Subsequent actions that may be associated with the proposed project are identified in Chapter 2.0, Project Description. This EIR may also be used by other agencies within Colusa County, including the Colusa Local Agency Formation Commission (LAFCO), which may use this EIR during the preparation of environmental documents related to Municipal Service Reviews and Spheres of Influence throughout Colusa County.

1.5 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term “Responsible Agency” includes all public agencies other than the Lead Agency that have discretionary approval power over the project or an aspect of the project (CEQA Guidelines Section 15381). For the purpose of CEQA, a “Trustee” agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). While no Responsible Agencies or Trustee Agencies are responsible for approvals associated with adoption of the Colusa County General Plan, implementation of future projects within Colusa County may require permits and approvals from Trustee and Responsible Agencies, which may include the following:

- California Department of Fish and Game (CDFG)
- California Department of Transportation (Caltrans)
- Central Valley Water Quality Control Board (RWQCB)
- U.S. Army Corps of Engineers (ACOE)
- U.S. Fish and Wildlife Service (USFWS)
- Colusa Local Agency Formation Commission (LAFCO)
- Arbuckle Public Utility District
- Maxwell Public Utility District
- Princeton Water Works District

1.6 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION

The County of Colusa circulated a Notice of Preparation (NOP) of an EIR for the proposed project on June 20, 2011 to trustee and responsible agencies, the State Clearinghouse, and the public. A scoping meeting was held on June 28, 2011 with the County of Colusa Board of Supervisors. No public or agency comments on the NOP were presented or submitted during the scoping meeting. However, during the 30-day public review period for the NOP, which ended on July 30, 2011, a total of seven written comments from state and local agencies were received. A summary of these comments is provided later in this chapter. The NOP and all comments received on the NOP are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of the project's direct and indirect impacts on the environment, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the County of Colusa will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the County of Colusa will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted both in written form and oral form. All comments or questions regarding the Draft EIR should be addressed to:

Stephen Hackney, Director of Planning and Building
County of Colusa
220 12th Street
Colusa, CA, 95932

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments during such review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The County of Colusa will review and consider the Final EIR. If the County finds that the Final EIR is "adequate and complete," the Board of Supervisors may certify the Final EIR in accordance with

CEQA. As set forth by CEQA Guidelines Section 15151, the standards of adequacy require an EIR to provide a sufficient degree of analysis to allow decisions to be made regarding the proposed project that intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the Board of Supervisors may take action to approve, revise, or reject the project. A decision to approve the proposed project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program (MMRP) would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. The Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.7 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the County of Colusa, and responses to the Notice of Preparation (NOP).

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

The Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the proposed project, the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, identifies the scope and organization of the Draft EIR, and summarizes comments received on the NOP.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed project, including the location, intended objectives, background information, the physical and technical characteristics, including

the decisions subject to CEQA, subsequent projects and activities, and a list of related agency action requirements.

CHAPTER 3.0 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact.

The following environmental topics are addressed in this section:

- Aesthetics and Visual Resources
- Agricultural and Timber Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Population
- Noise and Vibration
- Public Services and Recreation
- Transportation and Circulation
- Utilities and Service Systems

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 - ALTERNATIVES TO THE PROJECT

Chapter 5.0 provides a comparative analysis between the merits of the proposed project and the selected alternatives. State CEQA Guidelines Section 15126.6 requires that an EIR describe a range

1.0 INTRODUCTION

of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the project.

CHAPTER 6 - REPORT PREPARERS

Chapter 6.0 lists all authors and agencies that assisted in the preparation of the Draft EIR, by name, title, and company or agency affiliation.

CHAPTER 7 - REFERENCES

Chapter 7.0 lists the references used in the development of this Draft EIR.

APPENDICES

This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as technical material prepared to support the analysis.

1.8 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The County received seven comment letters on the NOP. A copy of each letter is provided in the appendix of this Draft EIR and the comments are summarized below.

- California Emergency Management Agency (Cal EMA): Cal EMA indicated that the County should examine the sections of state planning law that involve environmental hazards faced in the County that should be addressed in the General Plan. The letter included attachments related to General Plan requirements for addressing hazards.
- California Department of Transportation (Caltrans): Caltrans requested that the Draft EIR address potential impacts to the State Highway System within Colusa County, including Interstate 5 and State Routes 20, 45 and 16. Caltrans suggested that the County consider including “Smart Growth” goals and “Complete Streets” policies in the General Plan, where appropriate.
- California Public Utilities Commission (CPUC): The CPUC requested that the Draft EIR evaluate traffic safety issues near at-grade railroad crossings, and provided general measures that may improve safety near railroad crossings.
- California Regional Water Quality Control Board, Central Valley Region (CVRWQCB): The CVRWQCB provided information regarding permits and requirements related to construction stormwater quality, storm sewer systems, industrial stormwater discharges, compliance with the Clean Water Act, and other waste discharge requirements.
- California Department of Conservation (DOC): The DOC requested that the Draft EIR include a description of agricultural lands and practices within Colusa County, including lands under Williamson Act Contract, and lands designated as Prime Farmland, Unique Farmland and Farmland of Statewide Importance. The DOC requested an analysis of the

project's potential impacts to agricultural lands, including termination of Williamson Act Contracts and the conversion of agricultural lands to non-agricultural uses. The DOC letter included recommendations for the development of a mitigation program to offset potential losses of agricultural lands.

- Colusa Local Agency Formation Commission (LAFCO): LAFCO requested that the Draft EIR include an analysis of potential impacts to agricultural lands, as well as potential impacts to established service providers (such as water and wastewater providers).
- California Native American Heritage Commission (NAHC): The NAHC recommends that the Draft EIR include a records search to identify known cultural resources within the project area, recommends coordination with potentially affected Native American groups, and included a summary of mitigation approaches that should be considered by the County in order to avoid or lessen potential impacts to cultural or historical resources.

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2.1 BACKGROUND AND OVERVIEW

STATE GENERAL PLAN LAW

California Government Code Section 65300 et seq. requires all counties and cities in the State to prepare and maintain a general plan for the long-term growth, development, and management of the land within the jurisdiction's planning boundaries. The general plan acts as a "constitution" for development, and is the County's lead legal document in relation to growth, development, and resource management issues. Development regulations (e.g., zoning and subdivision standards) are required by law to be consistent with the General Plan.

General plans must address a broad range of topics, including, at a minimum, the following mandatory elements: land use, circulation, housing, conservation, open space, noise, and safety. At the discretion of each jurisdiction, the General Plan may combine these elements and may add optional elements relevant to the physical features the jurisdiction.

The California Government Code also requires that a General Plan be comprehensive, internally consistent, and plan for the long term. The General Plan should be clearly written, easy to administer, and available to all those concerned with the community's development.

State planning and zoning law (California Government Code Section 65000 et seq.) establishes that zoning ordinances¹ are required to be consistent with the general plan and any applicable specific plans, area plans, master plans, and other related planning documents. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure consistency between the revised land use designations in the general plan (if any) and the permitted uses or development standards of the zoning ordinance (Gov. Code Section 65860, subd. [c]).

GENERAL PLAN UPDATE PROCESS

The process to update the existing Colusa County General Plan began in September 2009 and is scheduled to be completed with the adoption of the 2030 General Plan by the Board of Supervisors in early 2012. The Colusa County 2030 General Plan (General Plan or proposed project) was developed with extensive community input and reflects the community's vision for Colusa County. A summary of the community outreach and public participation process is provided below.

Visioning Workshops

Between September and November 2009, the General Plan Update team held five public visioning workshops to help kick-off the General Plan Update process. A diverse group of County residents and stakeholders attended workshops in Stonyford, Maxwell, Arbuckle, Colusa and Williams. The workshops provided an opportunity for the public to offer their thoughts on what they like and don't like about their communities and the County, and what important issues should be addressed in preparing the General Plan Update.

Each workshop included a presentation by the consultant team that explained the role of the General Plan, an overview of the General Plan Update process, and an opportunity for the workshop participants to ask questions and seek clarification on the process and the role of the community. Workshop participants were asked to complete three exercises in order to provide information to the General Plan Update team. These exercises included mapping activities, visual preferences surveys, questionnaires, and other activities to solicit community feedback on key planning issues.

Stakeholder Interviews

Between September 2009 and March 2010, the General Plan Consultants conducted interviews and outreach efforts with several key stakeholders and organizations throughout the County. These interviews and outreach efforts helped the General Plan consultants gain perspectives and insights into the issues to be addressed by the General Plan Update. Key stakeholders contacted during these efforts include, but are not limited to:

- Maxwell Public Utilities District
- Arbuckle Public Utilities District
- City of Williams
- City of Colusa
- Colusa County Sheriff's Department
- Colusa County Assessor's Office
- Colusa County Department of Public Works
- Colusa Local Agency Formation Commission (LAFCO)
- Colusa County Library
- Colusa Rotary Club
- Colusa County Agricultural Commissioner
- Colusa County Department of Behavioral Health
- Colusa County Department of Health and Human Services
- Colusa County Department of Planning and Building
- Colusa County Office of Education
- Housing Authority (contracted through Glenn Co. HRA)
- Arbuckle Family Action Center
- Williams Migrant Camp
- Senior Information Center
- Colusa First 5
- Colusa County One-Stop Center
- Colusa-Glenn-Trinity Community Action Partnership
- Colusa County Chamber of Commerce
- Princeton Joint Unified School District
- Colusa County Farm Bureau
- Arbuckle Family Health Center
- Maxwell Unified School District
- Pierce Joint Unified School District
- Colusa Unified School District
- Stony Creek Joint Unified School District

Land Use Map Change Request Forms

Between November 2009 and March 2010, property owners in Colusa County were given the opportunity to submit General Plan land use designation change requests for their parcels to the Planning Department. Changes in existing General Plan designations were requested for approximately 27 sites throughout the County. These requested changes were all considered by the General Plan Steering Committee, Planning Commission, and the Board of Supervisors during the development of the Draft 2030 General Plan Land Use Map.

General Plan Steering Committee

The Board of Supervisors appointed approximately 20 County residents and local agency representatives to the General Plan Steering Committee. The Steering Committee worked with staff and the consultant team to develop the goals, objectives, policies and action items to be included in the 2030 General Plan, and also worked to develop and refine the Draft General Plan Land Use Map. The Steering Committee met a total of eight times between September 2010 and February 2011.

Public Outreach

For all public workshops and meetings, the Colusa County Department of Planning and Building conducted extensive outreach, using a wide variety of methods and tools, to inform and encourage the community to participate in the General Plan update process. Meeting notices and General Plan newsletters were also translated into Spanish, in order to reach out to a broad spectrum of County residents. The following is a list of methods and tools used to inform the public of meetings, workshops, and the status of the General Plan update work efforts.

- **General Plan Website:** The County maintains a website (www.countyofcolusageneralplan.org) devoted to informing the public about, and encouraging participation in, the Colusa County 2030 General Plan update process. The website includes all public notices, all workshop materials, presentations given to the Planning Commission and Board of Supervisors, background materials, draft policy documents, and draft versions of the General Plan Land Use Map.
- **General Plan Newsletters:** Periodic newsletters were prepared in English and Spanish and disseminated to the public via email, the General Plan website, and posted in locations throughout the County. The newsletters provide information regarding the status of the work efforts, upcoming meetings and workshops, and opportunities for public participation.
- **Local Newspapers:** Public notices, meeting notices, press releases and public service announcements were published in the Colusa Sun Herald prior to each public meeting or workshop.
- **Email Database:** The County developed and maintained an email database of residents, businesses and organizations that expressed interest in the General Plan update. The email database was expanded throughout the General Plan update process. Emails were

sent prior to public meetings and workshops, and when background documents, newsletters, or other pertinent project information became available.

2.2 PROJECT LOCATION

REGIONAL SETTING

Colusa County encompasses approximately 1,156 square miles in north central California, of which 1,151 square miles are land and six square miles are water. The eastern part of the county is located in the Sacramento Valley, the western portion is in the Klamath/North Coast Range. See Figure 2-1 for the regional location of Colusa County.

Existing land uses in Colusa County are primarily agricultural. The land use pattern is typical of rural counties of the Sacramento Valley. A checkerboard of large acreage farms dominates the eastern half of the County, with land ownership and road alignments mostly following square mile section lines. The land is generally flat and is covered by fields of rice, orchards, and row crops. Views are expansive, framed only by the rolling foothills of the Coast Range on the west and jagged peaks of the Sutter Buttes on the east. As one moves west through the county, large farms give way to much larger cattle and sheep ranches, cultivated fields give way to arid rangeland, and the flat terrain transitions into rolling hills and upland valleys. Further west, the land becomes yet more rugged and wild, until finally reaching the summit of Snow Mountain in the wilderness area at 7,000 feet above the valley floor.

There are two incorporated cities in Colusa County: Colusa and Williams. The project area is the unincorporated portion of Colusa County, which includes the communities of Arbuckle, College City, Grimes, Maxwell, Princeton, Stonyford, and Century Ranch as well as the remaining rural areas. See Figure 2-2.

STUDY AREA

The study area for this General Plan EIR is all unincorporated areas of Colusa County. Areas within the Cities of Colusa and Williams are not included in this analysis, and are not subject to the policies within the General Plan. The Spheres of Influence for Colusa and Williams are within the jurisdictional boundaries of Colusa County, and these areas are included in the project's study area.

2.3 DESCRIPTION OF PROPOSED GENERAL PLAN PROJECT

The Colusa County 2030 General Plan is a blueprint for growth in Colusa County through 2030. The General Plan provides a framework for future growth in the unincorporated areas of the County in the form of goals and policies that are designed to facilitate planned growth in an orderly manner. Upon adoption, the 2030 General Plan will replace the County's existing General Plan, which was adopted in 1989.

The General Plan describes anticipated future growth over the long-term and is the subject of this Draft EIR, which provides technical background information for the General Plan. The General Plan

is meant to express the community's goals with respect to the human-made and natural environments and to set forth the policies and implementation measures needed to achieve those goals for the welfare of those who live, work, and do business in Colusa County.

The County updated the Housing Element for the 2007-2014 planning cycle separately from the rest of the General Plan update, and the full 2030 General Plan is drafted for consistency with the policies in the Housing Element, which was adopted in February 2011. Other elements contained in the 2030 General Plan are listed below. Specific goals, policies, and action items contained in each element are analyzed in the applicable topical section in this Draft EIR.

GENERAL PLAN ELEMENTS

The proposed General Plan update includes ten elements¹, each of which provides a set of goals, objectives, policies, and actions as described below:

- The **Agricultural Element** (optional element) establishes goals, objectives, policies, and actions designed to maintain and enhance the viability of agriculture in Colusa County. Policies address issues such as accommodating a range of agricultural uses and supporting operations, the conversion of farmland to non-agricultural uses, farmworker housing, and urban-agricultural land use conflicts.
- The **Circulation Element** correlates closely with the Land Use Element, and identifies the general locations and extent of existing and proposed major thoroughfares, transportation routes, and alternative transportation facilities necessary to support a multi-modal transportation system. This element is intended to facilitate mobility of people and goods throughout unincorporated Colusa County by a variety of transportation modes, including bicycle, pedestrian, air and rail
- The **Community Character Element** (optional element) addresses community form, community design, and community character for the County as a whole and individual communities within the County.
- The **Conservation Element** addresses the conservation, development, and use of natural resources, riparian environments, native plant and animal species, soils, mineral deposits, cultural/historical resources, air quality, and alternative energy. It also details plans and measures for preserving open space for natural resources and the managed production of resources.
- The **Economic Development Element** (optional element) Designed to support and enhance the County's economy, through programs through programs to create jobs and business opportunities, to help maintain the existing workforce, and to improve the business climate.

¹ The Housing Element was adopted by the County in February 2011 and underwent independent CEQA review (SCH# 2010092038).

- The **Land Use Element** designates the general distribution and intensity of residential, commercial, industrial, agricultural, open space, public/quasi-public, and other categories of public and private land uses. The element's primary focus is to guide growth within and around the existing urban centers in Colusa County and conserve agricultural, open space, and natural resource lands. The Land Use Element includes the Land Use Map, which identifies land use designations for each parcel in the unincorporated County.
- The **Noise Element** establishes standards and policies to protect the community from the harmful and annoying effects of exposure to excessive noise levels. This element includes strategies to reduce land use conflicts that may result in exposure to unacceptable noise levels.
- The **Open Space and Recreation Element** addresses the preservation of open space for the managed production of resources, conservation of natural resources, and public health and safety related to open space and recreational opportunities. This element also includes provisions for improved and unimproved parks and recreational facilities throughout the County.
- The **Public Services and Facilities Element** sets forth standards for public service and utility systems including water, wastewater, solid waste, schools, medical facilities, libraries, parks, recreation, and historic preservation.
- The **Safety Element** establishes policies and programs to protect the community from risk associated with geologic, flood, and fire hazards, as well as setting standards for emergency preparedness.
- The **Implementation Element** identifies all of the action items and associated timing for implementation by various County departments or agencies during the life of the General Plan.

Goals, Objectives, Policies and Actions

Each element of the Colusa County 2030 General Plan contains a series of goals, objectives, policies and action items. The goals, objectives, policies and action items provide guidance to the County on how to direct change, manage growth, and manage resources over the 20-year life of the General Plan. The following provides a description of each and explains the relationship of each:

- A **goal** is a description of the general desired result that the County seeks to create through the implementation of the 2030 General Plan.
- An **objective** further refines a goal and provides additional specificity on how a goal may be achieved by the General Plan. Each goal may have one or more objectives.
- A **policy** is a specific statement that guides decision-making as the County works to achieve its goals and objectives. Once adopted, policies represent statements of County regulations. The General Plan's policies set out the standards that will be used by County

staff, the Planning Commission, and Board of Supervisors in its review of land development projects, resource protection activities, infrastructure improvements, and other County actions. Policies are on-going and require no specific action on behalf of the County.

- An **action** is an implementation measure, procedure, technique or specific program to be undertaken by the County to help achieve a specified goal or implement an adopted policy. The County must take additional steps to implement each action item in the General Plan. An action item is something that can and will be completed.

General Plan Land Use Map

The General Plan Land Use Map identifies land use designations for each parcel within the unincorporated area of Colusa County. The 2030 General Plan Land Use Map is attached as Figure 2-2.

General Plan Land Use Designations

The Land Use Element of the 2030 General Plan defines various land use designations by their allowable uses, minimum parcel sizes, and maximum development densities. The following describes the proposed land use designations for the General Plan. Table 2-1 shows the total number of parcels and total acreages for each land use designation shown on the proposed Land Use Map.

Agriculture Transition

The Agriculture Transition (AT) designation identifies areas intended for long-term rural, agricultural use and can be used to provide a permanent boundary or land use buffer around communities, urban areas, and planned future urban or community development. This designation identifies areas where: 1) agricultural land has already been subdivided into small parcels (less than 40 acres) for ranchettes, part-time farms, and orchards and, 2) to identify areas that may be developed with small-scale agricultural uses, including low intensity agricultural commercial and agricultural industrial uses.

The Agriculture Transition designation may serve as a transition zone between urban areas and the large-scale farms and agricultural operations beyond. These lands are intended to remain in agricultural use for the long-term and are not intended for conversion to urban or rural residential uses. The minimum parcel size is 10 acres.

Agriculture General

The Agriculture General (AG) designation identifies areas to be retained for agriculture and/or uses that are complementary to existing or nearby agricultural uses. This designation includes lands under agricultural preservation and/or conservation contracts and easements; land having present or future potential for agricultural production, and contiguous or intermixed smaller parcels on which non-compatible uses could jeopardize the long-term agricultural use of nearby agricultural lands. Lands designated Agriculture General are planned to be preserved for agricultural uses and

the intent of the designation is to preserve such lands for existing and future agricultural use and protect these lands from the pressures of development. The minimum parcel size is 40 acres.

Agriculture Upland

The Agriculture Upland (AU) designation is used to identify agricultural areas suitable for cattle and sheep grazing, areas with undeveloped, uninhabited forests, chaparral and grasslands, and intermixed areas suitable for crop production. Soils range from very good soils to those that are less suitable for crop production, but are suitable for livestock and other agricultural activities. Land divisions for non-agricultural purposes are discouraged in these areas to prevent conflicts with ranching and to minimize exposure to natural hazards. The minimum parcel size is 80 acres.

Parks and Recreation

The Parks and Recreation (PR) designation identifies areas suitable for public and quasi-public recreational and tourist activities. Specific sites for community parks to serve future residential growth are not identified on the land use map, but ample room has been provided in future urban residential and urban reserve areas for such parks. The minimum parcel size is 0.5 acres.

Resource Conservation

The Resource Conservation (RC) designation identifies areas with significant natural resources that should be retained and managed in perpetuity. This designation includes rangelands under federal ownership, the National Wildlife Refuges, wild and scenic lands, and habitat, watershed, and natural resource lands requiring management and protection. Lands designated Resource Conservation are intended to ensure that resources are conserved and protected for existing and future generations through active or passive oversight and management of the resources. The minimum parcel size is 160 acres, or 40 acres if contiguous to an existing wildlife refuge.

Forest Lands

The Forest Lands (FL) designation identifies lands within the Mendocino National Forest. This designation includes publicly and privately owned lands. Forest Lands are appropriate for a range of recreational activities, as well as residential development at very low densities. Land divisions and low intensity development within the Forest Lands designation are acceptable, provided there is adequate access, fire protection, well capability, and septic capability. The minimum parcel size is 20 acres.

Designated Floodway

The Designated Floodway (DF) designation is applied to lands that have been designated as floodways by the State Reclamation Board. Areas between the Sacramento River and the levees are included, as well as the Colusa Bypass between the Sacramento River and Butte Creek. There is no minimum parcel size.

Commercial

The Commercial (C) designation identifies areas appropriate for the full range of commercial uses to meet the everyday needs of County residents and employees as well as visitors and tourists. This designation is applied to built-up commercial areas and to vacant areas intended for future

commercial development, including central business districts, highway commercial areas, hotels, offices, restaurants, shopping centers, and heavy commercial uses. Residential uses are allowed in downtown and community center areas when it can be demonstrated that such uses will be operated in conjunction with and incorporated into the overall site design for the commercial use; this does not allow traditional single-family subdivisions or apartment complexes. The minimum parcel size is 1 acre, or 6,000 square feet within a water and sewer district service area.

Mixed Use

The Mixed Use (MU) designation establishes areas appropriate for the planned integration of a combination of retail; office; residential; hotel; recreation; public facilities and/or other compatible use. Mixed Use areas allow for higher density and intensity development, redevelopment, or a broad spectrum of compatible land uses ranging from a single use to a cluster of uses. The Mixed Use designation encourages placing housing, jobs, services, and recreational land uses close together within a project site, or on different stories of the same building. This designation is placed primarily in the community centers, downtown districts, and in-fill areas to encourage economic investment and revitalization of these core areas through promoting community-serving retail, office, and residential opportunities in a dense, compact form with opportunities for people to access the project and other destinations through bicycle, pedestrian, and mass transit modes. The Mixed Use designation is applied to areas that are, or will be serviced by public water and sewer districts.

Projects in the Mixed Use designation should focus on compatibility between land uses, and the development potential of a given area compared to the existing and proposed mix of land uses and their development impacts. This designation is intended to protect and enhance the character of the area and to provide flexibility in design and use for contiguous parcels having multiple owners. The minimum parcel size is 6,000 square feet.

Industrial

The Industrial (I) designation identifies areas suitable for a wide range of industrial activities, ranging from light industrial to heavy manufacturing and processing uses. This designation is applied to lands with existing industrial uses, including industrial parks and agricultural support uses, and to lands suited for future industrial uses, where necessary services such as transportation systems (e.g., I-5, SR 20, SR 45 corridors) and utilities and services exist or can be efficiently provided, where disruption of proximate uses will be least, and where the potential for environmental disruption is minimal or can be adequately mitigated.

The second category includes planned industrial areas along the I-5 corridor and the Colusa Sphere of Influence. Such areas are served by rail, interstate or state highway and have high visibility. These areas are to be developed as master-planned industrial subdivisions, rather than planned in a piecemeal basis. The minimum parcel size is 1 acre, or 6,000 square feet within a water and sewer district service area.

Public/Semi-Public Services

The Public/Semi-Public Services (PS) designation identifies areas for public and quasi-public services and facilities that are necessary to maintain the health and well-being of County residents and businesses. This designation is typically applied to existing public uses since the exact locations of schools, utilities, governmental offices, etc. will be determined as each respective community develops. As lands are converted to urban uses, new sites for public/semi-public services would generally be provided within the land designated for Urban Residential uses. The minimum parcel size is 1 acre, or 6,000 square feet within a water and sewer district service area.

Rural Residential

The Rural Residential (RR) designation is intended for areas where land ownership and parcel patterns preclude the use of land for agriculture, but the land is not appropriate for urban uses and densities due to lack of public water and sewer service. The primary use of the rural residential designation is housing, with parcels usually large enough for backyard gardening, raising horses, or other small-scale agricultural activities that are not the primary use of the parcel. This designation accommodates semi-rural and rural living at average densities of one house per two to ten acres. This designation is used to preserve the attractive low-density character of the areas around or adjacent to established urban areas, such as Colusa, Williams, Arbuckle, and Maxwell and adjacent to rural community centers, such as Grimes, Princeton, and Stonyford and the partially developed non-sewered communities and settlements such as College City and Century Ranch. The Rural Residential designation may serve as a buffer between farmland and urban uses. The minimum parcel size is 2 acres.

Urban Residential

The Urban Residential (UR) designation identifies areas suitable for residential development, including traditional single family neighborhoods, duplexes, triplexes, apartments, and condominiums, as well as supporting uses. This designation is applied to existing and future residential areas where domestic sewer and water systems are available or can be made available. The Urban Residential designation is intended to accommodate the majority of future residential growth in or adjacent to urban centers, such as Colusa, Williams, Arbuckle, and Maxwell and within or adjacent to rural community centers, such as Grimes and Princeton. Agricultural uses are an acceptable interim use, provided that the land is zoned for agricultural uses, until such time that the lands are developed with urban uses. The minimum parcel size is 6,000 square feet.

Rural Service Center

The Rural Service Center (RSC) designation identifies areas suitable to provide necessary housing and services to the rural communities of Delevan, Sites, and Lodoga. These areas are very small, predominantly residential settlements. Growth potential in these areas is severely limited by the lack of urban services. However, all three communities contain a large number of existing vacant lots that are potentially buildable. The Rural Service Center designation anticipates multiple land uses on any given lot, consistent with and supportive of a higher intensity of development in the community area core that will contribute to a prosperous economy and higher quality of life in each of these rural centers. Subdivision or lot splitting into parcels smaller than two acres is prohibited, unless community water and septic/sewer systems can be provided to serve lots

smaller than two acres. The minimum parcel size is 2 acres, or 12,000 square feet within a water and sewer district service area.

Urban Reserve Area

The Urban Reserve Area (URA) designation serves as a placeholder for future urban development. Properties shall remain zoned for agriculture or open space use until such a time as conversion to urban uses is deemed appropriate. Agricultural uses are an acceptable and encouraged interim use. Lands designated Urban Reserve Area are not intended to be extensively subdivided or developed with large-scale or intensive uses until it is appropriate to develop the lands with urban levels of residential, commercial, parks and recreation, and public/semi-public uses to meet the needs of the County. Intensive uses, such as industrial, alternative energy, and agricultural commercial/industrial uses that may conflict with future urbanization of the area are not allowed. Lands designated Urban Reserve Area shall not be amended to urban land use designations (e.g., residential, commercial, parks and recreation, and public/semi-public uses) in a piecemeal fashion. It is anticipated that most of these parcels will be redesignated under future General Plans when additional lands are needed to accommodate growth. The minimum parcel size is 40 acres.

Tribal Lands

The Tribal Lands (TL) designation may be applied to lands owned by a federally recognized tribe or tribal-sponsored organization. The County does not have land use planning authority over Tribal Lands. However, coordination with tribal entities prior to development on Tribal Lands is encouraged. There is no minimum parcel size.

TABLE 2-1: GENERAL PLAN LAND USE DESIGNATIONS

<i>LAND USE DESIGNATION</i>	<i>PARCELS</i>	<i>ACREAGE</i>
AG	4,253	339,901.8
AT	292	5,007.9
AU	1,420	229,362.4
C	347	914.3
DF	300	12,953.2
FL	240	73,144.5
I	305	7,142.6
MU	71	28.6
NL	266	3,610.6
PR	27	458.1
PS	55	583.0
RC	302	44,094.2
RR	1,455	2,255.7
RSC	105	88.2
TL	11	894.0
UR	2,283	2,296.2
URA	95	1,995.6
TOTAL	11,827	724,731

2.4 GENERAL PLAN BUILDOUT ANALYSIS

The analysis in this EIR addresses two “buildout” scenarios associated with the proposed General Plan, as described in greater detail below.

MAXIMUM THEORETICAL BUILDOUT

The maximum theoretical buildout of the General Plan would be the development of every single parcel in the unincorporated area of the County at the higher end of densities and intensities allowed under the proposed General Plan. This scenario is considered extremely unlikely and impractical. This scenario would require 50 to 100 years of growth, or more, and is addressed under the cumulative analysis provided in Chapter 4.0.

The theoretical maximum buildout of the proposed General Plan has the potential to yield 17,236 new residential dwelling units and 7,137,081 square feet of new non-residential building square footage. However, as described above, theoretical maximum buildout is considered highly unlikely given the existing development pattern in the County, historical growth rates, and anticipated growth and development demand over the life of the General Plan.

PROJECTED 2030 GENERAL PLAN BUILDOUT

This EIR evaluates the projected development that will occur under the General Plan through the year 2030, or the “projected 2030 buildout,” consistent with CEQA requirements that an EIR evaluate the “reasonably foreseeable” direct and indirect impacts of a proposed project. The projected 2030 General Plan buildout growth assumptions are based on population growth rates reported by the California Department of Finance, past development rates in the County, past land use development intensities in the County, policy direction provided in the proposed General Plan, and the location and intensity of land use designations shown on the proposed General Plan Land Use Map. Ultimately, the rate and location of growth in the County over the next 20 years will be largely dictated by market conditions, however, reasonable assumptions regarding the likely location, rate and intensity of growth over the next 20 years have been developed.

Table 2-2 shows the existing levels of development in Colusa County (housing units and non-residential building square footage), as well as projected development through the planning period (2030) and maximum theoretical buildout development. The existing and projected development is shown for each community within the County. It should be noted that formal community boundaries have not been developed as part of the 2030 General Plan. Rather, areas in the general vicinity of each established community were used to estimate growth within the County under each buildout scenario.

Growth projected during the planning period anticipates growth at an annual average rate of 1.46 percent, which is based on the County’s historical growth trends. The project-level impact analysis in this EIR (Chapter 3.1 through 3.14) analyzes the impacts of growth during the planning horizon of 2030, since these are the impacts most likely to occur during implementation of the 2030 General Plan.

TABLE 2-2: EXISTING DEVELOPMENT, PROJECTED BUILDOUT, AND MAXIMUM THEORETICAL BUILDOUT

COMMUNITY	TOTAL		EXISTING DEVELOPMENT		FUTURE POTENTIAL NEW DEVELOPMENT			
					PLANNING PERIOD (2030)		THEORETICAL BUILDOUT (50 -100 YEARS)	
	Parcels	Acreage	Dwelling Units	Non-Res. Sq. Ft.	Dwelling Units	Non-Res. Sq. Ft.	Dwelling Units	Non-Res. Sq. Ft.
Arbuckle	1,216	2,555.0	1,062	126,449	346	81,337	1,933	221,076
Century Ranch	1,173	1,011.1	147	3,520	7	0	421	0
College City	187	484.5	102	11,940	75	2,531	1,383	32,531
Colusa	822	5,964.8	648	193,464	204	137,157	3,622	1,762,694
Grimes	169	139.1	145	27,580	14	2,329	139	29,935
Maxwell	619	4,246.4	516	186,501	322	93,380	2,183	953,212
Princeton	224	608.2	165	29,683	75	2,904	973	37,320
Stonyford	158	997.2	99	15,383	14	2,963	111	38,082
Williams	268	3,446.9	129	50,298	111	83,440	3,443	1,429,790
Remainder	6,991	705,277.6	1,101	731,379	217	204,833	3,028	2,632,441
TOTAL	11,827	724,730.8	4,114	1,376,197	1,385	610,874	17,236	7,137,081

SOURCE: DE NOVO PLANNING GROUP, 2011

As shown in Table 2-2, projected buildout of the 2030 General Plan is estimated to result in 1,385 new housing units in Colusa County by 2030, and 610,874 additional square feet of job-generating, non-residential development (commercial, industrial, agricultural support uses, etc.). This growth would result in a population increase of 4,030 persons and an increase in employment by 2,400 jobs. Residential development would disturb approximately 200 to 275 acres. Approximately 560 to 600 acres of commercial, industrial, parks and recreation, mixed use non-residential, public/semi-public services, and other non-residential uses could develop during the planning horizon; these uses would develop at a range of intensities, with commercial and retail uses having higher land use intensities and other uses, such as parks, recreation areas, and some types of industrial projects, developing with lower intensities. Development totals, which include projected development through 2030 and existing development, are shown in Table 2-3 below.

TABLE 2-3: EXISTING PLUS PLANNING PERIOD (2030) DEVELOPMENT TOTALS

COMMUNITY	EXISTING DEVELOPMENT		NEW DEVELOPMENT THROUGH 2030		EXISTING PLUS 2030 DEVELOPMENT TOTALS	
	Dwelling Units	Non-Res. Sq. Ft.	Dwelling Units	Non-Res. Sq. Ft.	Dwelling Units	Non-Res. Sq. Ft.
Arbuckle	1,062	126,449	346	81,337	1,408	207,786
Century Ranch	147	3,520	7	0	154	3,520
College City	102	11,940	75	2,531	177	14,471
Colusa	648	193,464	204	137,157	852	330,621
Grimes	145	27,580	14	2,329	159	29,909
Maxwell	516	186,501	322	93,380	838	279,881
Princeton	165	29,683	75	2,904	240	32,587
Stonyford	99	15,383	14	2,963	113	18,346
Williams	129	50,298	111	83,440	240	133,738
Remainder	1,101	731,379	217	204,833	1,318	936,212
TOTAL	4,114	1,376,197	1,385	610,874	5,499	1,987,071

SOURCE: DE NOVO PLANNING GROUP, 2011

2.5 PROJECT OBJECTIVES

The 2030 General Plan is intended to reflect the desires and vision of Colusa County’s residents, businesses, Steering Committee, and decision-makers for the future development and operation of Colusa County. The following objectives are identified for the proposed update to the General Plan:

- Reflect the current goals and vision expressed by County residents, businesses, decision-makers, and other stakeholders;
- Address issues and concerns identified by County residents, businesses, decision-makers, and other stakeholders;
- Maintain and enhance the County’s agricultural and rural quality of life;
- Focus new residential growth in and around existing communities;
- Increase opportunities for economic development, including accommodating a broader range of agricultural and agricultural support uses;
- Minimize new regulations or limitations on property use; and
- Address new requirements of State law.

2.6 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

This EIR may be used for the following direct and indirect approvals and permits associated with adoption and implementation of the proposed project.

COUNTY OF COLUSA

The County of Colusa is the lead agency for the proposed project. The 2030 General Plan will be presented to the Planning Commission for review and recommendation and to the Board of Supervisors for comment, review, and consideration for adoption. The Board of Supervisors has the sole discretionary authority to approve and adopt the 2030 General Plan. In order to approve the proposed project, the Board of Supervisors would consider the following actions:

- Certification of the General Plan EIR;
- Adoption of required CEQA findings for the above action;
- Adoption of a Mitigation Monitoring and Reporting Program; and
- Approval of the General Plan Update.

SUBSEQUENT USE OF THE EIR

This EIR provides a review of environmental effects associated with implementation of the proposed 2030 General Plan. When considering approval of subsequent activities under the

proposed General Plan, Colusa County would utilize this EIR as the basis in determining potential environmental effects and the appropriate level of environmental review, if any, of a subsequent activity. Projects or activities successive to this EIR may include, but are not limited to, the following:

- Approval and funding of major projects and capital improvements;
- Future Specific Plan, Planned Unit Development, or Master Plan approvals;
- Revision to the Colusa County Code, including the Zoning Ordinance;
- Water, sewer, and other infrastructure master plans;
- Bicycle and Pedestrian Master Plan;
- Recreation and Open Space Master Plan;
- Development Plan approvals, such as tentative subdivision maps, variances, conditional use permits, and other land use permits;
- Development Agreements;
- Property rezoning consistent with the 2030 General Plan;
- Permit issuances and other approvals necessary for public and private development projects; and
- Issuance of permits and other approvals necessary for implementation of the 2030 General Plan.

OTHER GOVERNMENTAL AGENCY APPROVALS

County approval of the proposed project would not require any actions or approvals by other public agencies. Subsequent projects and other actions to support implementation of the proposed project would require actions, including permits and approvals, by other public agencies that may include, but are not necessarily limited to:

- California Department of Fish and Game (CDFG) approval of potential future streambed alteration agreements, pursuant to Fish and Game Code. Approval of any future potential take of state-listed wildlife and plant species covered under the California Endangered Species Act.
- California Department of Transportation (Caltrans) approval of projects and encroachment permits for projects affecting state highway facilities.
- Central Valley Water Quality Control Board (RWQCB) approval for National Pollution Discharge Elimination System compliance, including permits and Storm Water Pollution Prevention Plan approval and monitoring.

- Colusa Local Agency Formation Commission (LAFCo) approvals for annexation of any lands into the boundaries of a public services provider (e.g., water, wastewater, recreation, or other services district) or the cities of Colusa and Williams.
- U.S. Army Corps of Engineers (ACOE) approval of any future wetland fill activities, pursuant to the Clean Water Act.
- U.S. Fish and Wildlife Service (USFWS) approvals involving any future potential take of federally listed wildlife and plant species and their habitats, pursuant to the Federal Endangered Species Act.



Map date: June 3, 2010

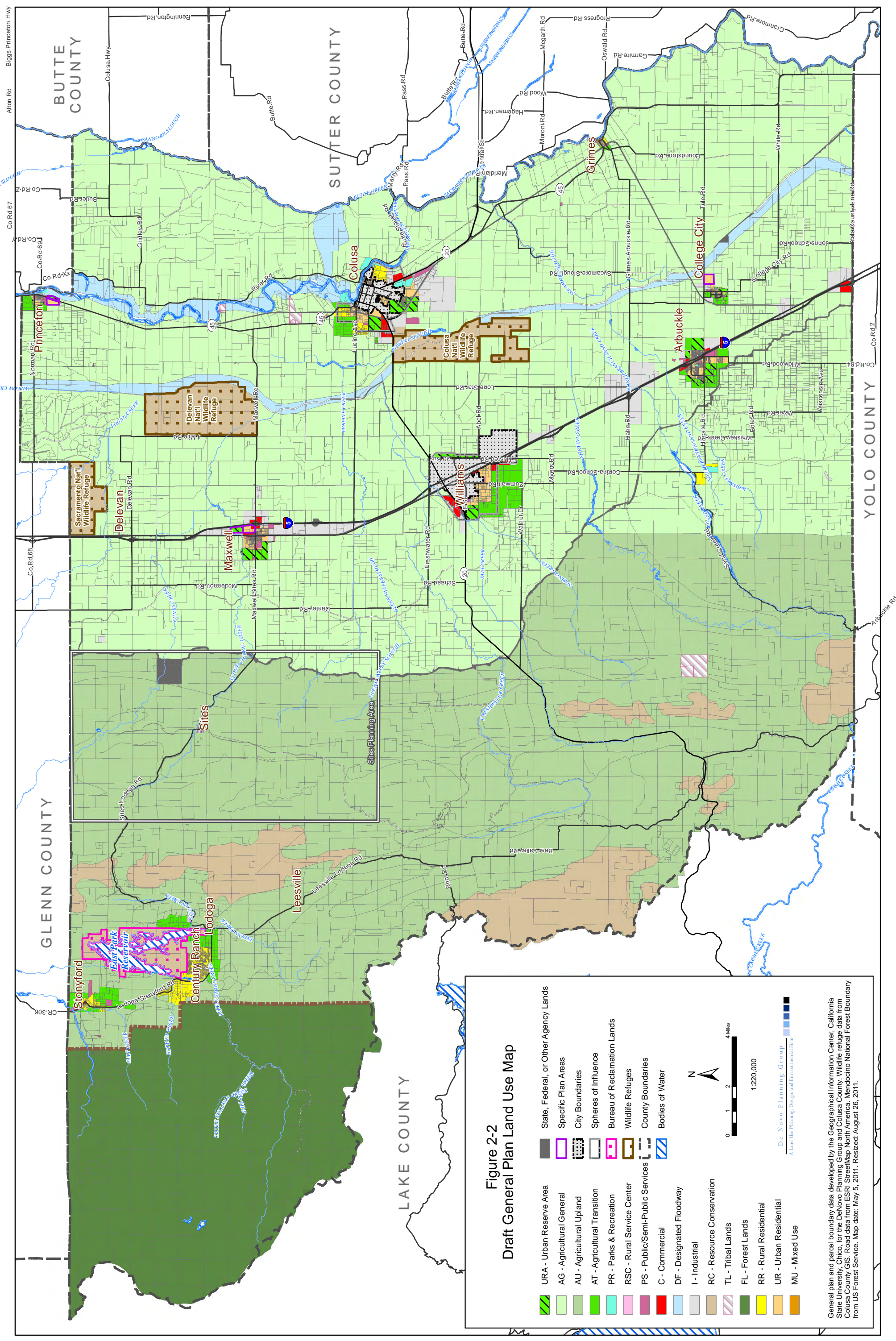
Figure 2-1: Regional Location Map
Colusa County 2030 General Plan EIR



1:5,500,000



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Colusa County possesses numerous scenic resources, many of which are found in the natural areas within the unincorporated county. These resources enhance the quality of life for Colusa County residents, and are a significant attraction that brings tourists to the region. Landscapes can be defined as a combination of four visual elements: landforms, water, vegetation, and man-made structures. Scenic resource quality is an assessment of the uniqueness or desirability of a visual element. This section reviews and summarizes Colusa County's key scenic resources.

This section was prepared based on existing reports and literature for Colusa County. Additional sources of information included the California Department of Transportation's (Caltrans) Designated Scenic Route map for Colusa County. A reconnaissance-level visual resource survey of the County was conducted in the fall of 2009.

This section provides a background discussion of the scenic highways and corridors, and natural scenic resources such as rivers, forests, and wildlife areas found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

Concepts and Terminology

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 1983). 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. These terms and criteria are described in detail below.

Visual Character. Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (U.S. Forest Service 1974; Federal Highway Administration 1983). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality. Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration, employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1983), which are described below.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.
- Unity is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by visual sensitivity. High-quality views are highly vivid, 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.

Viewer Exposure and Sensitivity. The measure of the quality of a view must be 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.

The importance of a view is related, in part, to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1983). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middle ground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic region or types of terrain, the standard foreground zone is 0.25–0.5 mile from the viewer, the middle ground zone is from the foreground zone to 3–5 miles from the viewer, and the background zone is from the middle ground to infinity (U.S. Forest Service 1974).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking, or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (U.S. Forest Service 1974; Federal Highway Administration 1983; U.S. Soil Conservation Service 1978). Commuters and non-recreational travelers have generally fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual

sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

3.1.1 ENVIRONMENTAL SETTING

Colusa County is largely defined by its rural agricultural setting. Much of the County is in active agricultural production, consisting of numerous farming operations, some of which cover thousands of contiguous acres of land. The County is also home to three National Wildlife Refuges, two National Wildlife Management Areas, one State Recreation Area, two State Wildlife Areas, three Land Conservancy Areas, and a wide variety of habitat types and surface water resources that contribute to the scenic beauty and quality of life in Colusa County. These visual and scenic resources are described in greater detail below.

SCENIC HIGHWAYS AND CORRIDORS

Scenic Highways

A scenic highway is generally defined by Caltrans as a public highway that traverses an area of outstanding scenic quality, containing striking views, flora, geology, or other unique natural attributes. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.

Scenic Corridors

A scenic corridor is the view from the road that may include a distant panorama and/or the immediate roadside area. A scenic corridor encompasses the outstanding natural features and landscapes that are considered scenic. It is the visual quality of the man-made or natural environments within a scenic corridor that are responsible for its scenic value. Commonly, the physical limits of a scenic corridor are broken down into foreground views (zero to one quarter mile) and distant views (over one quarter mile). In addition to distinct foreground and distant views, the visual quality of a scenic corridor is defined by special features, which include:

- Focal points - prominent natural or man-made features which immediately catch the eye.
- Transition areas - locations where the visual environment changes dramatically.

- Gateways - locations which mark the entrance to a community or geographic area.

Value of Scenic Highways and Corridors

Scenic corridors make major contributions to the quality of life enjoyed by the residents of Colusa County. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the rural lifestyle are all ways in which scenic corridors are valuable to County residents.

Scenic highways and their associated corridors also strengthen the tourist industry of Colusa County. For many visitors, highway corridors will provide their only experience of Colusa County. Enhancement and protection of these corridors ensures that the tourist experience continues to be a positive one and, consequently, provides support for the tourist-related activities of the County's economy.

Designated and Eligible Scenic Facilities

According to the California Scenic Highway Mapping System, administered by Caltrans, there are no officially designated scenic highways or scenic corridors in Colusa County. However, there are two Eligible State Scenic Highway Corridors in Colusa County that have not yet been officially designated.

1. In southwestern Colusa County the segment of SR 20 between the County line and the junction of SR 20 and SR 16 is eligible for designation as a State Scenic Highway.
2. In southwestern Colusa County the segment of SR 16 between the County line and the junction of SR 20 and SR 16 is eligible for designation as a State Scenic Highway.

NATURAL SCENIC RESOURCES

Colusa County encompasses an outstanding variety of natural vistas and landscapes. The following section describes the significant scenic resources found in the county.

Agricultural Lands. As described above, much of the land in Colusa County is currently in active agricultural production. While not a natural condition of the land, agricultural lands are perceived by many viewers as having a relatively high level of scenic value. Agricultural lands in Colusa County consist of orchards, row crops, rice fields, and rangeland. Agricultural lands provide scenic viewsheds largely void of man-made structures. Many viewers perceive large swaths of land neatly covered in various types of crops as having a very high scenic value.

The eastern half of the County is dominated by a “checkerboard” of large acreage farms, with land ownership and road alignments generally following square mile section lines. Views of agricultural lands in the eastern portion of the County are expansive, and framed primarily by the rolling foothills of the Coast Range to the west and the jagged peaks of the Sutter Buttes to the east.

In the western portions of the County, large farms give way to much larger cattle and sheep ranches, cultivated fields give way to arid rangeland, and the flat terrain found throughout the eastern portions of the County transitions into rolling hills and spectacular upland valleys. Further

west, the land becomes even more rugged and wild as elevations increase up to 7,000 feet in the Mendocino National Forest and the wilderness areas surrounding Snow Mountain.

Sutter Buttes. The Sutter Buttes are a small circular complex of eroded volcanic lava domes which rise above the flat plains of the Central Valley of California. The highest peak, South Butte, reaches about 2,130 feet (650 m) above sea level. The Buttes are located just outside of Yuba City, California in the Sacramento Valley, the northern part of the Central Valley. They are named for John Sutter, who received a large land grant from the Mexican government. The Sutter Buttes also hold the title of being the world's smallest mountain range. While not located within Colusa County, the Sutter Buttes provide a distinct visual backdrop to the eastern portion of Colusa County.

The indigenous Maidu referred to the Sutter Buttes as *Esto Yamani* and the native Patwin called them *Onolai*, both names roughly translate to mean The Middle Mountains. They were regarded as a spiritual place for renewal and sustenance rather than a place to live or build villages. A tour of the Sutter Buttes can yield historical markers, rock walls, the remains of old stone corrals, building foundations, historic homes and even a circular stone-lined well right beside the road. Several cemeteries are scattered around the Buttes.

Snow Mountain. Snow Mountain is a mountain with two 7,000+ summits named Snow Mountain East and Snow Mountain West, located on the border of Colusa County and Lake County in the northwestern portion of Colusa County. The East peak is the highest point of both counties. The mountain is part of the Pacific Coast Ranges mountain system and it is the first tall peak in the California Coast Ranges north of San Francisco. On clear days, the peak can be seen from Mount Diablo, and from several peaks in the Mayacamas Mountains, such as Mount Saint Helena, and Mount Konocti. Usually, the peaks are quite prominent from the California Central Valley, moreover the Sacramento Valley, such as from Interstate 5. On clear days the peaks can be seen from most vantage points in Colusa County. Like its name states, the summits and nearby high mountains get snowfall in winter, and the snowpack can last until June. The mountain gives its name to the 37,700-acre Mountain Wilderness in the Mendocino National Forest.

National Wildlife Refuges and Wildlife Management Areas

The Sacramento National Wildlife Refuge Complex consists of five national wildlife refuges (NWR) and three wildlife management areas (WMA) that comprise over 35,000 acres of wetlands and uplands in the Sacramento Valley, California. In addition, there are over 30,000 acres of conservation easements in the Complex. The Refuges and easements are part of the USFWS; they serve as resting and feeding areas for nearly half the migratory birds on the Pacific Flyway.

COLUSA NATIONAL WILDLIFE REFUGE. The Colusa National Wildlife Refuge is a 4,507-acre refuge primarily consisting of intensively managed wetland impoundments, with some grassland and riparian habitat. This Wildlife Refuge typically supports wintering populations of more than 200,000 ducks and 50,000 geese. Wetland impoundments are intensively managed to provide optimal habitat for the dense concentration of wintering waterfowl, as well as habitat for resident wildlife and spring/summer migrants.

The grassland habitat supports several populations of endangered and sensitive species of plants. The refuge is a stronghold for populations of the endangered palmate-bracted bird's-beak and the threatened giant garter snake. About 35,000 visitors come to the refuge each year for wildlife viewing and 4,000 come to hunt waterfowl and pheasant.

DELEVAN NATIONAL WILDLIFE REFUGE. The Delevan National Wildlife Refuge is a 5,797-acre refuge consisting of over 4,500 acres of intensively managed wetlands and 1,200 acres of uplands. More than 200,000 ducks and 100,000 geese come to the refuge each winter. The Wildlife Refuge supports several endangered plants and animals: giant garter snake, wintering peregrine falcon and bald eagle, breeding tricolored blackbird, and a large colony of the endangered palmate-bracted bird's beak. Resident wildlife include grebe, heron, blackbird, beaver, muskrat, black tailed deer and other species typical of upland and wetland habitats. Approximately 7,000 people hunt on the refuge each year and an estimated 1,000 visitors observe wildlife from a primitive roadside overlook along the Maxwell-Colusa Highway.

SACRAMENTO NATIONAL WILDLIFE REFUGE. The Sacramento National Wildlife Refuge is a 10,783-acre refuge consisting of about 7,600 acres of intensively managed wetlands, uplands, riparian habitat, and vernal pools. It typically supports wintering populations of more than 600,000 ducks and 200,000 geese. The refuge supports several endangered plants and animals, including transplanted colonies of palmate-bracted birds-beak, several species of fairy shrimp, vernal pool tadpole shrimp, giant garter snake, wintering peregrine falcon, bald eagle, and breeding tricolored blackbird. Resident wildlife includes grebe, heron, blackbird, golden eagle, beaver, muskrat, black-tailed deer, and other species typical of upland and wetland habitats. Approximately 9,000 people hunt on the refuge each year, and 73,000 people use the visitor center, auto tour route, and walking trail.

WILLOW CREEK-LURLINE WILDLIFE MANAGEMENT AREA. The Willow Creek-Lurline Wildlife Management Area is an approximately 20,000 acre area that has been approved for acquisition of conservation easements on privately owned wetlands to protect fall/winter habitat for waterfowl. Approximately 12,000 acres of the Wildlife Management Area are privately owned for the purpose of waterfowl hunting. Conservation easements have been acquired on approximately 6,000 acres, requiring landowners to maintain land in wetlands. The area is surrounded by intensive agriculture (rice and other grains). These privately-owned lands are closed to public access.

NORTH CENTRAL VALLEY WILDLIFE MANAGEMENT AREA. The North Central Valley Wildlife Management Area was established primarily to protect wintering habitat for waterfowl. Under the North Central Valley WMA the USFWS has the authority to purchase conservation easements on up to 48,750 acres of private lands located within an 11 county area of the Sacramento Valley. Within this management area, the Service has purchased conservation easements on 11,811 acres from willing landowners to protect wildlife habitat. In exchange for payment, the landowners agree to maintain wetlands and other habitats on their property in perpetuity. These Wildlife Management lands are privately owned and not open for public access.

State Recreational Areas

COLUSA-SACRAMENTO RIVER STATE RECREATION AREA. The Colusa-Sacramento River State Recreation Area has 67 acres along the Sacramento River. Wildlife in the area includes deer, raccoons, opossums, foxes, skunks and muskrats, which are sheltered by riverbank cottonwood and willow trees. Wild grape and fig are among many other shrubs, trees and plants along the river. Common bird species include ring-necked pheasants, California quail, mallard ducks, Canada geese, western meadowlarks, northern flickers and ospreys. This facility provides 14 campsites, picnic sites, and a launch ramp for small boats, and is also within walking distance of the City of Colusa's downtown.

State Wildlife Areas

COLUSA BYPASS WILDLIFE AREA. This 1,248 acre wildlife area is mostly grasslands with several rows of willows and cottonwood trees that line the eastern edge of the property. Excess water is diverted into the area from the Sacramento River during high flows in the winter. The area provides a significant amount of cover for mammals and both resident and migratory birds. Hunting is allowed and opportunities are mostly for upland game, including deer, pheasant, snipe, and dove. Bird watching and wildlife viewing are also common.

SACRAMENTO RIVER WILDLIFE AREA. This 4,014 acre wildlife area is located in 14 separate units along the west and east side of the Sacramento River in Butte, Glenn, and Colusa Counties. The wildlife area is a riparian forest dominated by cottonwood, willow, ash, sycamore, and box elder trees with a dense understory of wild grape, pipevine, poison oak and grasslands, oxbow lakes, and gravel bars. Common wildlife along the river includes otters, beavers, gray fox, bobcat, western pond turtles, ash-throated flycatchers, great blue herons, egrets, and a variety of birds of prey. Hunting is allowed and opportunities are mostly for deer, quail, turnkey, and dove. Fishing, trapping, and bird watching are also common.

US Bureau of Reclamation Projects

EAST PARK RESERVOIR. East Park Reservoir was authorized in 1907 by the federal government as a storage facility to provide irrigation waters, under the Orland Project. East Park Reservoir is in the northwestern part of Colusa County, a few miles southeast of Stonyford and northwest of Lodoga. The total land area around the reservoir is 2,468 acres and the total water surface is 1,820 acres. Common mammals are wild pigs, coyotes, blacktail deer, tule elk, ground squirrels and black-tailed jackrabbits. Canada geese, bald eagles, a wide variety of ducks and bird species, and the special status tri-colored blackbird can be seen around the reservoir. East Park Reservoir provides opportunities for camping, boating, picnicking and fishing.

American Land Conservancy

BEAR VALLEY RANCH. A conservation easement over the 16,513-acre Bear Valley Ranch was acquired by the American Land Conservancy in 2001. The conservation easement permanently precludes development on the property, while permitting traditional cattle ranching. The ranch is known as having one of the state's most spectacular wildflower displays. This conservation easement was funded by the California Wildlife Conservation Board and the David and Lucile Packard Foundation. The easement is monitored by California Rangeland Trust.

SULPHUR CREEK. The American Land Conservancy acquired 1,531 acres in the Sulphur Creek valley in 1999. The Sulphur Creek valley is part of a 6,500-acre watershed located in the coastal range. From 2002 to 2005, the American Land Conservancy oversaw a three-year restoration effort on the property that was funded by the California Wildlife Conservation Board. The area was once heavily mined for gold, but is now known for the natural hot springs that are part of the historic Wilbur Hot Springs resort. The American Land Conservancy sold the resort subject to a conservation easement that precludes development of the land and protects the oak woodlands, grasslands and riparian habitat.

PAYNE RANCH. A conservation easement over the 3,140-acre Payne Ranch was acquired by the American Land Conservancy in 2006. Payne Ranch is a private working cattle ranch in Colusa County. The southern border of the Payne Ranch is contiguous to 27,245 acres specially-designated as the Cache Creek Wilderness Area, home to one of the largest free roaming Tule Elk populations in California, the second largest wintering bald eagle population in the state, as well as numerous rare and endangered plant and animal communities. The conservation easement conserves the agricultural, ecological, and scenic resources of the property while contributing to the environmental health of the surrounding 70,000-acre Cache Creek Natural Area. The Payne Ranch connects to two other American Land Conservancy projects in the region – Bear Valley Ranch and Sulphur Creek, which together conserve nearly 20,000 acres that contribute to the region’s rich biodiversity. The conservation easement was funded by the California Wildlife Conservation Board.

National Forests

Mendocino National Forest. The Mendocino National Forest is 913,306 acres and lies in parts of six counties, including Colusa, Lake, Glenn, Mendocino, Tehama, and Trinity. Elevations in the Forest range from 750 feet to 8,092 feet, with the average elevation about 4,000 feet. An estimated 60,000 acres of old growth forests occur here, including forests of Douglas-fir, Ponderosa Pine, White Fir, Tanoak, and Pacific madrone. The Mendocino National Forest is the only one of California's 18 national Forests that are not crossed by a paved road or highway and it is attractive to people seeking outdoor recreation. The Forest provides resources through logging and grazing, in addition to its recreational activities.

Rivers

Sacramento River. The Sacramento River traverses the eastern portion of Colusa County in a north-south direction, stretching from the northern county border to the southern county border. South of the City of Colusa, the Sacramento River generally demarcates the County’s eastern boundary. The Sacramento River corridor in Colusa County provides numerous opportunities for recreational activities such as hiking, camping, hunting, fishing, boating and other water sports. The river corridor is home to countless plant, animal and aquatic species and numerous habitat types. Areas of the river corridor have been developed with parks and boat launch facilities to provide for public access to the river. The Sacramento River feeds, and is fed by, numerous creeks, streams and tributaries throughout Colusa County and neighboring Counties.

3.1.2 REGULATORY SETTING

FEDERAL

There are no federal regulations that apply to the proposed project related to visual resources in the study area.

STATE

California Department of Transportation – California Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq.

The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code. A list of California's scenic highways and map showing their locations may be obtained from the Caltrans Scenic Highway Coordinators.

If a route is not included on a list of highways eligible for scenic highway designation in the Streets and Highways Code Section 263 et seq., it must be added before it can be considered for official designation. A highway may be designated scenic depending on the extent of the natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

When a local jurisdiction nominates an eligible scenic highway for official designation, it must identify and define the scenic corridor of the highway. A scenic corridor is the land generally adjacent to and visible from the highway. A scenic highway designation protects the scenic values of an area. Jurisdictional boundaries of the nominating agency are also considered, and the agency must also adopt ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes. These ordinances make up the scenic corridor protection program.

To receive official designation, the local jurisdiction must follow the same process required for official designation of State Scenic Highways. The minimum requirements for scenic corridor protection include:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising (including a ban on billboards);
- Careful attention to and control of earthmoving and landscaping; and
- Careful attention to design and appearance of structures and equipment.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on aesthetics if it will:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state 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 which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: General Plan Implementation could result in Substantial Adverse Effects on Visual Character, including Scenic Vistas or Scenic Resources (Significant and Unavoidable)

While Colusa County contains numerous areas and viewsheds with relatively high scenic value, there are no officially designated scenic vista points in Colusa County. Additionally, as described above, there are no officially designated scenic highways located in Colusa County. Significant visual resources in the County include views of the Sutter Buttes, views of Snow Mountain, expansive views of agricultural lands, wildlife habitat areas, the Sacramento River, and East Park Reservoir. Perhaps the greatest visual resource in Colusa County is the County's vast expanses of undisturbed and undeveloped open space. These resources can be viewed from public vantage points, including highways, roads, recreation areas, and wildlife refuges throughout the County.

Buildout of the proposed 2030 General Plan would allow for new development to occur in areas that are open space and/or agricultural, including land that has historically been used for agricultural operations and areas that have been previously undeveloped. The introduction of new development into previously undisturbed areas or areas that have been historically used for agricultural operations may result in potentially significant impacts to scenic resources or result in the degradation of the County's visual character.

Buildout under the proposed 2030 General Plan and implementation of the General Plan Land Use Map has the potential to result in new and expanded development along highway corridors with high scenic values, even though these corridors are not officially designated as State Scenic Highways. Interstate 5 and State Routes 20 and 45 are the principal highway corridors through Colusa County. Development under the 2030 General Plan and the land use designations identified on the Land Use Map would allow for increased commercial and industrial land uses

along these highway corridors, primarily in areas that are currently urbanized, but also in areas that are currently agricultural or undeveloped.

However, the 2030 General Plan has been developed to preserve expansive areas of open space and to ensure that new development is located in and around existing communities, thus ensuring that new development is an extension of the existing urban landscape and minimizes interruption of views of the Sutter Buttes, Snow Mountain, natural resources, open space, and agricultural lands.

Future development would be required to be consistent with the 2030 General Plan. A central theme of the 2030 General Plan is to preserve and protect the County's rural and agricultural character by concentrating new growth in and around existing communities. This is expressed in Objective LU-1B in the Land Use Element and is supported by policies LU 1-10 through LU 1-16. Future development would be required to be consistent with the 2030 General Plan. The policies and action items contained in the Community Character Element, listed below, are intended to maintain and enhance the overall visual character of the County, and to avoid the installation of structures or features that conflict with the character of the surrounding area. Action CC 1-C requires the development and implementation of general countywide design guidelines for new residential and commercial development. This will be the primary mechanism used by the County to ensure that new development under the proposed 2030 General Plan is consistent with and complimentary to the surrounding areas.

The proposed 2030 General Plan contains numerous policies and implementing actions (Action Items) related to the preservation and enhancement of viewsheds from County roadways and highways. The policies and action items described below provide additional protection to scenic resources along local highways through the establishment of a Rural Character Corridor program (Action OSR 1-C) and policies that protect scenic viewsheds along County highways and roadways with high scenic value.

The implementation of the policies and action items contained in the Land Use and Community Character Elements listed below, as well as policies and action items contained in the Open Space and Recreation Element would ensure that new urban residential and commercial development in the County is located in and around existing communities, which would limit impacts to scenic resources and limit visual degradation by preserving extensive areas of open space, agricultural lands and undisturbed areas between and surrounding the existing County communities. This holistic land use approach would reduce impacts to visual resources by concentrating new development around existing development, and maximizing opportunities for open space preservation and continued agricultural use of lands outside of established communities. Additionally, the implementation of the policies and action items contained in the Community Character Element would further ensure that new development is designed in a way that enhances the visual quality of the community, compliments the rural character of the County, and that adverse effects on public views are minimized.

However, even with the implementation of the policies and actions in the 2030 General Plan, the potential for new development to interrupt scenic views, particularly new industrial or large-scale

development on agricultural or undeveloped lands, would remain. Existing scenic views may be diminished or obscured. While the 2030 General Plan policies and actions would ensure that impacts are reduced, the only method to completely avoid impacts to scenic resources on a Countywide basis would be to severely limit the development potential of agricultural and undeveloped lands, including development such as large barns, silos, storage facilities, and other structures that support agricultural uses. This type of mitigation is not consistent with the objective of the 2030 General Plan to support agricultural operations. Therefore, the impact would be **significant and unavoidable**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy LU 1-10: Concentrate future development within or adjacent to the communities that provide urban services, including Arbuckle, College City, Colusa, Grimes, Maxwell, Princeton, Stonyford, and Williams, with an emphasis on placing large-scale and more intense development projects in these population centers as opposed to other rural and remote areas that lack public services and amenities or are not connected to an existing community.

Policy LU 1-11: Make land use decisions that promote compact communities, generally filling in gaps of vacant land between already developed areas before growing outward.

Policy LU 1-12: Prohibit freestanding subdivisions and large-scale commercial developments that are isolated from existing communities, are outside of city and utility district spheres of influence, and/or lack access to urban-level services.

Policy LU 1-13: Support the creation of service districts and other mechanisms that will accommodate planned land uses and densities in pre-existing subdivided rural communities such as Century Ranch and College City.

Policy LU 1-14: Promote infill development by encouraging higher densities and more intense uses on vacant and underdeveloped lots within existing communities that are compatible with the physical and cultural character of the particular community.

Policy LU 1-15: To conserve open space and agricultural lands outside of planned urban areas and provide the efficient use of public services, make land use decisions that reinforce the cultural and economic sustainability of unincorporated community centers of the County, including Arbuckle, College City, Grimes, Maxwell, Princeton, and Stonyford.

Policy LU 1-16: Use the Urban Reserve Area land use designation to identify lands for future urban use and to delineate the maximum extent of urban growth that can occur around established communities.

Policy LU 1-17: Use the Agricultural Transition and Rural Residential land use designations to buffer agricultural and other types of open space from existing communities, in areas such as Arbuckle, Maxwell, Grimes, Princeton, and College City and from the incorporated cities and surrounding urban development.

Policy LU 2-1: Agriculture, upland, and resource conservation are the primary land use designations to be used outside of the communities and any adjacent Urban Reserve Areas.

Policy LU 3-2: Encourage clustering of housing and planned unit developments within communities and areas designated for residential development so that larger areas of open space may be permanently preserved.

Policy CC 1-1: Protect the rural atmosphere and historic character of Colusa County's towns and unincorporated communities.

Policy CC 1-5: Plan land uses within communities so that more intense land uses with higher development densities and community-oriented services, retail, and employment uses are located within the downtown or community center areas, transitioning to less intense land uses around community edges.

Policy CC 1-6: Require new commercial development to complement the character of the area in which it is proposed, to provide a pleasing aesthetic appearance and high-quality finishes, and to be designed with buildings, landscaping, and signage that enhance the community and surrounding uses, and to not detract from the character of existing communities.

Policy CC 1-8: Implement the mechanisms and strategies identified in the Conservation and Open Space Elements of the General Plan as tools to actively protect open space and agricultural areas between cities and communities throughout the County.

Policy CC 1-14: Encourage private landowners to maintain their property in a way that contributes to the attractive appearance of the County, while recognizing that many of the land uses in the County, including agriculture and light industry, require a variety of on-site structures, equipment, machinery and vehicles in order to operate effectively.

Policy CC 1-15: Preserve and enhance the rural landscape as an important scenic feature of the County.

Policy CC 1-16: Require all new development to protect the scenic beauty of the County, incorporate high quality site design, architecture, and planning so as to enhance the overall quality of the built environment in the County's communities and create a visually interesting and aesthetically pleasing built environment that respects the rural nature of the County.

Policy CC 1-17: Establish design standards, including community-specific policies, to encourage visually attractive development and lessen the visual impact of existing non-conforming uses.

Policy CC 1-18: Upgrade the visual appearance and quality of development on the approaches to each community and prevent development which degrades the aesthetic quality of scenic roadways elsewhere.

Policy CC 1-19: Require architecture and site design to reflect a human-scale that is sensitive, compatible and distinctive to both the site and the community.

Policy CC 1-20: Avoid the repetition of residential facades and designs within subdivisions and abrupt changes in facades between adjoining developments.

Policy CC 1-21: Architecture in the downtown areas of the unincorporated communities should have a pedestrian scale, with varied and articulated facades. Entries should be oriented to the sidewalk and front facades should include numerous windows.

Policy CC 1-22: Regulate the size, quantity, location, and design of signs to maintain and enhance the visual appearance of the unincorporated communities.

Policy CC 1-23: New freestanding off-site advertising along rural roads shall be limited. Existing non-conforming advertising shall be eliminated whenever possible.

Policy OSR 1-16: Protect roadway viewsheds with high scenic value and “rural flavor” and encourage the establishment of public viewing areas in areas with rural character and scenic beauty.

Policy OSR-1-17: Protect and preserve the following features along rural character corridors and in scenic areas to the extent appropriate and feasible:

- *Trees, wildflowers, and other natural or unique vegetation*
- *Landforms and natural or unique features*
- *Views and vistas, including expansive views of open space and agricultural lands*
- *Historic structures (where feasible), including buildings, bridges, and signs*

Policy CIRC 1-8: Plan and design transportation facilities to avoid damage to the County’s scenic and environmental resources, such as reductions in air quality and disruption of soils, topography, vegetative cover, and wildlife habitat.

Policy OSR 1-18: Provide a greater number of areas along rural character corridors and in scenic areas for public access and recreation, including vistas, rest stops, or picnicking.

Policy OSR 1-19: Discourage non-agricultural or non-recreational roadside commercial and industrial activities along rural character corridors.

Policy OSR 1-20: Design new roads in hillside areas along the lines of the landscape and in a manner which minimizes visual impact from surrounding areas.

Policy OSR 1-21: Prohibit off-site advertising and billboards in rural character and scenic areas outside of communities, unless the off-site signage is part of a Countywide sign program to direct travelers to various recreation and destination points in the County.

Actions

Action OSR 1-C: Develop a local Rural Character Corridors program that protects roadways and areas with high scenic value and rural flavor. The intent of the program would be to identify areas where rural and scenic characteristics should be protected and enhanced, to the extent that the protection does not interfere with the County’s agricultural and economic development goals.

- *Designate areas as “Rural Character Corridors” only after careful consideration of the following:*
- *Scenic and rural characteristics, including vista points, geologic resources, native plant and animal species, waterways, historic sites, cultural resources, expansive open space or agricultural areas, and agricultural, timber, and recreational uses.*
- *Safety characteristics, including road surface and alignment, shoulder width, traffic levels, number of intersections, access points, turnouts, and rest areas.*
- *Economic impacts on properties affected by a Rural Character Corridors designation.*

The Rural Character Corridors program should include the following:

- *Encourage uses to be designed and sited in a manner that does not interfere with the rural and scenic characteristics of the area, to the extent feasible.*
- *Encourage public access, including signage, vistas, rest stops, or picnicking, to viewing points such as rural viewsheds, wildflower areas, unique landforms, historic and cultural resources, and expansive agricultural and rural views.*
- *Site utilities underground, where feasible, otherwise site utilities in a way that minimizes their intrusiveness into scenic views.*
- *Require earthmoving and road reconstruction projects to be followed by re-seeding and re-vegetation which restores a natural appearance.*

Action CC 1-C: Prepare and implement general countywide design guidelines and minimum design requirements (standards) for new residential and commercial development as described in Action LU 3-B. The design guidelines should include more specific and detailed standards for new development in the communities of Arbuckle and Maxwell. The design guidelines should provide for attractive growth that respects the cultural heritage and character of each community and should be developed with input from each community.

Action CC 1-D: Update the Municipal Code to develop standards for the location, size and design of signage along rural roadways within the County.

Action CC 1-E: Revise the Municipal Code to update standards for the location, size and design of signage to identify specific design standards for visitor-oriented commercial uses, the downtown areas of Arbuckle and Maxwell that complement the standards included in the design guidelines (Action CC 1-C) and to streamline the permitting process for signs less than 15 square feet to encourage businesses to regularly update their signs, within the unincorporated communities.

Impact 3.1-2: General Plan Implementation could result in the Creation of New Sources of Nighttime Lighting and Daytime Glare (Less than Significant)

The primary sources of daytime glare are generally sunlight reflecting from structures and other reflective surfaces and windows. Implementation of the proposed 2030 General Plan would introduce new sources of daytime glare into previously undeveloped areas of the County and increase the amount of daytime glare in existing developed communities. The General Plan Land Use Map identifies areas for the future development of residential, commercial, industrial, recreational, and public uses. Such uses may utilize materials that produce glare. Daytime glare impacts would be most severe in areas that have been previously undisturbed, and in areas that receive a high level of daily viewership, such as the Interstate 5 corridor and areas around existing residential development.

The primary sources of nighttime lighting are generally from exterior building lights, street lights and vehicle headlights. Exterior lighting around commercial and industrial areas may be present throughout the night to facilitate extended employee work hours, ensure worker safety, and to provide security lighting around structures and facilities. Nighttime lighting impacts would be most severe in areas that do not currently experience high levels of nighttime lighting. Increased

nighttime lighting can reduce visibility of the night sky, resulting in fewer stars being visible and generally detracting from the rural quality of life in Colusa County.

Future development would be required to be consistent with the 2030 General Plan, as well as lighting requirements in the County Code. The proposed 2030 General Plan contains policies and action items related to the regulation and reduction of daytime glare and nighttime lighting. Implementation of Action Item OSR 1-B would result in revisions to the County's Zoning Ordinance Development Standards to include standards for the installation of exterior lighting in order to reduce lighting impacts on adjacent properties and to reduce lighting impacts to the night sky.

Additionally, Policy CC 1-6 (identified above under Impact 3.1-2) requires new commercial development to complement the character of the area in which it is proposed. Policy CC 1-17 and Action CC 1-C require the preparation and implementation of countywide design guidelines, which will include additionally standards related to allowable and appropriate exterior building materials and the location and use of exterior lighting. Through the implementation of these policies and action items during the development review process, the County can ensure that adverse impacts associated with daytime glare and nighttime lighting are reduced to a **less than significant** level.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy OSR 1-15: Reduce light and glare from artificial lighting within open space and agricultural areas to the extent that it does not adversely impact the County's rural character.

Actions

Action OSR 1-B: Revise Article 8 (Development Standards) of the Zoning Ordinance to require that light fixtures be designed and sited so as to minimize light pollution, light spillage, and glare into adjoining properties and the night sky. Consider amending the Public Nuisance Abatement Code to include light glare impacts to the extent that it does not adversely interfere with agricultural operations.

This section provides a background discussion of the history, agricultural land use, farming and the economy, and timber resources found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. Two comment letters addressing agricultural resources were received during the Notice of Preparation public review; see the Colusa Local Agency Formation Commission (LAFCO) and California Department of Conservation (DOC) letters included in Appendix B.

3.2.1 ENVIRONMENTAL SETTING

HISTORY

Although the prospect of gold brought most people to California, and particularly to the Sierra Nevada, during the late 1800s many were disappointed. With the discovery of fertile soils in the Great Central Valley, many of these early arrivals remained in the area to farm. Some of the most desirable agricultural sites in the Valley were located in the eastern portion of Colusa County. Originally, Colusa County farmers grew grains, particularly wheat, and relied on the annual rains and favorable weather to produce some of the significant grain yields during the early nineteenth century. Established in 1887, the Glenn-Colusa Irrigation District diverted Sacramento River waters to the agriculture fields of Colusa County. With the combination of prime soils and inexpensive water availability, agriculture was transformed in the County from limited dry farming to more diverse irrigated farming. Agriculture became the County's major industry and continues today as Colusa County's primary economic sector.

AGRICULTURAL LAND USE

The Colusa County Agricultural Commission identifies 434,400 acres as cropland and 206,600 acres as underdeveloped rangeland. Within these agricultural classifications, farmland is used for a variety of crop, livestock, and other agriculturally-related activities.

Important Farmlands

The California Department of Conservation, as part of its Farmland Mapping and Monitoring Program (FMMP), prepares Important Farmland Maps indicating the potential value of land for agricultural production. The Important Farmland Maps identify five agriculture-related categories and three non-agricultural categories:

Prime Farmland: Prime farmland is land with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance: Farmland of statewide importance is farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. The land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland: Unique farmland is farmland 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

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or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Farmland of Local Importance: Farmland of local importance is considered land important to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. Farmland of local importance in Colusa County includes lands which do not qualify as Prime, Statewide, or Unique farmland, but are currently irrigated crops or pasture or non-irrigated crops; lands that would meet the Prime or Statewide designation and have been improved for irrigation, but are now idle; and lands that currently support confined livestock, poultry operations and aquaculture.

Grazing Land: Grazing land is land on which the existing vegetation is suitable for the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for this category is 40 acres.

Urban and Built-up Land: This category consists of non-agricultural land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Other Land: Other land is non-agricultural land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Water Area: This category consists of bodies of water.

In 1998, the FMMP began classifying Colusa County farmlands according to the above descriptors. The most recent farmland survey was conducted in 2006. Table 3.2-1 summarizes the farmland and other classifications for Colusa County by the FMMP from 1998 to 2006. Since the initial survey in 1998, important farmlands in the county have decreased by 1,264 acres and grazing land has increased by 168 acres, for a net decrease in agricultural lands of 1,096 acres. The decrease in important farmlands was primarily in farmland of local importance, which decreased by 881 acres. Prime farmland and unique farmland decreased by 216 and 221 acres, respectively, while farmland of statewide importance increased by 53 acres. Figure 3.2-1 identifies Important Farmlands and other lands in Colusa County based on FMMP classifications.

TABLE 3.2-1: FMMP FARMLAND CLASSIFICATION AND LAND USE CATEGORIES

FARMLAND CLASSIFICATION AND LAND USE CATEGORIES	ACREAGE BY CATEGORY (1)					1998-2006 NET ACREAGE CHANGE	ANNUAL AVERAGE CHANGE
	1998	2000	2002 (3)	2004	2006 (4)		
Prime Farmland	201,910	202,231	201,346	201,642	200,182	-1,728	-216
Farmland of Statewide Importance	1,746	1,810	1,826	2,153	2,170	424	53
Unique Farmland	125,083	125,496	126,916	124,796	123,318	-1,765	-221
Farmland of Local Importance	239,966	236,353	234,186	232,759	232,921	-7,045	-881
Important Farmland Subtotal	568,705	565,890	564,274	561,350	558,591	-10,114	-1,264
Grazing Land	7,684	7,526	9,408	9,151	9,030	1,346	168
Agricultural Land Subtotal	576,389	573,416	573,682	570,501	567,621	-8,768	-1,096
Urban and Built-Up Land	4,293	4,259	4,431	4,624	4,877	584	73
Other Land	157,872	160,878	160,439	163,429	165,983	8,111	1,014
Water Area	1,838	1,838	1,838	1,838	1,911	73	9
Total Area Inventoried (2)	740,392	740,391	740,390	740,392	740,392	0	0

(1) FIGURES ARE GENERATED FROM THE MOST CURRENT VERSION OF THE GIS DATA. FILES DATING FROM 1986 THROUGH 1992 WERE REPROCESSED WITH A STANDARDIZED COUNTY LINE IN THE ALBERS EQUAL AREA PROJECTION, AND OTHER BOUNDARY IMPROVEMENTS.

(2) TOTAL AREA INVENTORIED INCREASED IN 1998 DURING UPGRADE TO IMPORTANT FARMLAND STATUS TO INCLUDE SMALL AREA IN THE NORTHWESTERN CORNER OF COLUSA COUNTY WHICH HAD NOT PREVIOUSLY BEEN MAPPED.

(3) DUE TO THE INCORPORATION OF AN UPDATED DIGITAL SOIL SURVEY DATA DURING THIS UPDATE, ACREAGES FOR FARMLAND, GRAZING AND OTHER LAND USE CATEGORIES MAY DIFFER FROM THOSE PUBLISHED IN THE 2000-2002 CALIFORNIA FARMLAND CONVERSION REPORT.

(4) WATER AREA INCREASED IN 2006 DUE TO IMPROVED DELINEATION OF FUNKS RESERVOIR, WHICH HAD INITIALLY BEEN MAPPED BEFORE IT WAS FULL.
SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION, 2010

IMPORTANT FARMLANDS CONVERSION

While farmland has been converted for urban land uses, such as residential and commercial developments, FMMP field reports have also identified significant amounts of important farmlands converted to resource conservation uses. Residential developments in the vicinity of Colusa, Williams, and Arbuckle and expansion of the Colusa Industrial Park south of Colusa resulted in the conversion of farmlands to urban and built up land uses. The construction of parking lots, ball fields, and other community-serving improvements in Arbuckle and Princeton have also converted small amounts of farmland to urban and built up land uses. Farmlands that lay fallow for three or more FMMP cycles were converted to grazing lands. Conversely, development of irrigated orchards in several areas resulted in the conversion of grazing lands to irrigated farmlands. Irrigated farmland going to wetlands accounted for the conversion of 2,755 acres of farmland to other lands from 2002 to 2006.

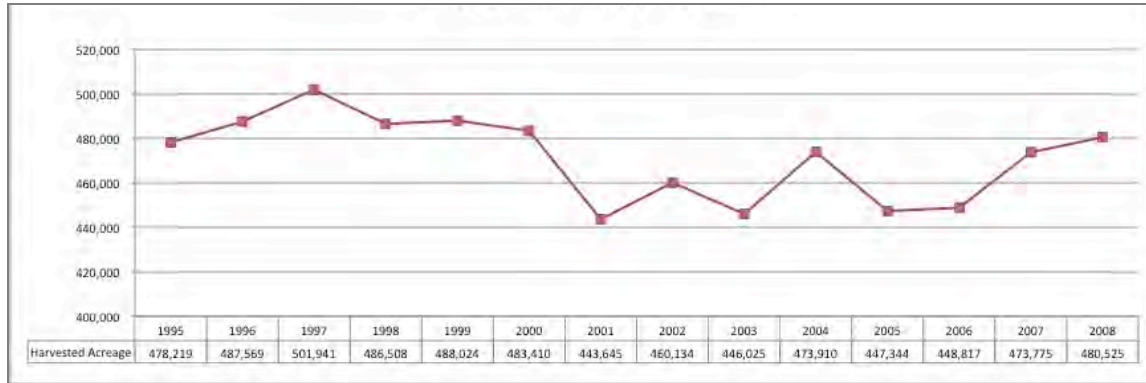
Harvested Acreage

Chart 3.2-1 illustrates harvested acreage in Colusa County from 1995 to 2008. During this time period, the most acreage harvested was 501,941 acres in 1997 and the least acreage harvested was 443,645

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in 2001. The annual average of harvested acreage is 471,418. While there have been fluctuations in harvested acreage, the amount has stayed consistently above 440,000 acres during the previous two decades.

Chart 3.2-1: Harvested Acreage (1995 to 2008)



FARMLAND PRESERVATION

Approximately 317,796 acres, or about 55.6 percent of the County's assessed agricultural land, is under some form of Williamson Act contract with Colusa County. The Williamson Act is described in greater detail under the Regulatory Framework section of this chapter. Of this amount under contract, 144,487 acres or about 43 percent is designated Prime Agriculture land. Prime agricultural land is considered the most valuable and productive farmland available. It must meet certain soil conditions defined by the United States Department of Agriculture and mapped by the State of California. Figure 3.2-2 depicts the distribution of Williamson Act Contract lands in the County. This prime agricultural land is located primarily in the eastern portions of the County within the Sacramento River Hydrologic Region. One parcel of 22.8 acres is located in the City of Williams; the remaining parcels are in the unincorporated area of Colusa County. Of the parcels under Williamson Act contract, 41 parcels representing 4,157 acres are set to expire by 2030.

Farm Characteristics

The U.S. Census of Agriculture is a nationwide survey that is conducted every five years and provides agricultural data at the county-level. The census provides a comprehensive summary of agricultural activity that includes the number of farms by size and type, inventory and values for crops and livestock, operator characteristics and much more. Table 3.2-2 summarizes primary characteristics of farms in Colusa County.

The number of farms in Colusa County decreased by 22, or 3 percent, from 1992 to 2007. During this same time period, the amount of land in farms increased by 23,856 acres, or 5 percent. The U.S. Census of Agriculture began to identify the median farm size in 1997. Median farm sizes in Colusa County fluctuated from 211 acres in 1997, up to 280 acres in 2002, then decreased to 190 acres in 2007. While the majority of farm operators farm as their principal occupation, the ratio has decreased from 68 percent (569 farmers as principal occupation) in 1992 to 57 percent (464 farmers as principal occupation) in 2007.

TABLE 3.2-2: FARM CHARACTERISTICS

	1992	1997	2002	2007	CHANGE 2007 - 1992	
					NUMBER	PERCENT
Farms	836	810	821	814	-22	-3%
Land in Farms	450,236	430,958	485,392	474,092	23,856	5%
Median Size of Farm (Acres)	--	211	280	190	-21	-10%
Operators by Principal Occupation						
Farming	569	526	589	464	-105	-18%
Other	267	284	232	350	83	31%

SOURCE: US DEPARTMENT OF AGRICULTURE, 1992, 1997, 2002, AND 2007

FARMING AND THE ECONOMY

Based on the U.S. Census of Agriculture, the average value of farmland in Colusa County in 2007 was \$3,979 per acre. The County experienced an increase in agricultural land growth of over 9 percent between 1990 and 2008 from 396,000 acres to 434,400 acres. Recognizing the value of agriculture in the County, the State of California Williamson Act and Super Williamson Act Agricultural Preservation programs were implemented by the County. This program offers reduced property taxes and subvention payments to property owners who maintain their properties in agricultural production.

Farm Income

While there were over 800 farms in Colusa County in 2007, 205 farms (25 percent) appear to not farm as a primary or significant source of income, with \$10,000 or less in agricultural sales. Another 17 percent of farms had sales in the range of \$10,000 to \$49,999. More than one out of five farms in Colusa County had \$500,000 or more in sales, while 14 percent of farms experienced sales from \$250,000 to \$499,999 and 16 percent had sales in the \$100,000 to \$249,000 range, as shown in Table 3.2-3.

TABLE 3.2-3: FARMS BY VOLUME OF SALES (2007)

VOLUME OF SALES	NUMBER	PERCENT
Under \$1,000	124	15%
\$1,000 - \$4,999	60	7%
\$5,000 - \$9,999	21	3%
\$10,000 - \$19,999	46	6%
\$20,000 - \$39,999	60	7%
\$40,000 - \$49,999	30	4%
\$50,000 - \$99,999	57	7%
\$100,000 - \$249,999	131	16%
\$250,000 - \$499,999	111	14%
\$500,000 or more	174	21%

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, 2009

Crop and Livestock Valuation

In 2008, the County's total crop production value was estimated to be over \$662 million, a 69% increase over 2007's value of about \$484 million. Rice crops alone were responsible for an increase of \$149 million from 2007 to 2008; this increase is mainly attributed to the change in the value of rice from \$305 to \$535 per ton rather than being attributed to a significant increase in production. While there have been some year to year fluctuations, most notably a decrease of \$68 million from 2000 to 2001, overall agricultural valuation has been increasing over the past two decades, as shown in Table 3.2-5.

TABLE 3.2-4: HISTORIC CROP AND LIVESTOCK VALUATION		
<i>YEAR</i>	<i>VALUATION</i>	<i>GROWTH RATE</i>
1990	\$207,430,100	
1995	\$304,900,000	47%
2000	\$345,906,000	13%
2001	\$277,826,000	-20%
2002	\$290,264,000	4%
2003	\$361,573,000	25%
2004	\$351,604,000	-3%
2005	\$392,677,000	12%
2006	\$422,729,000	8%
2007	\$484,525,000	15%
2008	\$662,644,000	37%

SOURCE: COLUSA COUNTY DEPARTMENT OF AGRICULTURE, 2009

LEADING AGRICULTURAL COMMODITIES

This impressive crop valuation consists of a wide variety of agricultural commodities (see Table 3.2-6). Field crops are responsible for 59 percent of agriculture sold, followed fruit and nut crops at 24 percent. Looking at individual crops, rice dominates the acreage planted (31 percent) as well as total sales (51 percent), followed by almonds which account for 7 percent of acreage and 21 percent of sales (meat and hulls). The number of acres devoted to rice farming increased by almost 80 percent between 1990 and 2008 from 83,800 to 150,200 acres. The per acre unit production of rice also increased by over 150 percent during this same period making rice the most profitable crop in the County. Note that higher market prices for rice over the last year (2008) has significantly increased overall crop value. Rice has become more of a specialty crop for farmers as they evaluate environmental conditions of the farm, such as location and soil and world demand market conditions in determining which varieties of rice to grow. Table 3.2-5 below provides a distribution of the agricultural commodities with the largest acreages and values in Colusa County.

TABLE 3.2-5: DISTRIBUTION OF AGRICULTURAL COMMODITIES BY VALUE

Description	Total Unit	Acreage	%	Total Value	%
Agricultural Crops					
Vegetable Crops		14,075	3%	\$47,353,000	7%
<i>Tomatoes - Processing</i>	<i>616,148 tons</i>	<i>13,940</i>	<i>3%</i>	<i>\$43,993,000</i>	<i>7%</i>
Fruit and Nut Crops		45,140	9%	\$162,182,000	24%
<i>Almonds - Meats</i>	<i>44,075 tons</i>	<i>35,260</i>	<i>7%</i>	<i>\$132,225,000</i>	<i>20%</i>
<i>Almonds – Hulls</i>	<i>55,080 tons</i>		<i>0%</i>	<i>\$4,957,000</i>	<i>1%</i>
<i>Walnuts</i>	<i>8,925 tons</i>	<i>5,100</i>	<i>1%</i>	<i>\$10,710,000</i>	<i>2%</i>
Field Crops		399,500	83%	\$389,365,000	59%
<i>Beans - Dry</i>	<i>3,951 tons</i>	<i>4,390</i>	<i>1%</i>	<i>\$3,991,000</i>	<i>1%</i>
<i>Corn - Grain</i>	<i>16,775 tons</i>	<i>2,750</i>	<i>1%</i>	<i>\$2,852,000</i>	<i>0%</i>
<i>Hay-Alfalfa</i>	<i>86,580 tons</i>	<i>11,100</i>	<i>2%</i>	<i>\$15,152,000</i>	<i>2%</i>
<i>Rice</i>	<i>630,840 tons</i>	<i>150,200</i>	<i>31%</i>	<i>\$337,499,000</i>	<i>51%</i>
<i>Wheat</i>	<i>76,720 tons</i>	<i>27,400</i>	<i>6%</i>	<i>\$17,646,000</i>	<i>3%</i>
Seed Crops		12,720	3%	\$29,124,000	4%
<i>Rice - Seed</i>	<i>36,036 tons</i>	<i>8,580</i>	<i>2%</i>	<i>\$24,504,000</i>	<i>4%</i>
<i>Sunflowers</i>	<i>1,175 tons</i>	<i>1,780</i>	<i>0%</i>	<i>\$2,632,000</i>	<i>0%</i>
Non-Certified Seed Crops		9,090	2%	\$18,069,000	3%
<i>Cucumbers</i>	<i>521,100 lb</i>	<i>1,930</i>	<i>0%</i>	<i>\$6,383,000</i>	<i>1%</i>
<i>Squash</i>	<i>360,450 lb</i>	<i>890</i>	<i>0%</i>	<i>\$2,667,000</i>	<i>0%</i>
<i>Watermelon</i>	<i>572,000 lb</i>	<i>2,200</i>	<i>0%</i>	<i>\$3,003,000</i>	<i>0%</i>
Subtotal – All Crops	NA	480,525	100%	\$646,093,000	98%
Livestock and Other Commodities					
Apiary	10,000 lb honey /65,000 colonies	NA	NA	\$7,931,000	1%
Livestock	22,600 head	NA	NA	\$8,598,000	1%
Livestock Products	NA	NA	NA	\$22,000	0%
Subtotal				\$16,551,000	2%
TOTAL				\$662,644,000	100%

SOURCE: COLUSA COUNTY DEPARTMENT OF AGRICULTURE, 2008

In terms of area covered by other agricultural types, fruit and nut orchards occupy over 10 percent of the agricultural land in the County accounting for over 40,000 acres. Most of the almond crop is grown south and southwest of Arbuckle. Prunes and walnuts are grown along the Sacramento River and in limited areas around Williams, Arbuckle and limited portions in the western foothills of the County. With the additional water supply provided to the western side of the valley by the Tehama-Colusa Canal, acreage in the County devoted to these orchards has almost doubled since 1985. Although processed tomatoes continue to be a top valued crop, the County has actually experienced a reduction in acreage and value of this crop over the last twenty years. Wheat ranks third in acreage planted in the County and has increased in both area and value over this same period. It is grown on the higher elevation portions of the valley and in the dry upland valleys. Other important field crops include corn, dry beans, alfalfa and safflower. Vine and seed crops, particularly wine grapes continue to contribute to Colusa's economy.

3.2 AGRICULTURAL AND TIMBER RESOURCES

Livestock and apiary commodities represent about 2 percent of the County's agricultural income. Although livestock plays an important role in the County's foothill and mountain area economies, utilizing undeveloped acreage where most of the livestock is raised, it has declined over the last twenty years in terms of its proportion to the County's gross agricultural production and value.

TIMBER RESOURCES

Colusa County has approximately 23,000 acres of timber, which represents approximately 0.1 percent of the state's timber resources, according to the California Department of Fire and Forestry's 1996 assessment, which is most recent assessment with timber data available for Colusa County. Limited data is available regarding the timber resources in the County. The majority of timber lands, 21,000 acres, are located on federal lands in the County and the remaining 2,000 acres are on privately held lands (CalFIRE, 2009). None of the timber lands are in a designated Timber Production Zone.

The County's forest resources are primarily composed of the western oak group (84 percent), followed by other western softwoods, California mixed conifer, and tanoak/laurel groups, as shown in Table 3.2-6. Lands in the California mixed conifer and other western softwoods group are the most likely to provide timber resources.

TABLE 3.2-6: FOREST LAND BY FOREST TYPE AND OWNERSHIP

	<i>WESTERN OAK GROUP</i>	<i>CALIFORNIA MIXED CONIFER GROUP</i>	<i>OTHER WESTERN SOFTWOODS GROUP</i>	<i>TANOAK/LAUREL GROUP</i>	<i>TOTAL</i>
Forest Service	43,875	1,641	11,195	6,114	62,825
Other Federal	16,296	--	9,412	--	25,707
Private	117,090	5,922	--	--	123,012
TOTAL	177,260	7,562	20,607	6,114	211,544

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, 2010

3.2.2 REGULATORY SETTING

FEDERAL

Farmland Protection Policy Act

The Natural Resources Conservation Service (NRCS), an agency within the U.S. Department of Agriculture, is responsible for implementation of the Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize federal programs' contribution to the conversion of farmland to nonagricultural uses by ensuring that federal programs are administered in a manner that is compatible to state, local, and private programs designed to protect farmland. The NRCS provides technical assistance to federal agencies, state and local governments, tribes, or nonprofit organizations that desire to develop farmland protection programs and policies. The NRCS summarizes FPPA implementation in an annual report to Congress.

Farm and Ranch Lands Protection Program

The NRCS administers the Farm and Ranch Lands Protection Program (FRPP), a voluntary program aimed at keeping productive farmland in agricultural uses. Under the FRPP, the NRCS provides matching funds to state, local, or tribal government entities and nonprofit organizations with existing farmland protection programs to purchase conservation easements. According to the 1996 Farm Bill, the goal of the program is to protect between 170,000 and 340,000 acres of farmland per year. Participating landowners agree not to convert the land to nonagricultural use and retain all rights to use the property for agriculture. A conservation plan must be developed for all lands enrolled based upon the standards contained in the NRCS Field Office Technical Guide. A minimum of 30 years is required for conservation easements and priority is given to applications with perpetual easements. The NRCS provides up to 50 percent of the fair market value of the easement being conserved (NRCS, 2004). To qualify for a conservation easement, farm or ranch land must meet several criteria. The land must be:

- Prime, Unique, or other productive soil, as defined by NRCS based on factors such as water moisture regimes, available water capacity, developed irrigation water supply, soil temperature range, acid-alkali balance, water table, soil sodium content, potential for flooding, erodibility, permeability rate, rock fragment content, and soil rooting depth;
- Included in a pending offer to be managed by a nonprofit organization, state, tribal, or local farmland protection program;
- Privately owned;
- Placed under a conservation plan;
- Large enough to sustain agricultural production;
- Accessible to markets for the crop that the land produces; and
- Surrounded by parcels of land that can support long-term agricultural production.

STATE

California Department of Conservation

The Department of Conservation (DOC) administers and supports a number of programs, including the Williamson Act, the California Farmland Conservancy Program (CFCP), the Williamson Act Easement Exchange Program (WAEPP), and the Farmland Mapping and Monitoring Program (FMMP). These programs are designed to preserve agricultural land and provide data on conversion of agricultural land to urban use. The DOC has authority for the approval of agreements entered into under the WAEPP. Key DOC tools available for land conservation planning are conservation grants, tax incentives to keep land in agriculture or open space, and farmland mapping and monitoring.

Williamson Act

The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965 to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to urban uses. In order to preserve these uses, the act established an agricultural preserve contract procedure by which any county or city within the state taxes landowners at a lower rate, using a scale based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. In return, the owners guarantee that these properties remain under agricultural production for a 10-year period. The contract is self-renewing; however, the landowner may notify the County at any time of the intent to withdraw the land from its preserve status. There are two means by which the landowner may withdraw the land from its contract preserve status. First, the landowner may seek to cancel the contract. This takes the land out of the contract quickly with a minimal waiting period but the landowner pays a statutory penalty to the State. Second, the landowner may notice a non-renewal or seek a partial non-renewal of the contract. Land withdrawal through the non-renewal process involves a 9 or 10-year period (depending on the timing of the notice) of tax adjustment to full market value before protected open space can be converted to urban uses. Consequently, land under a Williamson Act contract can be in either a renewal status or a non-renewal status. Lands with a non-renewal status indicate the owner has withdrawn from the Williamson Act contract and is waiting for a period of tax adjustment for the land to reach its full market value. Non-renewal lands are candidates for uses that were previously considered incompatible within the next 10 years or less, depending on when the notice of non-renewal was filed. Figure 3.2-2 identifies Williamson Act lands in Colusa County.

Williamson Act subvention payments to local government have been suspended for fiscal year 2009-10 due to the state's fiscal constraints. While subvention payments have been customary for many years, these payments have never been guaranteed. The Williamson Act contracts between landowners and local governments are important to the state's agricultural production and remain in force, regardless of the availability of subvention payments.

Farmland Security Zones

A Farmland Security Zone is an area created within an agricultural preserve by a board of supervisors (board) upon request by a landowner or group of landowners. An agricultural preserve defines the boundary of an area within which a city or county will enter into contracts with landowners. The boundary is designated by resolution of the board or city council having jurisdiction. Agricultural preserves must generally be at least 100 acres in size. Farmland Security Zone contracts offer landowners greater property tax reduction. Land restricted by a Farmland Security Zone contract is valued for property assessment purposes at 65% of its Williamson Act valuation or 65% of its Proposition 13 valuation, whichever is lower.

Forest Practices Rules

The California Department of Forestry and Fire Protection (CalFire) implement the laws that regulate timber harvesting on privately-owned lands. These laws are contained in the Z'berg- Nejedly Forest Practice Act of 1973 which established a set of rules known as the Forest Practice Rules (FPRs) to be applied to forest management related activities (i.e., timber harvests, timberland conversions, fire

hazard removal, etc.). They are intended to ensure that timber harvesting is conducted in a manner that will preserve and protect fish, wildlife, forests, and streams. Under the Forest Practices Act, a Timber Harvesting Plan (THP) is submitted to CalFire by the landowner outlining what timber is proposed to be harvested, harvesting method, and the steps that will be taken to prevent damage to the environment. If the landowner intends to convert timberland to non-timberland uses, such as a winery or vineyard, a Timberland Conversion Permit (TCP) is required in addition to the THP. It is CalFire's intent that a THP will not be approved which fails to adopt feasible mitigation measures or alternatives from the range of measures set out or provided for in the Forest Practice Rules, which would substantially lessen or avoid significant adverse environmental impacts resulting from timber harvest activities. THPs are required to be prepared by Registered Professional Foresters (RPFs) who are licensed to prepare these plans (CalFire, 2007). For projects involving TCPs, CalFire acts as lead agency under CEQA, and the County acts as a responsible agency.

LOCAL

Right-to-Farm Ordinance

Chapter 34 of the County Code contains what is commonly called a "Right-to-Farm" ordinance. The ordinance is intended to preserve and protect lands zoned for agricultural use, to support and encourage continued agricultural operations in the County, and to forewarn prospective purchasers and users of property near or adjacent to agricultural operations of the sounds, odors, dust and chemicals that may accompany agricultural operations. It further intends to limit, by means of communication, nuisance litigation regarding agriculture or affecting agriculture.

The ordinance requires sellers of property in Colusa County to disclose that the property is located in a rural-agricultural county and that the property may be subject to inconvenience or discomforts associated with agricultural practices. The disclosure must also state that the County sets agricultural as a priority use of lands and that users of such property should be prepared to accept such inconvenience or discomfort as normal and necessary to farm operations. Building permits include a similar disclosure statement. Chapter 34 created the Colusa County Good Neighbor Committee to mediate disputes between agricultural and nonagricultural interests regarding land use to avoid or reduce the filing of nuisance suits.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the agricultural and forestry resources if it will:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmlands), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;

3.2 AGRICULTURAL AND TIMBER RESOURCES

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (significant and unavoidable)

While the 2030 General Plan would provide for continued agricultural uses on 551,741 acres of agricultural land, through designation of such lands for agricultural, open space, resource conservation, or other uses compatible with long-term agricultural production, implementation of the 2030 General Plan has the potential to directly and indirectly result in the conversion of farmlands, including important farmlands, to nonagricultural uses. Approximately 6,850 acres of farmland, including 2,539 acres of prime farmlands and 166 acres of farmland of statewide importance, would be designated to future development and urbanization through the Parks and Recreation, Commercial, Mixed Use, Industrial, Public/Semi-Public Services, Rural Residential, Urban Residential, Rural Service Center, and Urban Reserve area land use designations. Table 3.2-7 summarizes the potential for direct conversion of farmlands to urban or other uses.

Indirect factors, such as changes in property value, conversion of nearby lands, extension of services, and changes in crop value, can also pressure farmlands to convert to non-farm uses. One of the guiding principles of the 2030 General Plan is to support the County's agricultural economy. The 2030 General Plan includes measures to maintain and enhance the County's agricultural economy, through allowing a broader range of agricultural uses and encouraging agricultural support uses, such as packing, distributing, and processing, to encourage increased agricultural production. As described below, the 2030 General Plan includes policies and actions that limit extension of services in agricultural areas, reduce conflicts with agricultural uses, and promote a broad array of agricultural and supportive uses, to ensure that lands designated for agricultural use are not pressured to convert to non-agricultural use. Further, the 2030 General Plan only designates lands for urban uses within or adjacent to established communities and also allows industrial uses near major intersections and transportation routes. The 2030 General Plan would not create "islands" of urban uses in agricultural areas, but rather will ensure the compact, logical extension of existing communities. While some agricultural lands would be removed from production, the 2030 General Plan includes many policies and actions to support agricultural uses and may encourage the conversion of grazing lands to important farmland categories.

TABLE 3.2-7: POTENTIAL FARMLAND CONVERSION

<i>FARMLAND TYPE</i>	<i>EXISTING ACREAGE</i>	<i>ACRES DESIGNATED FOR FUTURE URBANIZATION/NON-AGRICULTURAL USES</i>	<i>ACRES DESIGNATED TO ACCOMMODATE AGRICULTURAL USES</i>
Prime Farmland	200,182	2,539	1.3%
Farmland of Statewide Importance	2,170	166	7.6%
Unique Farmland	123,318	2,711	2.2%
Farmland of Local Importance	232,921	1,434	0.6%
Important Farmland Total	558,591	6,850	1.2%

SOURCE: CA DEPARTMENT OF CONSERVATION, FARMLAND MAPPING AND MONITORING PROGRAM, 2010; DE NOVO PLANNING GROUP, 2011

The 2030 General Plan is a long range planning document, therefore future development, infrastructure, and other projects have not been designed and the precise location and development footprint has not yet been determined. Further, Table 3.2-7 identifies the total acreage of agricultural lands that may be developed under the 2030 General Plan. However, the rate of development is not anticipated to result in urbanization or conversion of all of these lands during the planning period. Many of these lands were designated for potential urbanization in the 1989 General Plan (see Chapter 5.0, Alternatives) and, despite urban designations, have remained agricultural. Based on historical rates of growth and the land use designations included in the 2030 General Plan, it is anticipated that only 10 to 13 percent, or approximately 685 to 890 total acres of important farmlands, would convert to non-farmland uses during the planning period. Thus, it is anticipated that the 2030 General Plan could result in the conversion of up to 890 acres (0.15 percent) of the County’s important farmlands, during the planning period.

Since the 2030 General Plan is a long-range document that does not propose development, but rather identifies where development may occur, it cannot be identified with any certainty which parcels or areas will develop first, other than to identify that such development would occur within or adjacent to existing communities. It cannot be determined which agricultural lands may be taken out of production nor can it be determined which grazing or other lands may be converted to active agricultural use and potentially become important farmlands during the planning period. Therefore, it would be speculative to try and determine the fiscal effects of the General Plan on the agricultural economy other than to note that the intent of the 2030 General Plan is to foster, support, and enhance the County’s agricultural base.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County’s General Plan, Zoning Ordinance, and other regulations, as well as analyzed for potential environmental impacts consistent with the requirements of CEQA. The 2030 General Plan includes policies and actions to protect and preserve farmland, as well as to reduce potential impacts to agricultural lands. Implementation of the following policies and action items reduce impacts to agricultural resources by managing the pace and location of growth, protecting agricultural lands, buffering agricultural uses from urban uses, requiring that impacts to agricultural lands are minimized, and supporting a broad range of agricultural uses to ensure an on-going demand for farmed and agricultural lands. While conformance with the proposed policies, and actions from the 2030 General Plan would lessen the impact from conversion of the agricultural

3.2 AGRICULTURAL AND TIMBER RESOURCES

resources to some extent, the impact would remain significant. As such, the proposed project would also have a **significant and unavoidable** impact on the conversion of farmlands, including important farmlands.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy AG 1-2: Lands designated for agricultural uses shall remain designated for agriculture and not be rezoned or redesignated to an urban use unless the following criteria are met:

- a. The lot(s) for which conversion is requested is adjacent to agriculture or agricultural support uses (e.g. receiving plants, hulling plants, warehousing, trucking, distribution, and other related activities.) on no more than two sides of the lot(s) or less than 50 percent of the perimeter of the lot(s) proposed for conversion.*
- b. The conversion will not be detrimental to existing agricultural operations.*
- c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of a designated urban area.*
- d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of the conversion lands from nuisances associated with typical agricultural practices.*
- e. No feasible alternative location (e.g., non-agricultural lands or less productive agricultural lands) exists.*
- f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding agricultural lands.*

Policy AG 1-4: Maintain agricultural parcel sizes that are large enough to sustain agricultural activities. The following minimum lot sizes shall apply to agricultural lands: Agricultural General- 40 acres, Agricultural Upland- 80 acres, and Agricultural Transition - 10 acres.

Policy AG 1-7: Work with the Local Agency Formation Commission (LAFCO) on issues of mutual concern including the conservation of agricultural land through consistent use of LAFCO policies, particularly those related to conversion of agricultural lands and establishment of adequate buffers between agricultural and non-agricultural uses, and the designation of reasonable and logical Sphere of Influence (SOI) boundaries for cities and service districts.

Policy AG 1-8: Protect agricultural lands from urban encroachment by limiting the extension of urban service facilities and infrastructure, particularly public water and sewer.

Policy AG 1-9: Encourage the conservation of agricultural lands using available programs that provide benefit to the County and/or farmers.

Policy AG 1-10: Maintain clearly designated locations for future growth around existing communities through application of the Urban Reserve Area (URA).

Policy AG 1-11: Require the use of buffers such as greenbelts, drainage features, parks or other improved and maintained features, to separate residential and other sensitive land uses, such as schools and hospitals, from agricultural lands and agricultural operations. Lands designated

Agricultural Transition are considered an appropriate buffer between urban or sensitive land uses and agricultural lands designated Agricultural General and Agricultural Upland.

Policy AG 1-12: Agricultural uses shall continue to be protected through on-going adherence to and implementation of the County's right to farm ordinance (Colusa County Code Chapter 34, Farming Practices).

Policy AG 1-13: Urban development shall not adversely impact the financial sustainability of agricultural operations.

Policy AG 1-14: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless the following conditions are met:

- a. The resource conservation activities involve active and on-going agricultural activities on the majority of the site.*
- b. The resource conservation activities are compatible with agricultural activities on the site and existing or potential agricultural activities in the vicinity.*
- c. There would not be a concentration of resource conservation lands in the immediate area.*

If the above conditions are met, the resource conservation activities shall require a Conditional Use Permit.

Policy AG 1-15: Habitat management without active and ongoing agricultural activities is not considered an agricultural use, and shall require a General Plan Amendment to designate such lands Resource Conservation (RC).

Policy AG 2-2: Visitor-serving uses that support and are incidental to agricultural production, such as tasting rooms, including sales and promotion of products grown or processed in the County, educational activities and tours, incidental sales of items related to local area agricultural products, promotional events, and farm homestays, which allow visitors to visit a farm in the form of a vacation, that support and are secondary and incidental to local agricultural production, shall be allowed on agricultural lands provided the following findings are made:

- a. The use promotes and markets only agricultural products grown or processed in the local area.*
- b. The use is compatible with and secondary and incidental to agricultural production activities in the area.*
- c. The use will not require the extension of sewer and water service.*
- d. The use is compatible with existing uses in the area.*
- e. The use will not adversely affect agricultural production in the area.*
- f. The use will not result in significant adverse traffic or air quality impacts.*
- g. The use will not be detrimental to the rural character of the area.*

Policy AG 2-3: Low-intensity recreational uses may be permitted on agricultural lands as long as they do not interfere with the principal use of the land for agricultural purposes. Examples include hunting, fishing, target shooting, horseback riding, hiking and exhibitions of working farms or ranches.

Policy AG 2-4: The exploration and extraction of oil, gas and other mineral resources may be allowed on agricultural lands, provided the activity is conducted in a way that minimizes interference with agricultural operations and does not result in a permanent loss of the agricultural viability of the land.

Policy AG 2-6: Where existing agricultural and proposed urban uses are competing for the same water supply, priority should be given to agricultural uses.

Policy LU 2-5: Require lands designated Agriculture General, Agriculture Transition or Agriculture Upland to remain in agricultural use, including businesses or uses that directly support County agricultural activities, for at least the duration of the planning period.

Policy LU 2-6: Discourage the division of land in agricultural areas if the division is not for the purpose of farming or other agricultural activities or if the division precludes the future opportunity to farm the land.

Actions

Action AG 1-A: Monitor the conversion of agricultural lands (AG, AU, and AT) located outside of urban and urban reserve areas to non-agricultural uses. If agricultural land conversion rates increase significantly, the Board of Supervisors shall consider the adoption of a farmland conversion mitigation program. If a farmland conversion mitigation program is developed, the development of agriculture-supporting uses should be exempt from mitigation and all mitigation fees should be used to preserve farmland within Colusa County.

Action AG 1-D: Amend the zoning ordinance to include specific agricultural buffer requirements for residential and sensitive land uses (such as schools, day care facilities, and medical facilities) that are proposed within 500 feet of agricultural lands in order to protect existing agricultural operations from encroachment by incompatible uses. Buffers shall generally be defined as a physical separation of 100 to 200 feet and/or may be, or include, a topographic feature, roadway, bike/pedestrian path, a substantial tree stand, a maintained greenbelt, water course or similar feature. In some circumstances a landscaped berm may provide the buffer. The buffer shall occur on the parcel for which a permit is sought and shall favor protection of the maximum amount of agricultural land.

Action AG 1-E: Amend the zoning ordinance to:

- 1. Identify habitat management activities allowed on lands designated for agricultural use. Allowable habitat management activities may include the preservation of foraging habitat for species on lands that are actively farmed. Such habitat management activities shall not preclude ongoing viable farming of the land.*
- 2. Create specific standards to be included in Conditional Use Permits issued for habitat management plans and resource conservation activities adjacent to agricultural operations in order to ensure that agricultural operations are not adversely impacted. Such measures may include:*
 - Setbacks;*
 - Active pest management;*
 - Barrier fencing; and*
 - Other measures deemed appropriate by the County.*

MITIGATION MEASURES

In preparing the General Plan Update, the County considered including a program to require development projects that would convert important farmlands to purchase conservation easements on existing farmland in Colusa County that was not designated for future urbanization. While this approach would reduce the potential impact to important farmlands, a net loss of farmland would remain and the farmland that would be conserved would be farmland that was not planned for conversion. Upon examination of this type of program, it was determined that there would not be a net benefit to the County as the General Plan clearly establishes important farmlands to be preserved. Policy LU-2 requires lands that are designated for agricultural uses to remain agricultural for the duration of the planning period. Thus, Policy LU-2 serves to effectively conserve 551,741 acres of agricultural lands for the duration of the planning period. Further, Action AG 1-A requires the County to monitor conversion of agricultural lands located outside of urban and urban reserve areas and requires the County to consider adoption of a farmland conservation program if agricultural land conversion rates increase significantly. However, there is still the potential for the net reduction in farmland and the impact would remain **significant and unavoidable**.

Impact 3.2-2: Conflict with Existing Farmlands, Agricultural Zoning, or Williamson Act Contracts (less than significant)

The 2030 General Plan would provide for continued agricultural uses on the vast majority of agricultural land in Colusa County and includes policies to support the continued agricultural use of lands within the County. While the 2030 General Plan provides for the future re-zoning of agricultural lands to non-agricultural uses, as set forth in the Land Use Element, Agricultural Element, and on the Land Use Map, the 2030 General Plan includes measures to support continued agricultural uses on land and to reduce conflicts between agricultural and non-agricultural uses.

The 2030 General Plan would designate 825 acres of land with Williamson Act contracts to allow future urban development of the lands. These lands would be designated as follows: 528 acres for Industrial, 1.15 acres as Rural Service Center, and 296 acres as Urban Reserve Area. While these uses could occur at full buildout of the 2030 General Plan, it is anticipated that a lesser amount would be developed during the planning period. Further, the 296 acres designated Urban Reserve area would only be developed at such time that other lands in the community that were designated for urbanization had been developed. The 2030 General Plan has been developed to not conflict with the Williamson Act, and would allow continued farming under the Williamson Act contracts until such time that the property owner decides to end the Williamson Act contract, whether through filing for non-renewal or cancellation.

The 2030 General Plan has been prepared with the principle of preserving the County's agricultural heritage and ensuring that future development does not interfere with continued agricultural activities on farmland and other agricultural lands. As identified below, the 2030 General Plan includes a number of policies to reduce conflicts with agricultural uses, including lands with a Williamson Act contract. Policy AG 1-2 requires lands designated for agricultural uses to not be rezoned or designated to agricultural uses unless a set of specific standards is met, including the requirement that the conversion not be detrimental to existing agricultural operations. Policies AG 1-7, 1-8, and 1-11 and

3.2 AGRICULTURAL AND TIMBER RESOURCES

Action AG 1-D protect agricultural lands from encroachment of urban uses through buffers and limiting the extension of urban services. Policy AG 1-12 ensure that agricultural uses continue to be protected through the County's Right-to-Farm Ordinance, which reduces the potential for agricultural uses to conflict with nearby non-agricultural uses and will ensure that future development and uses allowed under the 2030 General Plan do not conflict with existing agricultural zoning, Williamson Act contracts, or existing agricultural uses. Policies AG-14 and AG-15 protect agricultural uses by ensuring that resource and habitat conservation activities do not result in nuisances to or conflicts with agricultural activities. The Agricultural Element includes a range of policies that would allow agricultural support uses, low impact recreational uses, and mineral resource extraction activities on lands designated and zoned for agricultural uses provided that such uses do not conflict with agricultural operations.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County's General Plan, Zoning Ordinance, and other regulations, as well as analyzed for potential environmental impacts consistent with the requirements of CEQA. The 2030 General Plan includes policies and actions to reduce conflicts between agricultural uses and non-agricultural uses, as well as to reduce potential impacts to agricultural lands. Implementation of the policies and actions in the General Plan would ensure that conflicts with lands zoned for agricultural use and lands under a Williamson Act contract are reduced. Implementation of the Right-to-Farm Ordinance would ensure that development under the General Plan would not result in nuisance conditions or land use conflicts between agricultural and non-agricultural uses. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy AG 1-2: Lands designated for agricultural uses shall remain designated for agriculture and not be rezoned or redesignated to an urban use unless the following criteria are met:

- a. The lot(s) for which conversion is requested is adjacent to agriculture or agricultural support uses (e.g. receiving plants, hulling plants, warehousing, trucking, distribution, and other related activities.) on no more than two sides of the lot(s) or less than 50 percent of the perimeter of the lot(s) proposed for conversion.*
- b. The conversion will not be detrimental to existing agricultural operations.*
- c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of a designated urban area.*
- d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of the conversion lands from nuisances associated with typical agricultural practices.*
- e. No feasible alternative location (e.g., non-agricultural lands or less productive agricultural lands) exists.*
- f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding agricultural lands.*

Policy AG 1-4: Maintain agricultural parcel sizes that are large enough to sustain agricultural activities. The following minimum lot sizes shall apply to agricultural lands: Agricultural General- 40 acres, Agricultural Upland- 80 acres, and Agricultural Transition - 10 acres.

Policy AG 1-7: Work with the Local Agency Formation Commission (LAFCO) on issues of mutual concern including the conservation of agricultural land through consistent use of LAFCO policies, particularly those related to conversion of agricultural lands and establishment of adequate buffers between agricultural and non-agricultural uses, and the designation of reasonable and logical Sphere of Influence (SOI) boundaries for cities and service districts.

Policy AG 1-8: Protect agricultural lands from urban encroachment by limiting the extension of urban service facilities and infrastructure, particularly public water and sewer.

Policy AG 1-9: Encourage the conservation of agricultural lands using available programs that provide benefit to the County and/or farmers.

Policy AG 1-10: Maintain clearly designated locations for future growth around existing communities through application of the Urban Reserve Area (URA).

Policy AG 1-11: Require the use of buffers such as greenbelts, drainage features, parks or other improved and maintained features, to separate residential and other sensitive land uses, such as schools and hospitals, from agricultural lands and agricultural operations. Lands designated Agricultural Transition are considered an appropriate buffer between urban or sensitive land uses and agricultural lands designated Agricultural General and Agricultural Upland.

Policy AG 1-12: Agricultural uses shall continue to be protected through on-going adherence to and implementation of the County's right to farm ordinance (Colusa County Code Chapter 34, Farming Practices).

Policy AG 1-13: Urban development shall not adversely impact the financial sustainability of agricultural operations.

Policy AG 1-14: Resource conservation activities such as habitat creation and active habitat or species management on lands designated for agricultural uses shall require a General Plan Amendment to Resource Conservation unless the following conditions are met:

- a. The resource conservation activities involve active and on-going agricultural activities on the majority of the site.*
- b. The resource conservation activities are compatible with agricultural activities on the site and existing or potential agricultural activities in the vicinity.*
- c. There would not be a concentration of resource conservation lands in the immediate area.*

If the above conditions are met, the resource conservation activities shall require a Conditional Use Permit.

Policy AG 1-15: Habitat management without active and ongoing agricultural activities is not considered an agricultural use, and shall require a General Plan Amendment to designate such lands Resource Conservation (RC).

Policy AG 2-2: Visitor-serving uses that support and are incidental to agricultural production, such as tasting rooms, including sales and promotion of products grown or processed in the County, educational activities and tours, incidental sales of items related to local area agricultural products, promotional events, and farm homestays, which allow visitors to visit a farm in the form of a vacation,

3.2 AGRICULTURAL AND TIMBER RESOURCES

that support and are secondary and incidental to local agricultural production, shall be allowed on agricultural lands provided the following findings are made:

- a. The use promotes and markets only agricultural products grown or processed in the local area.*
- b. The use is compatible with and secondary and incidental to agricultural production activities in the area.*
- c. The use will not require the extension of sewer and water service.*
- d. The use is compatible with existing uses in the area.*
- e. The use will not adversely affect agricultural production in the area.*
- f. The use will not result in significant adverse traffic or air quality impacts.*
- g. The use will not be detrimental to the rural character of the area.*

Policy AG 2-3: Low-intensity recreational uses may be permitted on agricultural lands as long as they do not interfere with the principal use of the land for agricultural purposes. Examples include hunting, fishing, target shooting, horseback riding, hiking and exhibitions of working farms or ranches.

Policy AG 2-4: The exploration and extraction of oil, gas and other mineral resources may be allowed on agricultural lands, provided the activity is conducted in a way that minimizes interference with agricultural operations and does not result in a permanent loss of the agricultural viability of the land.

Policy AG 2-6: Where existing agricultural and proposed urban uses are competing for the same water supply, priority should be given to agricultural uses.

Policy LU 2-5: Require lands designated Agriculture General, Agriculture Transition or Agriculture Upland to remain in agricultural use, including businesses or uses that directly support County agricultural activities, for at least the duration of the planning period.

Policy LU 2-6: Discourage the division of land in agricultural areas if the division is not for the purpose of farming or other agricultural activities or if the division precludes the future opportunity to farm the land.

Actions

Action AG 1-D: Amend the zoning ordinance to include specific agricultural buffer requirements for residential and sensitive land uses (such as schools, day care facilities, and medical facilities) that are proposed within 500 feet of agricultural lands in order to protect existing agricultural operations from encroachment by incompatible uses. Buffers shall generally be defined as a physical separation of 100 to 200 feet and/or may be, or include, a topographic feature, roadway, bike/pedestrian path, a substantial tree stand, a maintained greenbelt, water course or similar feature. In some circumstances a landscaped berm may provide the buffer. The buffer shall occur on the parcel for which a permit is sought and shall favor protection of the maximum amount of agricultural land.

Action AG 1-E: Amend the zoning ordinance to:

- 1. Identify habitat management activities allowed on lands designated for agricultural use. Allowable habitat management activities may include the preservation of foraging habitat for species on lands that are actively farmed. Such habitat management activities shall not preclude ongoing viable farming of the land.*

2. Create specific standards to be included in Conditional Use Permits issued for habitat management plans and resource conservation activities adjacent to agricultural operations in order to ensure that agricultural operations are not adversely impacted. Such measures may include:

- Setbacks;
- Active pest management;
- Barrier fencing; and
- Other measures deemed appropriate by the County.

Impact 3.2-3: Conflict with Existing Zoning of Forest or Timber Production (no impact)

There are no lands in the County that are currently zoned as forest land, timber, or timber production. Therefore, implementation of the 2030 General Plan would have **no impact** on existing zoning of forest or timberland.

Impact 3.2-4: Result in the Loss or Conversion of Forest Land (less than significant)

While there are no lands in the County that are zoned as forest land, timber, or timber production, a portion of the Mendocino National Forest is located in Colusa County. The 2030 General Plan has created a new land use designation, Forest Lands, that will be applied to lands within the Mendocino National Forest (see Policies LU 1-2 and LU 1-3 in the 2030 General Plan). The Forest Lands designation will only allow uses that are compatible with forest and timberland production activities, including timber production, forestry, natural wilderness, and other uses that are compatible with forest lands, including low impact recreational uses, agricultural uses, and very low density residential uses. By specifically designating lands within the Mendocino National Forest as Forest Lands and requiring development of zoning categories that would allow limited uses on these lands, the 2030 General Plan ensures that the Forest Lands will be appropriately conserved and that future uses on the lands would not result in a significant loss or conversion of forest or timberlands. Policies LU 3-39, 3-40, 3-41, and 3-42 and associated actions will guide future uses on forest lands to ensure that the forest is managed appropriately and that future uses do not conflict with the existing forest lands. Impacts from the loss or conversion of forest land are **less than significant** and no mitigation is necessary.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy LU 3-39: The Forest Lands designation shall be applied to lands within the Mendocino National Forest.

Policy LU 3-40: Encourage active public use of the Mendocino National Forest, through provision of access points and routes, directional signage, and a variety of recreational activities.

Policy LU 3-41: Encourage managed production and use of forest resources, including timber production and processing.

Policy LU 3-42: Support residential use of privately owned lands where there is adequate access, fire protection, water supply, and septic capability.

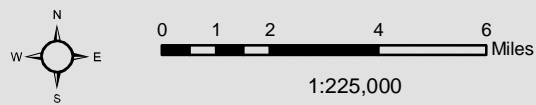
Actions

Action LU 3-I: Coordinate with the U.S. Forest Service to encourage increased public use of the Mendocino National Forest through planning for recreation uses, forest management, and residential uses.

Action LU 3-J: In conjunction with Action LU 3-E, revise the Zoning Ordinance to create a Forest Management and Recreation zone that accommodates a range of forest resource production (timber, mining, grazing, etc.) activities and recreation activities.

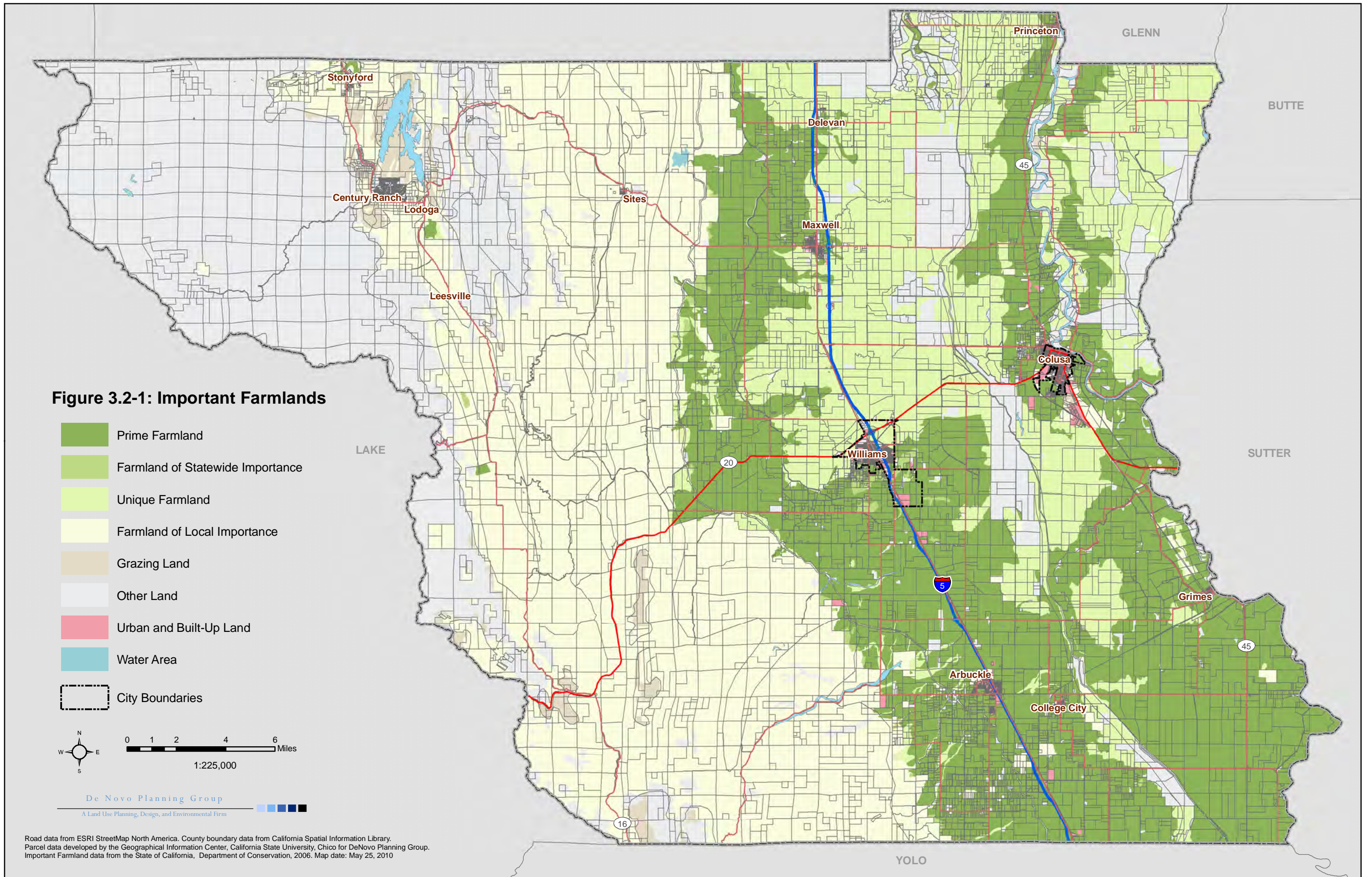
Figure 3.2-1: Important Farmlands

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Farmland of Local Importance
- Grazing Land
- Other Land
- Urban and Built-Up Land
- Water Area
- City Boundaries



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Road data from ESRI StreetMap North America. County boundary data from California Spatial Information Library. Parcel data developed by the Geographical Information Center, California State University, Chico for DeNovo Planning Group. Important Farmland data from the State of California, Department of Conservation, 2006. Map date: May 25, 2010



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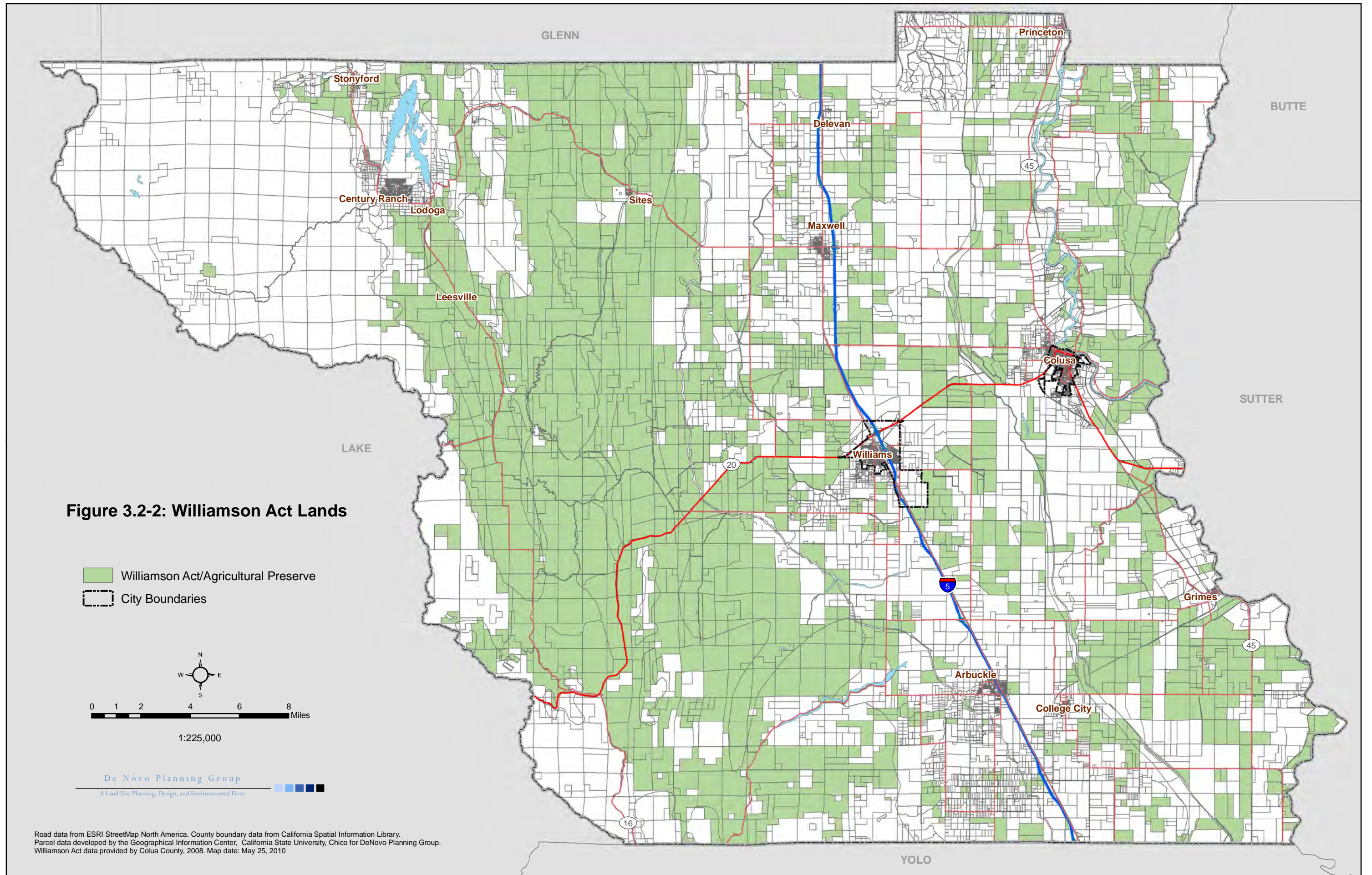


Figure 3.2-2: Williamson Act Lands

- Williamson Act/Agricultural Preserve
- City Boundaries



0 1 2 4 6 8 Miles

1:225,000

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Road data from ESRI StreetMap North America. County boundary data from California Spatial Information Library. Parcel data developed by the Geographical Information Center, California State University, Chico for DeNovo Planning Group. Williamson Act data provided by Colusa County, 2008. Map date: May 25, 2010

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This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from project implementation. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.3.1 EXISTING SETTING

SACRAMENTO VALLEY AIR BASIN

Colusa County is located within the Sacramento Valley Air Basin (SVAB). The SVAB is the northern half of California's Great Valley and is bordered on three sides (west, north, and east) by mountain ranges, with peaks in the eastern range above 9,000 feet. Figure 6.5-1 delineates the boundary of the SVAB. The SVAB is approximately 13,700 square miles and essentially a smooth valley floor with elevations ranging from 40 to 500 feet. The rolling valley is interrupted by the Sutter Buttes, an area of 80 square miles in northern Sutter County, which rise abruptly to more than 2,100 feet above the valley floor.

The SVAB consists of 13 counties and is split into two planning sections based on the degree of pollutant transport from one area to the other and the level of emissions within each area. The Colusa County area belongs to the Northern Sacramento Valley Air Basin (NSVAB), which is composed of the seven northern-most counties of the SVAB. These counties include Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba.

The NSVAB has been categorized as "moderately" non-attainment for ozone and particulate matter under the state standards. The air basin of the Sacramento Valley is about 200 miles long in a north-south direction, and has a maximum width of about 150 miles, although the width of the valley floor only averages about 50 miles.

Air Movement

The Sacramento Valley portion of the air basin forms a bowl, bounded on the west by the Coast Ranges, on the north by the Cascade Range, and on the east by the Sierra Nevada. These mountain ranges reach heights exceeding 7,000 feet above sea level. During summer, the wide, flat expanse of the Sacramento Valley provides an ideal environment for the formation of photochemical smog. Moreover, the prevailing winds in the Sacramento Valley blow from south to north, driven by the marine air traveling through the Carquinez Strait. These winds can transport pollutants from the broader Sacramento area and from the San Francisco Bay Area to the Northern Sacramento Valley Air Basin. The mountain ranges that surround the Northern Sacramento Valley Air Basin provide a physical barrier to continued movement of the air mass, significantly hindering the dispersal of pollutants.

Generally, the County experiences moderate to very poor capability to disperse pollutants nearly 80 percent of the time. This is, in large measure, due to the relatively stable atmosphere which acts to suppress vertical air movement. Extremely stable atmospheric conditions referred to as "inversions" act as barriers to pollutants. In valley locations under 1,000 ft, they create a "lid"

under which pollutants are trapped. Dust and other pollutants can become trapped within these inversion layers and will not disperse until atmospheric conditions become more unstable. This situation creates concentrations of pollutants at or near the ground surface which pose significant health risks for plants, animals, and people.

Inversions occur in the SVAB with great frequency in all seasons. The most stable inversions occur in late summer and fall. The summertime inversions are often the result of marine air pushing under an overlying warm air mass. These are termed “marine inversions” and are generally accompanied by brisk afternoon winds, which provide good air circulation.

In contrast, many autumn inversions are the result of warm air subsiding in a high-pressure cell where accompanying light winds do not provide adequate dispersion. Autumn inversions limit vertical mixing, creating a very stable layer of air with very light or calm winds. These inversions are usually present on clear cold nights during late fall and winter. In the morning, these ground based inversions are weakened and eventually eliminated by solar heating. As a result, they are strongest in the late night and early morning, when ground-level temperatures are coldest and solar radiation is low.

Seasonal Pollution Variations

Carbon monoxide, oxides of nitrogen, particulate matters, and lead particulate concentrations in the late fall and winter are highest when there is little interchange of air between the valley and the coast and when humidity is high following winter rains. This type of weather is associated with radiation fog, known as tule fog, when temperature inversions at ground level persist over the entire valley for several weeks and air movement is virtually absent.

Pollution potential in the Colusa County area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily very small particulates or PM₁₀) and ground-level ozone are of most concern to regional air quality officials.

Local carbon monoxide “hot spots” are important to a lesser extent. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the reaction of reactive organic gases (ROG) and nitrogen oxides (NO_x) (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in Colusa County during late spring through early fall, when weather conditions are conducive and emissions of the precursor pollutants are highest.

Surface-based inversions that form during late fall and winter nights cause localized air pollution problems (PM₁₀ and carbon monoxide) near the emission sources because of poor dispersion conditions. Emission sources are primarily from automobiles. Conditions are exacerbated during drought-year winters.

CRITERIA POLLUTANTS

The EPA uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

Ozone (O₃) is a photochemical oxidant and the major component of smog. While O₃ in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O₃ at ground level are a major health and environmental concern. O₃ is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O₃ levels occur typically during the warmer times of the year. Both VOCs and NO_x are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of O₃ causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O₃ not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O₃ for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

Nitrogen dioxide (NO₂) is a brownish, highly reactive gas that is present in all urban atmospheres. NO₂ can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O₃) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO₂ in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO_x). NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O₃. NO_x forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO₂) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO₂ is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic

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buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO₂ results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO₂ and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO₂) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

Respirable particulate matter (PM₁₀) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter in Colusa County is caused primarily by dust from grading and excavation activities, from agricultural uses (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM₁₀ causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter (PM_{2.5}) consists of small particles, which are less than 2.5 microns in size. Similar to PM₁₀, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM₁₀, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for PM_{2.5}.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also soils and damages materials, and is a major cause of visibility impairment.

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

ODORS

Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

NATURALLY OCCURRING ASBESTOS

The EPA Region 9 office is working in areas of California to address concerns about potential effects of naturally occurring asbestos. The term "asbestos" is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally Occurring Asbestos (NOA) is commonly associated with ultramafic rocks and serpentinite. Naturally occurring asbestos can take the form of long, thin, separable fibers. Natural weathering or human disturbance can break naturally occurring asbestos down to microscopic fibers, easily suspended in air. There is no health threat if asbestos fibers in soil remain undisturbed and do not become airborne. When inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos, a known carcinogen, causes cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function.

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Appendix D of the Colusa County APCD Rules and Regulations is entitled “Asbestos Airborne Toxic Control Measure for Asbestos Containing Serpentine.” Per Appendix D, the term asbestos is defined as follows:

"Asbestos" means asbestiforms of the following hydrated minerals; chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite--grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.

Ultramafic rocks, such as dunite, peridotite and pyroxenite, are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth's surface. The metamorphic rock serpentine is a common product of the alteration process. A variety of minerals may be present within the host rock, including chrysotile, tremolite and actinolite.

Chrysotile, which is also known as “white asbestos” and found in serpentine rocks, is probably the most common NOA. However, other types of asbestos, such as tremolite-actinolite, can also be found throughout California. Tremolite is most commonly associated with metamorphic formations containing dolomite and quartz. Tremolite tends to be whitish when magnesium-rich and trends towards dark green as iron increases. Actinolite, which can be found in metamorphic rocks rich in magnesium or iron, tends to be green to blackish-green.

In Colusa County, the boundary between the Coast Range and the Central Valley is the area of greatest NOA potential. The rocks at this boundary have been subjected to forces that are likely to have produced partial or entire metamorphosis into serpentine. This area of potential NOA generally extends north from SR 20 (along the Colusa/Lake County boundary) to the Colusa/Glenn County boundary (west of Lodoga and Stonyford). Thus, the majority of the lands with high NOA potential in Colusa County are under BLM and USFS jurisdiction.

SENSITIVE RECEPTORS

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools.

AMBIENT AIR QUALITY

Both the EPA and the CARB have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

The federal and state ambient air quality standards are summarized in Table 3.3-1 for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the state standards are more stringent. This is particularly true for ozone and particulate matter between 2.5 and 10 microns in diameter.

TABLE 3.3-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	AVERAGING TIME	FEDERAL PRIMARY STANDARD	STATE STANDARD
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.075 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	--	0.03 ppm
	1-Hour	0.53 ppm	0.18 ppm
Sulfur Dioxide	Annual	0.03 ppm	--
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	--	0.25 ppm
PM10	Annual	--	20 ug/m3
	24-Hour	150 ug/m3	50 ug/m3
PM2.5	Annual	35 ug/m3	12 ug/m3
	24-Hour	15 ug/m3	--
Lead	30-Day Avg.	--	1.5 ug/m3
	3-Month Avg.	1.5 ug/m3	--

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2008

Notes: ppm = parts per million, ug/m3 = Micrograms per Cubic Meter

The EPA established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The 1-hour ozone standard was phased out and replaced by an 8-hour standard of 0.075 ppm. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U.S. Supreme Court in a decision issued in February of 2001.

In 1997, new national standards for fine particulate matter diameter 2.5 microns or less (PM_{2.5}) were adopted for 24-hour and annual averaging periods. The current PM₁₀ standards were to be retained, but the method and form for determining compliance with the standards were revised.

The State of California regularly reviews scientific literature regarding the health effects and exposure to PM and other pollutants. On May 3, 2002, CARB staff recommended lowering the level of the annual standard for PM₁₀ and establishing a new annual standard for PM_{2.5}. The new standards became effective on July 5, 2003, with another revision on November 29, 2005.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within Colusa County and the entire NSVPA are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of

3.3 AIR QUALITY

the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

It should be noted that Colusa County is subject to significant ozone transport from the Sacramento area.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An “attainment” designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An “unclassified” designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone (O₃), carbon monoxide (CO), and nitrogen dioxide (NO₂) as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For sulfur dioxide (SO₂), areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

Colusa County has a national designation for either Unclassified or Attainments for all criteria pollutants. The County has a state designation as “moderately” non-attainment for ozone and non-attainment for PM₁₀. The County is designated either attainment or unclassified for the remaining state standards.

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS

<i>CRITERIA POLLUTANTS</i>	<i>STATE DESIGNATIONS</i>	<i>NATIONAL DESIGNATIONS</i>
8-Hour Ozone	Nonattainment/Transitional	Unclassified/Attainment
PM10	Nonattainment	Unclassified
PM2.5	Attainment	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	No Federal Standard
Lead	Attainment	No Federal Standard

TABLE 3.3-2: STATE AND NATIONAL ATTAINMENT STATUS

CRITERIA POLLUTANTS	STATE DESIGNATIONS	NATIONAL DESIGNATIONS
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

SOURCES: CALIFORNIA AIR RESOURCES BOARD (2010). WWW.ARB.CA.GOV/DESIG/ADM/ADM.HTM

Air Quality Monitoring

The Colusa County APCD and CARB maintain one air quality monitoring site in Colusa County, located on Sunrise Blvd. in the City of Colusa. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. Data obtained from the Colusa monitoring site over the last 3-year period is shown in **Table 3.3-3**.

TABLE 3.3-3: AMBIENT AIR QUALITY MONITORING DATA (COLUSA-SUNRISE BLVD.)

POLLUTANT	CAL.	FED.	YEAR	MAX CONCENTRATION	DAYS (SAMPLES) STATE/FED STANDARD EXCEEDED
	PRIMARY STANDARD				
Ozone (O3) (1-hour)	0.09 ppm for 1 hour	NA	2006	0.084	0/NA
			2007	0.080	0/NA
			2008	0.091	0/NA
Ozone (O3) (8-hour)	0.07 ppm for 8 hour	0.075 ppm for 8 hour	2006	0.077	2/1
			2007	0.068	0/0
			2008	0.082	6/1
Particulate Matter (PM10)	50 ug/m3 for 24 hours	150 ug/m3 for 24 hours	2006	69.0	*/*
			2007	43.0	0/0
			2008	90.3	62.4/0
Fine Particulate Matter (PM2.5)	No 24 hour State Standard	35 ug/m3 for 24 hours	2006	61.0	NA/2.9
			2007	58.0	NA/0
			2008	169.6	NA/*

SOURCES: CALIFORNIA AIR RESOURCES BOARD (ADAM) AIR POLLUTION SUMMARIES, 2006, 2007, AND 2008.

NOTES:

PPM = PARTS PER MILLION.

UG/M3 = MICRONS PER CUBIC METER.

NA= NOT APPLICABLE

* = THERE WAS INSUFFICIENT (OR NO) DATA AVAILABLE TO DETERMINE THE VALUE

3.3.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards,

stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

STATE

Air Quality Standards

NAAQS are determined by the EPA. The standards include both primary and secondary ambient air quality standards. Primary standards are established with a safety margin. Secondary standards are more stringent than primary standards and are intended to protect public health and welfare. States have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards.

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM₁₀) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 3.3-1.

California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards.

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, ARB has

identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the ARB list of TACs. Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, ARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

LOCAL

Colusa County Air Pollution Control District

The mission of the Colusa County Air Pollution Control District is to protect the public health while balancing economic and air quality considerations.

The District is governed by a five member Board of Directors. All five Board members are County Supervisors. The Air Pollution Control Officer is appointed by the Board and serves as Executive Director of the District. The Board of Directors appoints five citizens to the District's Hearing Board, which considers appeals for rule variances and other similar matters. The Hearing Board is a quasi-judicial body.

The Board of Directors also appoints an Air District Advisory Committee to discuss and advise the Board and District staff on general air quality programs and issues.

As required by the state and federal Clean Air Act, the District is responsible for air monitoring, permitting, enforcement, long-range planning, regulatory development, education, and public information activities related to air quality. Local districts are the primary mechanism for air quality management. Districts must implement rules and regulations and provide enforcement for the attainment and maintenance of the California and national ambient air quality standards.

Northern Sacramento Valley Air Quality Attainment Plan

As specified in the California Clean Air Act of 1988 (CCAA), Chapters 1568-1588 it is the responsibility of each air pollution control district and air quality management district within the

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State to attain and maintain California's ambient air quality standards. The CCAA requires that an Attainment Plan (Plan) be developed by all non-attainment districts for ozone (O₃), carbon monoxide (CO), sulfur oxides (SO_x), and nitrogen oxides (NO_x) that are either receptors or contributors of transported air pollutants. The purpose of the Plan is to comply with the requirements of the CCAA as implemented through the California Health and Safety Code. Districts are required to update the Plan every three years.

The Northern Sacramento Valley (NSV) is classified as a moderate nonattainment area for State 1-hour ozone standard. The NSV comprises the northern portion of the Sacramento Valley Air Basin and includes the counties of Butte, Colusa, Glenn, Tehama, Shasta and the northern portions of Yuba & Sutter. The NSV is generally rural in nature, with a low population density and a predominately agricultural economy. Its industrial base is dominated by agricultural/construction support operations, although small scale manufacturing is also found throughout the region.

Health and Safety Code section 41503(b) requires that control measures for the same emission sources be uniform throughout the air basin. To meet this requirement the NSV has coordinated the development of the Plan and established specific rule adoption protocols through the Technical Advisory Committee (TAC) of the Sacramento Basinwide Control Council.

The Plan was initially submitted to CARB on September 16, 1991. CARB held a public hearing on the Plan on July 9, 1992 and found the Plan to conform to several elements of the CCAA, but also identified several deficiencies. CARB gave conditional approval of the Plan to allow time for completing plan modifications after consultation with the districts. The Plan includes the all feasible control measures applicable to the NSV, emission accounting and ranking of measures by cost-effectiveness, and provisions to develop area and indirect source control measures. The Plan did not fully satisfy the CCAA requirement for permitting rules and several districts did not make the cost-effectiveness findings.

After evaluating the progress achieved with the 1991 Plan, the NSV shifted the primary emphasis from the adoption of stationary source control measures to motor vehicle emission reductions. Because mobile sources are the single largest contributor to ozone pollution, the 1994 Plan concentrated on reducing these emissions through the implementation of Indirect Source Review (ISR) programs and Transportation Control Measures (TCMs). Several stationary source measures previously considered in the 1991 Plan were deemed not applicable or not offering cost-effective emission control and were removed from the list.

The 1997 triennial update to the Plan addressed the progress made implementing the 1994 Plan and proposed modifications to the strategies necessary to attain the State ozone standard at the earliest practicable date. Like the 1994 Plan, the 1997 Plan focused on the adoption and implementation of control measures for stationary sources, mobile sources, area wide sources, indirect sources and addressed public education programs. The Plan also addressed the transport of pollutants from the upwind metropolitan areas to the NSV. With the Sate Implementation Plan (SIP) as the state's established control strategy for the future, the CARB found that the NSV districts would not be required to prepare a comprehensive plan update for 1997. Instead, districts were directed to focus on implementing their existing control strategies and SIP commitments.

As with the 1997 Plan, the 2000 and 2003 Plan were focused on implementing existing control strategies and SIP commitments. In the 2000, 2003 and 2006 Plan updates, districts endeavored to incorporate three general principles to guide them in their planning process: (1) Air quality modeling to identify the reductions needed and to design effective emission reduction strategies; (2) Comprehensive emission reduction programs that take advantage of current emission control technologies; and (3) Address the impacts of pollutant transport in the attainment demonstration.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Cause a violation of 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 in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.

IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Mobile Source Emissions (less than significant)

This impact analysis is based on the Colusa County traffic model, which produced forecasts of total vehicles, vehicle miles traveled (VMT), vehicle trips, speed distributions, lane miles, and other travel related data required for the emission models. The most current approved emissions model, EMFAC 2007 Version 2.3, was used to generate mobile source emissions estimates for the County of Colusa. Table 3.3-4 presents the modeling assumptions.

TABLE 3.3-4: VEHICLES, 2008 AND 2030 POPULATION, VMT, AND DAILY TRIPS		
<i>GHG EMISSION DATA</i>		
Year	2008	2030 (GP Update)
Vehicle Population	30,100	38,700
Total Daily VMT	1,069,200	1,370,700
Total Daily Trips	92,729	120,272

SOURCES: FEHR AND PEERS (2011).

Colusa County is state designated nonattainment for Ozone and PM₁₀, and is designated either attainment or unclassified for the remaining state standards, as well as all national standards.

3.3 AIR QUALITY

The regional emissions analysis and forecasts are summarized in Table 3.3-5. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 model (Appendix B).

TABLE 3.3-5: ESTIMATED ANNUAL MOBILE SOURCE EMISSIONS (TONS PER DAY) - COLUSA COUNTY

<i>Analysis Year</i>	<i>ROG Emissions</i>	<i>CO Emissions</i>	<i>NOx Emissions</i>	<i>PM 10 Emissions</i>	<i>PM 2.5 Emissions</i>
2008 (Existing Conditions)	0.86	7.96	5.45	0.22	0.19
2030 (General Plan Update)	0.25	1.94	1.28	0.1	0.08
% Change under GP Update	-71%	-76%	-77%	-55%	-58%

SOURCES: DE NOVO PLANNING GROUP, EMFAC 2007 VERSION 2.3 (2011).

The results from the emissions outputs show that future mobile source emissions of all criteria pollutants will be significantly less than the baseline emissions levels in 2008. This downward trend is connected to a variety of legislative actions in past years that require increased fuel efficiency for motor vehicles to be phased in over time. The Paveley and Low Carbon Fuel Standards that are now in effect will increase fuel efficiency thereby improving emissions. These benefits are not captured in the EMFAC modeling contained within this document. Additionally, traffic models are somewhat limited in their ability to capture VMT reductions from implementing non-motorized and transit improvements. Collectively, these are expected to assist in the efforts to achieve or maintain air quality attainment.

The General Plan Update includes several policies that target air emissions, including those from mobile sources. Policy CON 2-15 improves air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts. Policy CON 2-21 encourages public transit, ridesharing and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles, and walking to minimize single passenger motor vehicle use. Policy CIRC 4-1 ensures that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects. Policy CIRC 4-2 requires all transportation improvement projects proposed for inclusion in local and regional transportation plans to be consistent with the air quality, transportation, land use, and other goals and policies of the General Plan. Policy CIRC 4-3 prioritizes transportation projects as follows: 1) improve operations on existing roads without increasing capacity, 2) encourage alternative modes, 3) increase capacity on existing roads, and 4) build new roads. Policy CIRC 4-4 requires coordination with Caltrans, the Colusa County APCD and Colusa County Regional Transportation Commission to minimize air quality and transportation impacts associated with planned and existing transportation facilities.

The mobile source emissions for ROG, NOx, CO, and PM10 would decrease over the planning horizon with implementation of the 2030 General Plan. Therefore, with the above mentioned policies that are aimed at reducing the potential for air emissions, including from mobile sources, this impact is considered **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTSPolicies

Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Policy CON 2-17: Require new sources of toxic air pollutants to prepare a Health Risk Assessment as required by Section 44300 of the California Health and Safety Code. The Health Risk Assessment shall be used to establish appropriate land use buffer zones around those areas posing substantial health risks based upon the California Air Resources Board's guidance provided in the Air Quality Land Use Handbook.

Policy CON 2-19: Require that discretionary projects involving sensitive receptors such as children, the elderly or people with illnesses proposed within 500 feet of the Interstate 5 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.

Policy CON 2-21: Encourage public transit, ridesharing and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles, and walking. Minimize single passenger motor vehicle use.

Policy CIRC 1-8: Plan and design transportation facilities to avoid damage to the County's scenic and environmental resources, such as reductions in air quality and disruption of soils, topography, vegetative cover, and wildlife habitat.

Policy CIRC 4-1: Ensure that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects.

Policy CIRC 4-2: All transportation improvement projects proposed for inclusion in local and regional transportation plans (Regional Transportation Plan, Regional Transportation Improvement Program, Congestion Management Plan, Capital Improvement Program, etc.) shall be consistent with the air quality, transportation, land use, and other goals and policies of the General Plan.

Policy CIRC 4-3: Projects included in the Capital Improvement Program and proposed for regional transportation plans should prioritize, in the following order: 1) projects that improve operations on existing roads without increasing capacity, 2) projects that encourage alternative transportation modes, 3) projects that increase capacity on existing roadways, and 4) new roadways.

Policy CIRC 4-4: Coordinate with Caltrans, the Colusa County Air Pollution Control District, and Colusa County Regional Transportation Commission to minimize air quality and transportation impacts associated with planned and existing transportation facilities.

Actions

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- 1. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- 2. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- 3. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Action CON 2-F: Coordinate with the APCD to develop: 1) thresholds for criteria pollutants associated with construction activities, and 2) a list of standard best management practices (BMPs) to be implemented during construction activities.

Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

Action CON 2-H: Work with the Air Quality Management District, Mendocino National Forest, CalFire, and fire agencies to reduce outdoor burning impacts, particularly associated with health and air quality, on populated areas.

Action CON 2-I: Provide education and outreach to the public regarding "No Burn" days enforced by the APCD.

Action CIRC 4-A: County transportation planning decisions shall be coordinated with all affected public and private agencies.

Action CIRC 4-B: Invite the public to attend meetings and provide input regarding the future of the circulation system.

Impact 3.3-2: Stationary Source Emissions (significant and unavoidable)

Stationary sources emissions come from large, fixed sources of air pollution such as power plants, refineries, and factories. Basic elements of the Federal Clean Air Act (FCAA) include stationary source emissions standards and permits. The California Air Resources Board does not have authority to issue permits directly to stationary sources of air pollution. Primary responsibility for permitting all stationary sources rests with the local and regional air pollution control authorities. The Colusa County APCD's permitting responsibilities falls into two broad categories: 1) Authority to Construct. and 2) Operating Permits.

An "Authority to Construct" is required for anyone proposing to construct, modify, or operate a facility or equipment that may emit pollutants from a stationary source into the atmosphere. An "Operating Permit" is required for anyone operating a facility that emits air pollution.

The Colusa County APCD is responsible for estimating the emissions for the permitted stationary sources within its jurisdiction and provide the data to the California Air Resources Board for distribution to the public. Table 3.3-6 shows the estimated annual stationary source emissions in Colusa County in 2008 and 2020, respectively. The Colusa County APCD has not estimated stationary source emissions for the General Plan buildout year of 2030.

TABLE 3.3-6: ESTIMATED ANNUAL STATIONARY SOURCE EMISSIONS(TONS PER DAY) - COLUSA COUNTY

Category	ROG	NO _x	PM ₁₀	PM _{2.5}
<i>2008 Estimates</i>				
Fuel Combustion	0.4	5.2	0.1	0.1
Cleaning and Surface Coatings	0.3	-	0	0
Petroleum Production Marketing	1.3	-	-	-
Industrial Processes	0.3	0.1	0.7	0.2
Total 2008 Stationary Sources	2.3	5.3	0.8	0.3
<i>2020 Estimates</i>				
Fuel Combustion	0.4	4.7	0.1	0.1
Cleaning and Surface Coatings	0.3	-	0	0
Petroleum Production Marketing	1.7	-	-	-
Industrial Processes	0.3	0.1	0.9	0.2
Total 2020 Stationary Sources	2.7	4.8	1	0.3
% Change	17%	-9%	25%	0%

SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2008 AND 2020 ESTIMATED ANNUAL AVERAGE EMISSIONS (2011).

The emissions estimates show that future emissions of ROG and PM10 will increase by approximately 17 and 25 percent, respectively for stationary sources, while NOx emissions will decrease by nine percent, and PM2.5 emissions is estimated to be unchanged. This downward trend in NOx is connected to new regulations in past years that limit emissions from boilers, steam generators, and process heaters that utilize fuel and have a relatively higher total rated heat input.

As shown in Table 3.3-7, under the General Plan Update there would be 610,874 square feet of non-residential available for development. Under the 1989 General Plan there would be 509,065 square feet of non-residential available for development. In comparison, the General Plan Update would result in an additional 101,809 square feet of non-residential available for development over the next 20 years. It is not possible to predict the exact use of every site, or whether the use will include a stationary source of emissions as part of the operations of the site; however, stationary sources are allowed in non-residential areas on a site by site basis.

TABLE 3.3-7: COMPARISON OF NON-RESIDENTIAL AVAILABLE FOR DEVELOPMENT IN THE GENERAL PLAN UPDATE AND THE 1989 GENERAL PLAN THROUGH 2030

<i>Community</i>	<i>1989 General Plan Non-Residential Sq. Ft.</i>	<i>General Plan Update Non-Residential Sq. Ft.</i>	<i>Change in Non- Residential Sq. Ft. Available</i>	<i>% Change of Non- Residential Sq. Ft. Available</i>
Arbuckle	56,425	81,337	24,912	44%
Century Ranch	0	0	0	0%
College City	8,388	2,531	-5,857	-70%
Colusa	70,982	137,157	66,175	93%
Grimes	2,440	2,329	-111	-5%
Maxwell	157,752	93,380	-64,372	-41%
Princeton	3,647	2,904	-743	-20%
Stonyford	3,386	2,963	-423	-12%
Williams	46,020	83,440	37,420	81%
Remainder	160,025	204,833	44,808	28%
Total	509,065	610,874	101,809	20%

SOURCES: COLUSA COUNTY GENERAL PLAN UPDATE (2011).

Future development would be required to comply with the 2030 General Plan, the County Code, and other applicable regulations, including APCD rules and measures. The General Plan Update includes several policies that could result in additional stationary source emissions. Policy CON 2-2 encourages the development of large-scale commercial energy projects that utilize renewable sources such as solar, biomass, and agricultural byproducts. Policy CON 2-3 allows commercial alternative energy facilities, including solar and biomass in the Agriculture General, Agriculture Upland, Industrial, and Resource Conservation land use designations with a Conditional Use Permit. While these policies are specifically designed to benefit the overall air quality conditions and result in a per-capita decrease in emissions, they would result in an increase in stationary source emissions. Policy CON 2-16 requires cooperation with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD rules and regulations, and require mitigation of significant impacts to the maximum extent feasible. Any new stationary source would be subject to the requirements of the Colusa County APCD, including the requirements of the Authority to Construct and an Operating Permit. This permit process would ensure that the stationary source is designed and constructed with the best available control technology for reducing stationary source emissions. However, there are no mitigation measures that can eliminate significant emissions while still allowing the County's economy to grow through new development, particularly industrial, agricultural, and commercial. The net change will be increased stationary source emissions in Colusa County as a result of increased non-residential uses and the addition of policies that encourage new stationary sources. Even with implementation of 2030 General Plan policies and actions that would reduce the impact, this impact is considered *significant and unavoidable*.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTSPolicies

Policy CON 2-1: Encourage and facilitate the use of on-site alternative energy systems to support industrial operations within the County.

Policy CON 2-2: Encourage the development of large-scale commercial energy projects that utilize renewable sources such as solar, biomass, and agricultural byproducts.

Policy CON 2-3: Allow commercial alternative energy facilities, including solar and biomass in the Agriculture General, Agriculture Upland, Industrial, and Resource Conservation land use designations with a Conditional Use Permit.

Policy CON 2-4: Allow alternative energy production infrastructure (such as solar panel arrays) that limits energy generation to the amount necessary to support on-site uses in all land use designations as a principally permitted use, provided that the project complies with the following:

- a. Does not detract from the visual character from the area and are either screened or designed to blend with the other uses on the site.*
- b. Is sized to produce energy in amounts comparable with the amount demanded by on-site uses.*
- c. Does not exceed noise standards.*
- d. Does not create a nuisance to adjacent properties.*

Policy CON 2-5: Encourage the use of sustainable design and green building practices in new development, infrastructure, large-scale planning, and rehabilitation projects.

Policy CON 2-9: Support farmers and landowners in their efforts to maximize the efficiency of agricultural practices and operations, including carbon efficient farming methods (e.g. methane capture systems, no-till farming, crop rotation, cover cropping); installation of renewable energy technologies; protection of grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and development of energy-efficient structures.

Policy CON 2-10: Support education programs that promote energy conservation, energy efficiency, and solid waste reduction, reuse, and recycling opportunities for County operations, residents, and businesses.

Policy CON 2-11: Manage timberlands and forest resources for their value both in timber production and offsetting greenhouse gas emissions through carbon sequestration.

Policy CON 2-12: Require new development with significant paved surfaces, such as parking lots and plazas, to provide adequate shading.

Policy CON 2-13: Encourage LEED certification or equivalent for all public and private development, where feasible, and strongly encourage LEED Neighborhood Design (ND) certification or equivalent for other applicable projects, particularly within large-scale developments and Specific Plan areas.

3.3 AIR QUALITY

Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Policy CON 2-17: Require new sources of toxic air pollutants to prepare a Health Risk Assessment as required by Section 44300 of the California Health and Safety Code. The Health Risk Assessment shall be used to establish appropriate land use buffer zones around those areas posing substantial health risks based upon the California Air Resources Board's guidance provided in the Air Quality Land Use Handbook.

Policy CON 2-18: Ensure that any proposed new sources of toxic air contaminants or odors comply with applicable health standards and provide adequate maintained and managed buffers, including setbacks and screening, to protect sensitive receptors.

Policy CON 2-19: Require that discretionary projects involving sensitive receptors such as children, the elderly or people with illnesses proposed within 500 feet of the Interstate 5 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.

Policy CON 2-20: Ensure that agricultural burning and fuel management burning is conducted in a manner that does not pose public health risks.

Actions

Action CON 2-A: Amend the Zoning Ordinance to streamline permitting and provide clear development standards for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels.

Action CON 2-B: Amend the Zoning Ordinance to encourage energy-efficiency in new development and renovations, including the use of EnergyStar appliances in all new subdivisions and green/sustainable building options as identified in Policies CON 2-5 through 2-7.

Action CON 2-C: Pursue grants to address existing energy inefficiencies in County facilities.

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*

- c. *Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

Action CON 2-H: Work with the Air Quality Management District, Mendocino National Forest, CalFire, and fire agencies to reduce outdoor burning impacts, particularly associated with health and air quality, on populated areas.

Action CON 2-I: Provide education and outreach to the public regarding "No Burn" days enforced by the APCD.

Impact 3.3-3: Area Source Emissions (less than significant)

Area-wide sources of pollution are emissions spread over a wide area, such as consumer products, fireplaces, architectural coatings, road dust and farming operations. Area-wide sources do not include mobile sources or stationary sources. They include approximately 80 source categories and are mainly linked to the activity of people.

Table 3.3-8 shows the estimated annual area-wide source emissions in Colusa County in 2008 and 2020, respectively. The Colusa County APCD has not estimated area-wide source emissions for the General Plan buildout year of 2030.

TABLE 3.3-8: ESTIMATED ANNUAL AREA-WIDE SOURCE EMISSIONS - COLUSA COUNTY

Category	ROG	CO	NOX	PM10	PM2.5
<i>2008 Estimates</i>					
Total 2008 Area-wide Sources	3	11.2	0.7	15.8	3.2
<i>2020 Estimates</i>					
Total 2020 Area-wide Sources	3.1	11.4	0.7	16.5	3.4
% Change	3%	2%	0%	4%	6%

SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2008 ESTIMATED ANNUAL AVERAGE EMISSIONS (2011).

The emissions estimates show that future emissions of ROGs, CO, PM10, and PM2.5 will increase by approximately three, two, four, and six percent, respectively for area-wide sources, while NOx emissions will be unchanged.

As shown in Table 3.3-9, under the General Plan Update there would be 1,385 dwelling units available for development, which is consistent with the 1989 General Plan. The location of the dwelling units include changes by community. For instance, there were decreases in dwelling units available in Colusa and Williams, while there was an increase in dwelling units available in Arbuckle, College City, Maxwell, Princeton, and Stonyford.

3.3 AIR QUALITY

TABLE 3.3-9: COMPARISON OF DWELLING UNITS AVAILABLE FOR DEVELOPMENT IN THE GENERAL PLAN UPDATE AND THE 1989 GENERAL PLAN THROUGH 2030

<i>Community</i>	<i>1989 General Plan Dwelling Units</i>	<i>General Plan Update Dwelling Units</i>	<i>Change in Dwelling Units Available</i>	<i>% Change of Dwelling Units Available</i>
Arbuckle	175	346	171	98%
Century Ranch	7	7	0	0%
College City	10	75	65	650%
Colusa	356	204	-152	-43%
Grimes	14	14	0	0%
Maxwell	268	322	54	20%
Princeton	41	75	34	83%
Stonyford	4	14	10	250%
Williams	269	111	-158	-59%
Remainder	241	217	-24	-10%
Total	1,385	1,385	0	0%

SOURCES: COLUSA COUNTY GENERAL PLAN UPDATE (2011).

Subsequent development projects must be consistent with the General Plan. The General Plan Update includes several policies that target air emissions, including area-wide sources. Policy CON 2-1 encourages and facilitates the use of on-site alternative energy systems to support industrial operations within the County. Policy CON 2-4 allows alternative energy production infrastructure (such as solar panel arrays) that limits energy generation to the amount necessary to support on-site uses in all land use designations. Policy CON 2-5 encourages the use of sustainable design and green building practices in new development, infrastructure, large-scale planning, and rehabilitation projects. Policy CON 2-6 encourages new residential subdivisions and apartments to provide EnergyStar appliances in all dwelling units. Policy CON 2-7 requires new residential subdivisions to offer a green or sustainable building package and options to buyers, which may include solar/photovoltaic roof or other alternative energy system, tankless water heater, energy efficient lighting, low flow faucets and showerheads, sustainable building materials, and/or EnergyStar appliances. Policy CON 2-8 encourages residents and property owners to retrofit existing residences and businesses to maximize energy efficiency. Policy CON 2-9 supports farmers and landowners in their efforts to maximize the efficiency of agricultural practices and operations, including carbon efficient farming methods (e.g. methane capture systems, no-till farming, crop rotation, cover cropping); installation of renewable energy technologies; protection of grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and development of energy-efficient structures. Policy CON 2-10 supports education programs that promote energy conservation, energy efficiency, and solid waste reduction, reuse, and recycling opportunities for County operations, residents, and businesses. Policy CON 2-12 requires new development with significant paved surfaces, such as parking lots and plazas, to provide adequate shading. Policy CON 2-13 encourages LEED certification or equivalent for all public and private development, where feasible, and strongly encourages LEED Neighborhood Design (ND) certification or equivalent for other applicable projects, particularly within large-scale

developments and Specific Plan areas. Policy CON 2-15 will improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

The net change in area-wide source emissions is a nominal increase (i.e. between two and six percent for each criteria pollutant with the exception of NOx which has no change), and the General Plan Update results in no change in dwelling units available through 2030 when compared to the 1989 General Plan, which is the principal cause of area-wide source emissions. Therefore, with the above mentioned policies that are aimed at reducing the potential for air emissions, including area-wide sources, this impact is considered ***less than significant***.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 2-5: Encourage the use of sustainable design and green building practices in new development, infrastructure, large-scale planning, and rehabilitation projects.

Policy CON 2-6: Encourage new residential subdivisions and apartments to provide EnergyStar appliances in all dwelling units.

Policy CON 2-7: Require new residential subdivisions to offer a green or sustainable building package and options to buyers, which may include solar/photovoltaic roof or other alternative energy system, tankless water heater, energy efficient lighting, low flow faucets and showerheads, sustainable building materials, and/or EnergyStar appliances.

Policy CON 2-8: Encourage residents and property owners to retrofit existing residences and businesses to maximize energy efficiency.

Policy CON 2-9: Support farmers and landowners in their efforts to maximize the efficiency of agricultural practices and operations, including carbon efficient farming methods (e.g. methane capture systems, no-till farming, crop rotation, cover cropping); installation of renewable energy technologies; protection of grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and development of energy-efficient structures.

Policy CON 2-10: Support education programs that promote energy conservation, energy efficiency, and solid waste reduction, reuse, and recycling opportunities for County operations, residents, and businesses.

Policy CON 2-13: Encourage LEED certification or equivalent for all public and private development, where feasible, and strongly encourage LEED Neighborhood Design (ND) certification or equivalent for other applicable projects, particularly within large-scale developments and Specific Plan areas.

Actions

Action CON 2-B: Amend the Zoning Ordinance to encourage energy-efficiency in new development and renovations, including the use of EnergyStar appliances in all new subdivisions and green/sustainable building options as identified in Policies CON 2-5 through 2-7.

3.3 AIR QUALITY

Action CON 2-C: Pursue grants to address existing energy inefficiencies in County facilities.

Action CON 2-D: Institute County purchasing policies that require purchase of energy-efficient products, products that contain recycled materials, and products that reduce waste generated when feasible.

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- c. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

Action CON 2-H: Work with the Air Quality Management District, Mendocino National Forest, CalFire, and fire agencies to reduce outdoor burning impacts, particularly associated with health and air quality, on populated areas.

Impact 3.3-4: Construction Emissions (less than significant)

Construction activities within the County result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions generate additional ozone precursors (ROG and NO_x) as well as PM₁₀, which could exacerbate the region's existing state non-attainment status for these criteria pollutants.

As individual projects are constructed, the activity at individual construction sites will involve grading and other earth-moving operations and use of diesel and gasoline-powered construction equipment. Where asphalt is used, volatile organic compounds (VOCs) will be released from asphalt when it is applied to the roadways' surfaces. If an individual construction site is located near existing homes or other sensitive receptors, such emissions could have the potential to result in short-term impacts at that particular location.

Particulate matter is primary pollutant of concern from construction activities. The amount of PM₁₀ emitted during construction activities varies greatly depending on the level of activity, the specific operations taking place, the equipment being operated, soil characteristics, and weather

conditions. Despite this variability in emissions, experience has shown that several feasible control measures can be reasonably implemented to reduce PM₁₀ emissions during construction.

The General Plan Update includes a policy and actions that target construction related air emissions. Policy CON 2-21 includes two action measures that specifically requires coordination with the Colusa County APCD to develop thresholds for criteria pollutants associated with construction activities, develop a list of standard best management practices (BMPs) to be implemented during construction activities, and to prepare an air quality analysis for specific projects to identify and mitigate for construction emissions.

There will be a net increase in construction source emissions as a result of the General Plan Update. New construction would result in additional construction emissions. However, feasible control measures can be reasonably implemented to reduce particulate matter emissions during construction. Future projects will be required to be consistent with 2030 General Plan policies, County Code requirements, and other regulations, including APCD rules, related to addressing construction air quality impacts. Construction emissions are temporary and construction projects will be required to implement feasible control measures to reduce particulate matter and air pollutant emissions. Therefore, this impact is considered *less than significant*.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 2-5: Encourage the use of sustainable design and green building practices in new development, infrastructure, large-scale planning, and rehabilitation projects.

Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Actions

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- c. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Action CON 2-F: Coordinate with the APCD to develop: 1) thresholds for criteria pollutants associated with construction activities, and 2) a list of standard best management practices (BMPs) to be implemented during construction activities.

Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

Impact 3.3-5: CO and PM Hot-spots (less than significant)

Hot-spots are an accumulation of air pollution that develops under adverse atmospheric conditions that prevent a rapid dispersion of the air pollution. Traffic congestion can create “hot-spots” that occur from exhaust of idling cars waiting to clear a heavily congested intersection or crossing. A hot-spot analysis can be performed to estimate the likely future localized pollutant concentrations and compare those concentrations to the relevant NAAQS. A hot-spot analysis assesses the air quality impacts on a scale much smaller than an entire nonattainment area, therefore it is most appropriately performed on a project-level. This analysis is typically performed for CO, PM10, and PM2.5 in association with transportation improvements, and is an FHWA and EPA requirement for project-level air quality conformity determinations.

Currently, Colusa County is in attainment of federal standards for CO, PM10, and PM2.5. As such, hot-spot analysis is not a requirement for transportation projects in Colusa County. Nonetheless, there is a potential for some instances of congestion and an occasional hot spot. The General Plan Update includes a policy and actions that target air emissions. Policies CON 2-21, CIR 4-1, CIR 4-2, and 4-4 would minimize transportation-related congestion and reduce air quality impacts associated with transportation. Policy CON 2-16 includes two action measures that specifically requires the County to continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan, to coordinate with the Colusa County APCD to develop thresholds for criteria pollutants, and to prepare an air quality analysis for individual projects, which may include a hot-spot analysis if congestion is apparent. This policy also requires the project to mitigate for air emission impacts.

There will be a net increase in traffic; however, traffic improvements will be constructed to offset the increased traffic and to maintain a free flowing and orderly circulation system that operates at an acceptable level of service. Provided that Colusa County is not currently in federal non-attainment for CO or PM, there is a low likelihood of CO or PM hot-spots in Colusa County and this impact is considered ***less than significant***.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Policy CON 2-21: Encourage public transit, ridesharing and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles, and walking. Minimize single passenger motor vehicle use.

Policy CIRC 4-1: Ensure that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects.

Policy CIRC 4-2: All transportation improvement projects proposed for inclusion in local and regional transportation plans (Regional Transportation Plan, Regional Transportation Improvement Program, Congestion Management Plan, Capital Improvement Program, etc.) shall be consistent with the air quality, transportation, land use, and other goals and policies of the General Plan.

Policy CIRC 4-3: Projects included in the Capital Improvement Program and proposed for regional transportation plans should prioritize, in the following order: 1) projects that improve operations on existing roads without increasing capacity, 2) projects that encourage alternative transportation modes, 3) projects that increase capacity on existing roadways, and 4) new roadways.

Policy CIRC 4-4: Coordinate with Caltrans, the Colusa County Air Pollution Control District, and Colusa County Regional Transportation Commission to minimize air quality and transportation impacts associated with planned and existing transportation facilities.

Actions

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- c. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Action CON 2-F: Coordinate with the APCD to develop: 1) thresholds for criteria pollutants associated with construction activities, and 2) a list of standard best management practices (BMPs) to be implemented during construction activities.

Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

Impact 3.3-6: Air Toxics (less than significant)

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale

cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

Currently, the California Air Resources Board monitors toxics throughout California from 15 monitoring sites; however, there are no toxic air monitoring sites located in Colusa County. The closest toxic air monitoring site to Colusa County is in the City of Stockton. As air toxics research continues, new tools and techniques will be developed for assessing health outcomes as a result of lifetime air toxics exposure.

The General Plan Update includes several policies that target air toxics. Policy CON-2-17 requires new sources of toxic air pollutants to prepare a Health Risk Assessment as required by Section 44300 of the California Health and Safety Code. The Health Risk Assessment would then be used to establish appropriate land use buffer zones around those areas posing substantial health risks based upon the California Air Resources Board's guidance provided in the Air Quality Land Use Handbook. Policy CON-2-18 would ensure that any proposed new sources of toxic air contaminants comply with applicable health standards and provide adequate maintained and managed buffers, including setbacks and screening, to protect sensitive receptors. CON-2-19 would require that discretionary projects involving sensitive receptors such as children, the elderly or people with illnesses proposed within 500 feet of the Interstate 5 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels. These policies will ensure that the potential for toxic emissions is appropriately evaluated on a project-by-project basis, and the exposure of toxics to sensitive receptors is avoided to the extent possible. Consequently, this impact is considered ***less than significant***.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Policy CON 2-17: Require new sources of toxic air pollutants to prepare a Health Risk Assessment as required by Section 44300 of the California Health and Safety Code. The Health Risk Assessment shall be used to establish appropriate land use buffer zones around those areas posing substantial health risks based upon the California Air Resources Board's guidance provided in the Air Quality Land Use Handbook.

Policy CON 2-18: Ensure that any proposed new sources of toxic air contaminants or odors comply with applicable health standards and provide adequate maintained and managed buffers, including setbacks and screening, to protect sensitive receptors.

Policy CON 2-19: Require that discretionary projects involving sensitive receptors such as children, the elderly or people with illnesses proposed within 500 feet of the Interstate 5 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.

Policy CON 2-20: Ensure that agricultural burning and fuel management burning is conducted in a manner that does not pose public health risks.

Actions

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- c. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Impact 3.3-7: Objectionable Odors (less than significant)

Objectionable odors can be generated from construction diesel exhaust, agricultural operations, and certain types of industrial land uses. In general, residential land uses are not associated with odor generation. A project would have a significant odor impact if it is located in close proximity to sensitive receptors. The General Plan Update includes Policy CON-2-18 which requires new sources of odors to comply with applicable health standards and provide adequate maintained and managed buffers, including setbacks and screening, to protect sensitive receptors. Policy CON 2-E requires development, infrastructure, and planning projects to identify potential air quality impacts and provide appropriate mitigation measures. Policy CON-2-18 and Action CON 2-E will ensure that sensitive receptors would not be exposed to substantial levels of odors. Consequently, this impact is considered ***less than significant***.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 2-18: Ensure that any proposed new sources of toxic air contaminants or odors comply with applicable health standards and provide adequate maintained and managed buffers, including setbacks and screening, to protect sensitive receptors.

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- c. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

Impact 3.3-8: Asbestos Exposure (less than significant)

The term “asbestos” is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. NOA) is commonly associated with ultramafic rocks and serpentinite. Asbestos has been used in a variety of facilities, including bridges, walls, road base, and building materials. Demolition and excavation activities of facilities containing asbestos requires monitoring to insure that they are properly removed and disposed in accordance with local and state regulations. The California Geological Survey documents areas in western Colusa County associated with the foothill and mountainous regions as potentially having naturally occurring asbestos in the soil. It is possible that buildings and transportation facilities located in Colusa County also have asbestos materials. Future development projects could disturb NOA or, in the case of redevelopment or expansion projects, asbestos-containing materials used in the existing construction. This disturbance of asbestos could expose construction workers, residents, and future users of the development site to asbestos.

Future projects would be required to comply with applicable 2030 General Plan policies and actions as well as APCD rules and regulations. In 1992 the Colusa County APCD adopted Rule 2.32 entitled “Asbestos Airborne Toxic Control Measure for Asbestos Containing Serpentine.” This rule requires compliance with applicable state and local regulations regarding asbestos, including CARB’s asbestos airborne toxic control measure (ATCM) (Title 17, CCR § 93105 and 93106), in the event that asbestos is present in the soil or in structures such as road base, bridges, and other structures. Compliance can include the preparation of an Asbestos Hazard Dust Mitigation Plan to be implemented during construction activities. Compliance with this rule ensures that exposure of asbestos to construction workers and the public to NOA is reduced to the extent possible. In addition, the Safety Element of the 2030 General Plan includes policies and actions to ensure that exposure to known hazards is reduced to acceptable levels, as discussed in Chapter 3.8.

Compliance with APCD Rule 2.32 and applicable 2030 General Plan policies and actions would reduce this impact to ***less than significant***.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 2-16: Cooperate with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD, state, and federal air quality rules, and require mitigation of significant impacts to the maximum extent feasible.

Policy SA 1-7: Permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level.

Actions

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

- a. Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.*
- b. Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.*
- c. Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.*

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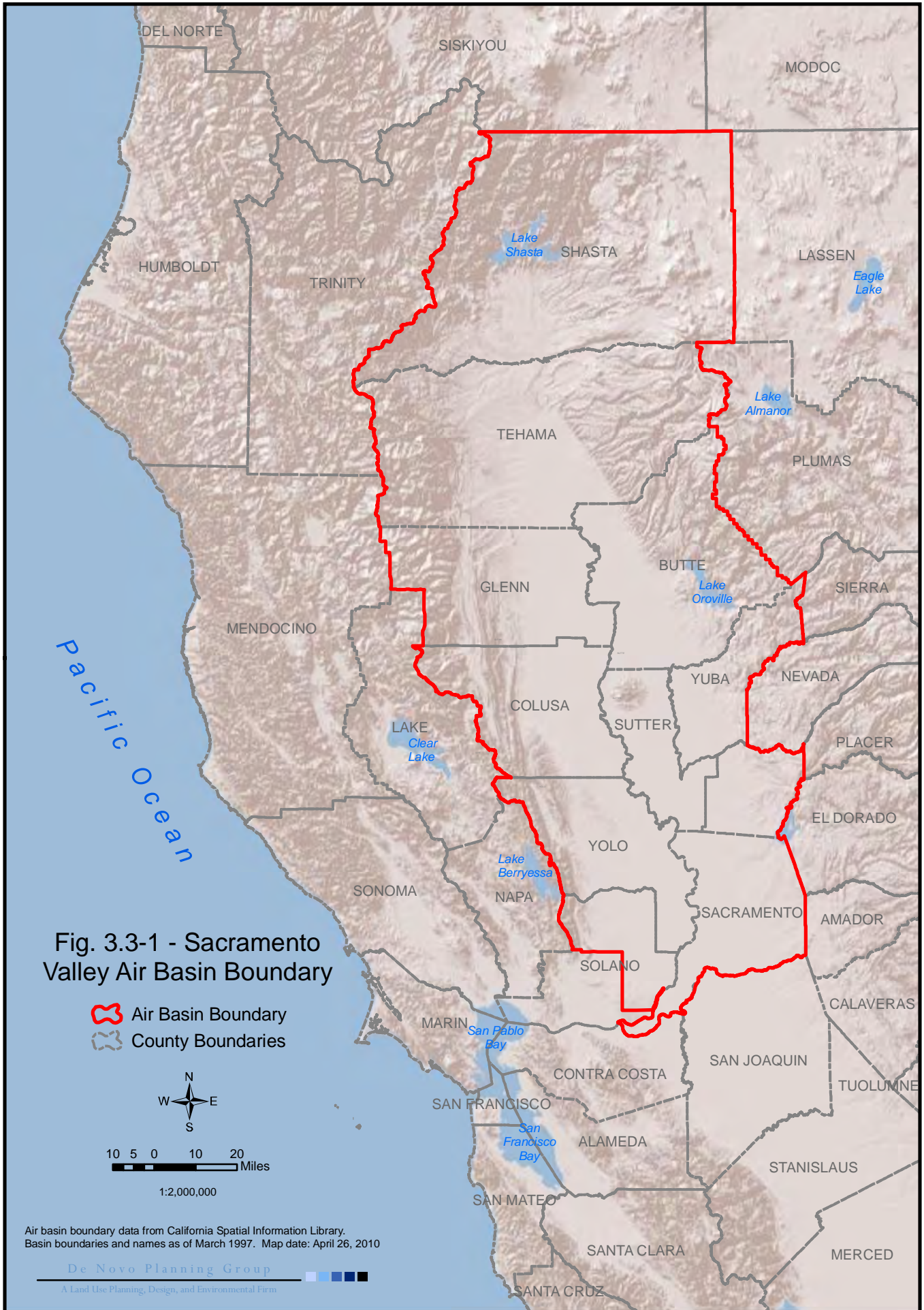


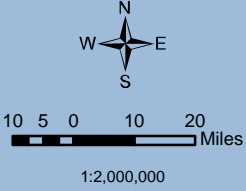


Fig. 3.3-1 - Sacramento Valley Air Basin Boundary

-  Air Basin Boundary
-  County Boundaries



Air basin boundary data from California Spatial Information Library.
 Basin boundaries and names as of March 1997. Map date: April 26, 2010

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Colusa County contains a variety of biological communities and wildlife habitats that provide recreational opportunities and contribute to the overall functionality of valley and foothill ecosystems. This section describes biological resources in the County from both a qualitative and quantitative perspective.

This section provides a background discussion of the geomorphic provinces, bioregions, natural and agricultural communities, management landscape, regionally important habitat and wildlife, watersheds, and special status species found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

Methods

Biological resources within the County were identified through field reconnaissance, a review of pertinent literature, and database queries. The primary sources of data referenced for this section is derived from the following:

- California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (Skinner, Mark W. and Bruce M. Pavlik, Eds. 2001);
- A Manual of California Vegetation (Sawyer, John and Todd Keeler-Wolf 1995);
- Terrestrial vegetation of California (Barbour and Major 1988);
- Jepson Manual: Higher Plants of California (Hickman, James C. 1993);
- "Special Plants List." Natural Diversity Database. (California Dept. of Fish and Game);
- "Special Animals List." Natural Diversity Database. (California Dept. of Fish and Game);
- "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database. (California Dept. of Fish and Game).
- Army Corps of Engineers Wetland Delineation Manual. (ACOE 1987)

Key Terms

The following key terms are used throughout this section to describe biological resources and the framework that regulates them:

Hydric Soils. One of the three wetland identification parameters, according to the federal definition of a wetland, hydric soils have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season. There are approximately 2,000 named soils in the United States that may occur in wetlands.

Hydrophytic Vegetation. Plant types that typically occur in wetland areas. Nearly 5,000 plant types in the United States may occur in wetlands. Plants are listed in regional publications of the U.S. Fish and Wildlife Service (USFWS) and include such species as cattails, bulrushes, cordgrass, sphagnum moss, bald cypress, willows, mangroves, sedges, rushes, arrowheads, and water plantains.

3.4 BIOLOGICAL AND NATURAL RESOURCES

Sensitive Natural Community. A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, are structurally complex, or are in other ways of special concern to local, state, or federal agencies. CEQA identifies the elimination or substantial degradation of such communities as a significant impact. The California Department of Fish and Game (CDFG) tracks sensitive natural communities in the California Natural Diversity Database (CNDDDB). Examples of sensitive natural communities in the County include northern hardpan vernal pools.

Special-Status Species. Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special status species" in this EIR, following a convention that has developed in practice but has no official sanction. For the purposes of this assessment, the term "special status" includes those species that are:

- Federally listed or proposed for listing under the Federal Endangered Species Act (50 CFR 17.11-17.12);
- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- State listed or proposed for listing under the California Endangered Species Act (14 CCR 670.5);
- Species listed by the U.S. Fish and Wildlife Service (USFWS) or the CDFG as a species of concern (USFWS), rare (CDFG), or of special concern (CDFG);
- Fully protected animals, as defined by the State of California (California Fish and Game Code Section 3511, 4700, and 5050);
- Species that meet the definition of threatened, endangered, or rare under CEQA (CEQA Guidelines Section 15380);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.); and
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in Skinner and Pavlik 1994).

Wetlands and Other Waters of the U.S. Wetlands are ecologically complex habitats that support a variety of both plant and animal life. In a jurisdictional sense, the federal government defines wetlands in Section 404 of the Clean Water Act as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater

marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the U.S (see definition below for "other waters of the U.S."). The U.S. Army Corps of Engineers (USACE) is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the Environmental Protection Agency (EPA) has overall responsibility for the Act.

The CDFG does not normally have direct jurisdiction over wetlands unless they are subject to jurisdiction under Streambed Alteration Agreements or they support state-listed endangered species; however, CDFG is a trustee agency, meaning that they manage the wildlife and habitats of the state in trust pursuant to California law.

"Other waters of the U.S." refers to those hydric features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and an ordinary high-water mark. Examples of other waters of the U.S. include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

3.4.1 ENVIRONMENTAL SETTING

Colusa County encompasses approximately 1,156 square miles in north central California, of which 1,151 square miles is land and six square miles is water. . The eastern part of the county is located in the Sacramento Valley, the western portion is in the Klamath/North Coast Range. The climate varies by region, but generally the county has cool, wet winters and hot, dry summers. Precipitation is normally in the form of rain, with snow in the higher elevations, and ranges from approximately 13 to 55 inches per year.

GEOMORPHIC PROVINCES

California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief and climate. These geomorphic provinces are remarkably diverse. They provide spectacular vistas and unique opportunities to learn about earth's geologic processes and history. Colusa County is located in portions of the Coast Range, and Great Valley geomorphic provinces of California.

Great Valley. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic period (about 160 million years ago). Great oil fields have been found in southernmost San Joaquin Valley and along anticlinal uplifts on its southwestern margin. In the Sacramento Valley, the Sutter Buttes, the remnants of an isolated Pliocene volcano, rise above the valley floor.

Coast Range (North). The Coast Range is a northwest-trending mountain range (2,000 to 4,000, occasionally 6,000 feet elevation above sea level). The range trends northwest and subparallel to the San Andreas Fault. To the west is the Pacific Ocean and to the east is the Great Valley. The Coast Range is composed of thick Mesozoic and Cenozoic sedimentary strata that dips beneath

3.4 BIOLOGICAL AND NATURAL RESOURCES

alluvium of the Great Valley. The northern Coast Range is dominated by irregular, knobby, landslide-topography of the Franciscan Complex.

BIOREGIONS

The county is defined by two different bioregions including the Sacramento Valley, and Klamath/North Coast. A brief description of each bioregion is presented below.

Sacramento Valley. The Sacramento Valley Bioregion is a watershed of the Sierra Nevada that encompasses the northern end of the great Central Valley, stretching from Redding to the southeast corner of Sacramento County. The bioregion is generally flat, and is rich in agriculture. The eastern portion of the County falls within this bioregion, which has a climate that is characterized by hot dry summers and cool wet winters. Oak woodlands, riparian forests, vernal pools, freshwater marshes, and grasslands provide the major natural vegetation of the bioregion. This bioregion is the most prominent wintering area for waterfowl, attracting significant numbers of ducks and geese to its seasonal marshes along the Pacific Flyway. Species include northern pintails, snow geese, tundra swans, sandhill cranes, mallards, grebes, peregrine falcons, heron, egrets, and hawks. Black-tailed deer, coyotes, river otters, muskrats, beavers, ospreys, bald eagles, salmon, steelhead, and swallowtail butterflies are some of the wildlife that are common in this bioregion.

Klamath/North Coast. The Klamath/North Coast Bioregion in California's northwestern corner extends roughly one-quarter of the way down the 1,100-mile coast and east across the Coastal Range and into the Cascades. Much of this bioregion is covered by forest and is the state's wettest climate, with rainfall distribution varying widely from an average annual 38 to 80 or more inches. The western portion of the County falls within this bioregion, which is considered "Inland" with a climate that is drier with low rainfall in winter and hot, dry summers. Vegetation includes mixed conifer habitat of white fir, Douglas fir, ponderosa pine, Sierra lodgepole pine, incense cedar, sugar pine, red fir, Jeffrey pine, mountain hemlock, knobcone pine, western red cedar, red alder, redwood, tanoak, Pacific madrone, and chaparral. Wildlife in the bioregion includes deer, fox, black bear, mountain lion, California clapper rail, Aleutian Canada geese, elk, osprey, fisher, bank swallow, salmon, Otis blue butterfly, bald eagle, Point Arena mountain beaver, Swainson's hawk, willow flycatcher, western sandpiper, and Oregon silverspot butterfly.

NATURAL AND AGRICULTURAL COMMUNITIES

Natural and agricultural communities both provide a variety of habitat for the biological resources in Colusa County. Sensitive habitats include those that are of special concern to resource agencies or those that are protected under federal, state, or local regulations.

Colusa County is a biologically diverse part of the state. According to the California Wildlife Habitat Relationship System there are 24 cover types (wildlife habitat classifications) in Colusa County out of 59 found in the state. These include: Agricultural, Annual Grassland, Barren, Blue Oak Woodland, Blue Oak-Foothill Pine, Chamise-Redshank Chaparral, Closed-Cone Pine-Cypress, Douglas Fir, Fresh Emergent Wetland, Klamath Mixed Conifer, Mixed Chaparral, Montane Chaparral, Montane Hardwood, Montane Hardwood-Conifer, Montane Riparian, Ponderosa Pine,

Red Fir, Riverine, Urban, Valley Foothill Riparian, Valley Oak Woodland, Water, Wet Meadow, and White Fir. Table 3.4-1 identifies the total area by acreage for each cover type (wildlife habitat classification) found in Colusa County. Figure 3.4-1 illustrates the location of each cover type (wildlife habitat classification) within the County. A brief description of each cover type follows.

TABLE 3.4-1: COVER TYPES - CALIFORNIA WILDLIFE HABITAT RELATIONSHIP

COVER TYPES	ACREAGE
Agriculture	339,955.0
Annual Grassland	110,055.0
Barren	723.0
Blue Oak Woodland	77,111.9
Blue Oak-Foothill Pine	10,429.3
Chamise-Redshank Chaparral	35,366.4
Closed-Cone Pine-Cypress	7,181.8
Douglas-Fir	7,734.3
Freshwater Emergent Wetland	18,922.7
Klamath Mixed Conifer	3,506.9
Mixed Chaparral	53,765.4
Montane Chaparral	7,275.5
Montane Hardwood	29,822.6
Montane Hardwood-Conifer	10,727.1
Montane Riparian	36.0
Ponderosa Pine	4,167.4
Red Fir	312.3
Riverine	177.7
Unknown Shrub Type	103.3
Urban	9,326.8
Valley Foothill Riparian	3,636.6
Valley Oak Woodland	1,222.6
Water	6,963.3
Wet Meadow	26.4
White Fir	831.1
Total	739,380.3

SOURCE: SOURCE: CASIL GIS DATA, 2009, CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM, 2009

Conifer Forest

Closed-cone pine-cypress habitats are typically found on sites that are more rocky and infertile than the surrounding soils. Many stands are found on serpentine soils. Although, typically found at low elevations, due to the coastal distribution of much of this habitat type, interior stands may be found at elevations up to 6550 ft. Landforms are gentle to steep slopes where stands occur in interior California and coastal terraces or bluffs where distributed along coastal California.

Douglas fir habitat is typically found in areas with hot, dry summers and cool, mild, wet winters. Temperatures range from 57-72 F in the summer to 32-46 F in the winter. Annual precipitation varies from 24-27 in, generally less than 15 percent falling during summer. Precipitation increases inland and at higher elevations. Snowfall ranges from 2 to 31 inches and rarely persists later than June. Topography is characterized by rugged, deeply dissected terrain and steep slopes, especially toward the south. Major soil types are sedimentary granitic, and Ultramafic parent materials of gabbro, peridotite, and serpentine.

Klamath mixed conifer habitat occupies a complex of mountain ranges in northern California which are characterized by rugged, deeply dissected terrain with steep slopes due to extensive glaciation. This area has a considerable amount of ultramafic parent material and soils with scattered areas of serpentinitic soils; it also overlays a very old and complex geological structure. Average slopes are 60 percent or more and valleys are narrow. Climatic conditions include warm, wet winters and hot dry summers with precipitation varying from 69 inches on the western (maritime) side to 24 inches on the eastern (continental) side. Snowfall is moderate, ranging from 2 to 60 in, with large amounts of snowfall occurring at the middle and high elevations where this habitat occurs.

Montane hardwood-conifer habitat generally occurs on coarse, well drained mesic soils, in mountainous terrain with narrow valleys. Slopes average approximately 57 percent with all aspects encountered. Winters are cool and wet; summers are hot and dry. Northern California Montane Hardwood-Conifer sites have less rainfall and fog than Redwood or Mixed Conifer habitats. In southern California, this habitat is found at higher elevations, and in moist canyons. Average rainfall is 25 to 65 in, with some fog. The growing season is 7 to 11 months, with 200 to 300 frost-free days.

Ponderosa pine habitat is found on suitable mountain and foothill sites throughout California except in the immediate area of San Francisco Bay, in the north coast area, south of Kern County in the Sierra Nevada and east of the Sierra Nevada Crest. Ponderosa pine is found on all aspects, depending on soils and location within the local elevational range. Mean annual temperature is generally less than 55 F and precipitation is greater than 33 inches except in southern California. Less than one-third of the precipitation is snowfall.

Red fir habitats are found on frigid soils over a wide range of topography exclusive of very wet sites. Annual precipitation ranges from 40 to 50 inches per year, primarily as snow that forms packs up to 15 feet in winter. Summers are dry, limiting tree growth to seasonally available soil moisture.

White fir habitats are found on a variety of soils developed from different parent material, including volcanic and igneous rocks, granitics, various metamorphics, and sedimentary material. Soils are coarse textured, well-drained, have poorly developed profiles, are often rocky, and are cold, with mean annual temperatures from 32 -50 F. Cooler north- and east-facing slopes are the most common sites throughout the state. Precipitation is between 30-70 inches mostly in the form of snow. Almost all precipitation falls between October and May.

Hardwood Woodland

Blue oak-foothill pine habitat occurs in a typically Mediterranean climate with hot, dry summers and cool, wet winters. Most precipitation falls as rain from November through April, averaging 20 to 40 inches within the primary range of blue oak. The frost-free growing season ranges from 150 to 300 days, with winter temperatures averaging 30 F and summer temperatures averaging 90 F. Soils are from a variety of generally well-drained parent materials, ranging from gravelly loam through stony clay loam, with soils commonly rich in rock fragments.

Blue oak woodland habitat is usually associated with shallow, rocky, infertile, well-drained soils from a variety of parent materials. The climate is Mediterranean, with mild wet winters and hot dry summers. Average annual precipitation varies from 20 to 40 inches over most of the range, although extremes are noted from 10 to 60 inches. Mean temperatures range from 75-96 F in summer to 29-42 F in winter. The growing season ranges from 6 months in the north to the entire year in the south, with 175 to 365 frost-free days.

Valley oak woodland habitat occurs in a wide range of physiographic settings but is best developed on deep, well-drained alluvial soils, usually in valley bottoms. Most large, healthy valley oaks are probably rooted down to permanent water supplies. Stands of valley oaks are found in deep sills on broad ridge-tops in the southern Coast Range. Where this type occurs near the coast, it is usually found away from the main fog zone. The climate is Mediterranean, with mild, wet winters and hot, dry summers.

Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high water table. The substrate is coarse, gravelly or rocky soils more or less permanently moist, but probably well aerated. Frost and short periods of freezing occur in winter (200 to 350 frost-free days). This habitat is characterized by hot, dry summers, mild and wet winters. Temperatures range from 75 to 102 F in the summer to 29 to 44 F in the winter. Average precipitation ranges from 6-30 inches, with little or no snow. The growing season is 7 to 11 months.

Hardwood Forest

Montane hardwood habitat is found on a wide range of slopes, especially those that are moderate to steep. Soils are for the most part rocky, alluvial, coarse textured, poorly developed, and well drained. Soil depth ranges from shallow to deep. Summer temperatures vary between 68 and 77 F and winter vary from 37 to 45 F. Frost-free days range from 160 to 230. Annual precipitation varies from 110 inches in the northern Coast Range to 36 inches in the mountains of southern California.

Montane Riparian areas are found associated with montane lakes, ponds, seeps, bogs and meadows as well as rivers, streams and springs. Water may be permanent or ephemeral. The growing season extends from spring until late fall, becoming shorter at higher elevations. Most tree species flower in early spring before leafing out.

Shrub

Chamise-Redshank Chaparral is found where soils are thin with little accumulation of organic materials. Chamise may be a dominant shrub on some serpentine sites and is most common on south and west facing slopes, while redshank is found on all aspects. Chamise-Redshank Chaparral is found in a Mediterranean climate; rainfall is 38 to 63 cm (15 to 25 in), less than 20 percent of total precipitation falls in summer, and winters are mild. The predominant land forms are steep slopes and ridges.

Mixed Chaparral occurs on all aspects, but at lower elevations, it generally is found on north-facing slopes. Generally, it occurs on steep slopes and ridges with relatively thin, well-drained soils. Soils can be rocky, sandy, gravelly or heavy. The Mediterranean climate is characterized by cool, wet winters and hot, dry summers. Total rainfall is 38 to 63 cm (15 to 25 in) with less than 20 percent falling during the summer.

Montane chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. It may dominate on more xeric sites, but occurs locally throughout the coniferous forest zone. Generally, climate is like that associated with the coniferous forest zone, cold winter temperatures with substantial precipitation. Summers are typically hot and dry. In the northern portion of the state, montane chaparral is found between 914 to 2743 m (3000-9000 ft).

Herbaceous

Annual Grassland habitat occurs mostly on flat plains to gently rolling foothills. Climatic conditions are typically Mediterranean, with cool, wet winters and dry, hot summers. The length of the frost free season averages 250 to 300 days (18 to 21 fortnights). Annual precipitation is highest in northern California.

Wet meadows occur where water is at or near the surface most of the growing season, following spring runoff. Hydrologically, they occupy lotic, sunken concave, and hanging sites. Lotic sites are those with main input flow (other than precipitation) from upstream sources; at least early in the growing season, water flows across them at depths of 4-8 inches. Downstream runoff is the principal output flow. Lotic sites are topographic basins but have a slight slope, which permits drainage of surface water. Percolation is nil due to the saturated or slowly permeable nature of underlying materials. Sunken concave sites also receive water input from upstream sources, but evapotranspiration is the main output flow. Percolation is slowed by heavy-textured soils and/or shallow bedrock; however, in contrast to lotic and hanging sites, soil of sunken concave sites may dry to considerable depth by fall. Hanging sites are watered by hydrostatic flows as springs or seeps. They frequently occur on rather steep slopes, and downstream runoff is the main output flow. Surface flows, although constant, are usually no more than 0.4 inches deep.

Fresh emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. They are most common on level to gently rolling topography. They are found in various depressions or at the edge of rivers or lakes. Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed. In some areas organic soils (peat) may constitute the primary growth medium. Climatic conditions

are highly variable and range from the extreme summer heat to winter temperatures well below freezing.

Other

There are a variety of other habitat types documented with Colusa County. These include aquatic habitats such as lacustrine (water) and riverine (rivers/creeks), and agricultural habitats (deciduous orchard, dryland grain crops, irrigated grain crops, irrigated hayfields, irrigated row and field crops, and rice). Additionally, Colusa County contains areas that are barren and urban.

MANAGEMENT LANDSCAPE

Land management in Colusa County can be classified into four general categories: Agricultural (Active Farming), Agricultural (Rangeland/Forestland), Wildlife/Natural Lands Reserve, and Urban. Table 3.4-2 presents a breakdown of the acreage within each category. Figure 3.4-2 provides an illustration of each management classification. The following section provides an overview of the largest federal, state, and non-profit land management/conservation organizations and their lands in Colusa County.

TABLE 3.4-2: MANAGEMENT LANDSCAPE	
MANAGEMENT CLASSIFICATION	ACREAGE
Agricultural (Active Farming)	247,059.0
Wildlife/Natural Lands Reserve	36,259.5
Urban	7,314.8
Agricultural (Rangeland/Forestland)	449,626.0
Total	740,259.3

SOURCE: CASIL GIS DATA, 2009

National Forest Lands

Mendocino National Forest. The Mendocino National Forest is 913,306 acres and lies in parts of six counties, including Colusa, Lake, Glenn, Mendocino, Tehama, and Trinity. Elevations in the Forest range from 750 feet to 8092 feet, with the average elevation about 4000 feet. An estimated 60,000 acres of old growth occur here, including forests of Douglas-fir, Ponderosa Pine, White Fir, Tanoak, and Pacific madrone. The Mendocino National Forest is the only one of California's 18 National Forests that are not crossed by a paved road or highway and it is attractive to people seeking outdoor recreation. The Forest provides resources through logging and grazing, in addition to its recreational activities.

National Wildlife Refuges

The Sacramento National Wildlife Refuge Complex consists of five national wildlife refuges (NWR) and three wildlife management areas (WMA) that comprise over 35,000 acres of wetlands and

uplands in the Sacramento Valley, California. In addition, there are over 30,000 acres of conservation easements in the Complex. The Refuges and easements are part of the USFWS; they serve as resting and feeding areas for nearly half the migratory birds on the Pacific Flyway.

Colusa National Wildlife Refuge. The Colusa National Wildlife Refuge is a 4,507-acre refuge primarily consisting of intensively managed wetland impoundments, with some grassland and riparian habitat. This Wildlife Refuge typically supports wintering populations of more than 200,000 ducks and 50,000 geese. Wetland impoundments are intensively managed to provide optimal habitat for the dense concentration of wintering waterfowl, as well as habitat for resident wildlife and spring/summer migrants.

The grassland habitat supports several populations of endangered and sensitive species of plants. The refuge is a stronghold for populations of the endangered palmate-bracted bird's-beak and the threatened giant garter snake. About 35,000 visitors come to the refuge each year for wildlife viewing and 4,000 come to hunt waterfowl and pheasant.

Delevan National Wildlife Refuge. The Delevan National Wildlife Refuge is a 5,797-acre refuge consisting of over 4,500 acres of intensively managed wetlands and 1,200 acres of uplands. More than 200,000 ducks and 100,000 geese come to the refuge each winter. The Wildlife Refuge supports several endangered plants and animals: giant garter snake, wintering peregrine falcon and bald eagle, breeding tricolored blackbird, and a large colony of the endangered palmate-bracted bird's beak. Resident wildlife include grebe, heron, blackbird, beaver, muskrat, black tailed deer and other species typical of upland and wetland habitats. Approximately 7,000 people hunt on the refuge each year and an estimated 1,000 visitors observe wildlife from a primitive roadside overlook along the Maxwell-Colusa Highway.

Sacramento National Wildlife Refuge. The Sacramento National Wildlife Refuge is a 10,783-acre refuge consisting of about 7,600 acres of intensively managed wetlands, uplands, riparian habitat, and vernal pools. It typically supports wintering populations of more than 600,000 ducks and 200,000 geese. The refuge supports several endangered plants and animals, including transplanted colonies of palmate-bracted birds-beak, several species of fairy shrimp, vernal pool tadpole shrimp, giant garter snake, wintering peregrine falcon, bald eagle, and breeding tricolored blackbird. Resident wildlife includes grebe, heron, blackbird, golden eagle, beaver, muskrat, black-tailed deer, and other species typical of upland and wetland habitats. Approximately 9,000 people hunt on the refuge each year, and 73,000 people use the visitor center, auto tour route, and walking trail.

Willow Creek-Lurline Wildlife Management Area. The Willow Creek-Lurline Wildlife Management Area is an approximately 20,000 acre area that has been approved for acquisition of conservation easements on privately owned wetlands to protect fall/winter habitat for waterfowl. Approximately 12,000 acres of the Wildlife Management Area are privately owned for the purpose of waterfowl hunting. Conservation easements have been acquired on approximately 6,000 acres, requiring landowners to maintain land in wetlands. The area is surrounded by intensive agriculture (rice and other grains). These privately-owned lands are closed to public access.

North Central Valley Wildlife Management Area. The North Central Valley Wildlife Management Area was established primarily to protect wintering habitat for waterfowl. Under the North Central Valley WMA the USFWS has the authority to purchase conservation easements on up to 48,750 acres of private lands located within an 11 county area of the Sacramento Valley. Within this management area, the Service has purchased conservation easements on 11,811 acres from willing landowners to protect wildlife habitat. In exchange for payment, the landowners agree to maintain wetlands and other habitats on their property in perpetuity. These Wildlife Management lands are privately owned and not open for public access.

State Recreational Areas

Colusa-Sacramento River State Recreation Area. The Colusa-Sacramento River State Recreation Area has 67 acres along the Sacramento River. Wildlife in the area includes deer, raccoons, opossums, foxes, skunks and muskrats, which are sheltered by riverbank cottonwood and willow trees. Wild grape and fig are among many other shrubs, trees and plants along the river. Common bird species include ring-necked pheasants, California quail, mallard ducks, Canada geese, western meadowlarks, northern flickers and ospreys. This facility provides 14 campsites, picnic sites, and a launch ramp for small boats, and is also within walking distance of the City of Colusa's downtown.

State Wildlife Areas

Colusa Bypass Wildlife Area. This 1,248 acre wildlife area is mostly grasslands with several rows of willows and cottonwood trees that line the eastern edge of the property. Excess water is diverted into the area from the Sacramento River during high flows in the winter. The area provides a significant amount of cover for mammals and both resident and migratory birds. Hunting is allowed and opportunities are mostly for upland game, including deer, pheasant, snipe, and dove. Bird watching and wildlife viewing are also common.

Sacramento River Wildlife Area. This 4,014 acres of wildlife area is located in 14 separate units along the west and east side of the Sacramento River in Butte, Glenn, and Colusa Counties. The wildlife area is a riparian forest dominated by cottonwood, willow, ash, sycamore, and box elder trees with a dense understory of wild grape, pipevine, poison oak and grasslands, oxbow lakes, and gravel bars. Common wildlife along the river includes otters, beavers, gray fox, bobcat, western pond turtles, ash-throated flycatchers, great blue herons, egrets, and a variety of birds of prey. Hunting is allowed and opportunities are mostly for deer, quail, turnkey, and dove. Fishing, trapping, and bird watching are also common.

U.S. Reclamation Projects

East Park Reservoir. East Park Reservoir was authorized in 1907 by the federal government as a storage facility to provide irrigation waters, under the Orland Project. East Park Reservoir is in the northwestern part of Colusa County few miles southeast of Stonyford and northwest of Lodoga. The total land area around the reservoir is 2,468 acres and the total water surface is 1,820 acres. Common mammals are wild pigs, coyotes, blacktail deer, tule elk, ground squirrels and black-tailed jackrabbits. Canada geese, bald eagles, a wide variety of ducks and bird species, and the special

status tri-colored blackbird can be seen around the reservoir. East Park Reservoir provides opportunities for camping, boating, picnicking and fishing.

Tehama-Colusa Canal. The Tehama-Colusa Canal is a canal that carries diverted water from the Red Bluff Diversion Dam along a 110-mile canal. The canal initially carries 2,530 cubic feet per second, and at its terminus 1,700 cubic feet per second. The canal was built from 1965 to 1980. An 80-foot dam called Funks Dam controls water flow along the Tehama-Colusa Canal. Funk Reservoir backs up behind the dam. Five pump plants take water from the canal and feed it into the Colusa County water distribution grid.

American Land Conservancy

Bear Valley Ranch. A conservation easement over the 16,513-acre Bear Valley Ranch was acquired by the American Land Conservancy in 2001. The conservation easement permanently precludes development on the property, while permitting traditional cattle ranching. The ranch is known as having one of the state's most spectacular wildflower displays. This conservation easement was funded by the California Wildlife Conservation Board and the David and Lucile Packard Foundation. The easement is monitored by California Rangeland Trust.

Sulphur Creek. The American Land Conservancy acquired 1,531 acres in the Sulphur Creek valley in 1999. The Sulphur Creek valley is part of a 6,500-acre watershed located in the coastal range. From 2002 to 2005, the American Land Conservancy oversaw a three-year restoration effort on the property that was funded by the California Wildlife Conservation Board. The area was once heavily mined for gold, but is now known for the natural hot springs that are part of the historic Wilbur Hot Springs resort. The American Land Conservancy sold the resort to subject to a conservation easement that precludes development of the land and protects the oak woodlands, grasslands and riparian habitat.

Payne Ranch. A conservation easement over the 3,140-acre Payne Ranch was acquired by the American Land Conservancy in 2006. Payne Ranch is a private working cattle ranch in Colusa County. The southern border of the Payne Ranch is contiguous to 27,245 acres specially-designated as the Cache Creek Wilderness Area, home to one of the largest free roaming Tule Elk populations in California, the second largest wintering bald eagle population in the state, as well as numerous rare and endangered plant and animal communities. The conservation easement conserves the agricultural, ecological, and scenic resources of the property while contributing to the environmental health of the surrounding 70,000-acre Cache Creek Natural Area. The Payne Ranch connects to two other American Land Conservancy projects in the region – Bear Valley Ranch and Sulphur Creek, which together conserve nearly 20,000 acres that contribute to the region's rich biodiversity. The conservation easement was funded by the California Wildlife Conservation Board.

REGIONALLY IMPORTANT HABITAT AND WILDLIFE

Oak Woodlands

Oak woodlands are rich in wildlife and are a favored place for people to recreate, build their homes, and pursue their livelihoods. Unfortunately, oak woodlands are disappearing throughout the state. They are being lost to intensive agriculture, woodcutting, housing and other urban development, and where they remain they have had regenerative problems.

Colusa County contains approximately 133,000 acres of oak woodlands and ten different oak species including: interior live oak (*Quercus wislizeni*), canyon live oak (*Q. chrysolepis*), black oak (*Q. kelloggii*), scrub oak (*Q. berberidifolia*), valley oak (*Q. lobata*), Oregon white oak (*Q. garryana*), blue oak (*Q. douglasii*), leather oak (*Q. durata*), Huckleberry oak (*Q. vaccinifolia*), and Palmer’s oak (*Q. Palmeri*). These oak woodlands are classified into the following six communities: blue oak woodland, blue oak / foothill pine woodland, montane hardwood, montane hardwood-conifer, valley oak woodland, and valley foothill riparian. Table 3.4-3 provides a breakdown of the acreage associated with each oak woodland community. Figure 3.4-1 provides an illustration showing the distribution of oak woodlands within Colusa County.

TABLE 3.4-3: OAK WOODLAND COMMUNITIES	
COMMUNITY	ACREAGE
Blue Oak Woodland	77,111.9
Blue Oak-Foothill Pine	10,429.3
Montane Hardwood	29,822.6
Montane Hardwood-Conifer	10,727.1
Valley Foothill Riparian	3,636.6
Valley Oak Woodland	1,222.6
Total	132,950.0

SOURCE: CASIL GIS DATA, 2009

Large private ranches make up the bulk of the oak woodlands in the foothills located on the west side of Colusa County. Within these oak-covered landscapes, cattle production has become the primary economic activity. The county’s cattle industry is the fifth largest contributor to its economy, behind rice, almonds, tomatoes and walnuts. In addition, productive ranches provide many benefits to all county residents including; wildlife habitat, open-space, recreation lands, honey bee forage, fire control, weed management, and remote watersheds that produce abundant clean water.

Oak woodlands harbor a rich diversity of native plant and wildlife species. The combination of the county’s mild Mediterranean climate and the abundant food provided by acorns allow many

animal species to remain here year-round. Oak woodlands also provide critical wintertime habitat to migratory species that spend their summers at higher elevations. Because of these qualities, oak woodlands are thought to have the richest wildlife species abundance of any habitat in California with estimates of 331 species according to the CDFG. Oak woodlands provide habitat for a number of threatened and endangered species. Additionally, many of the state's species of special concern are found within oak woodlands. Because oak woodlands are widely distributed, they often create a mosaic of plant communities in which other less common habitats occur such as vernal pools, wetlands, grasslands, and riparian.

As the county's population grows, there will be continuing pressure to convert oak woodlands to more intensive uses such as housing and ranchettes. The problems associated with development in oak woodlands often creates infrastructure problems and decreases wildlife habitat values. Fire safety needs increase because a greater population is at risk and because there are more opportunities for wildfire ignition by human activities.

Tule Elk Population

Tule elk are endemic to California and the most specialized elk in North America. It is the smallest subspecies of all American elks, with the average weight of adult males only 450 - 550 pounds and adult females only at 375 - 425 pounds. In its historic range, the tule elk once occupied much of California's Central Valley. Their range spanned east of the foothills of the Sierra Nevada west to the coast line and north from the headwaters of the Sacramento River south to the Tehachapi Mountains.

Accounts in journals and diaries of early explorers indicate that approximately 500,000 tule elk inhabited the State. Between 1800 and 1840 hide and tallow hunters took large numbers of elk. In 1873 a law was passed to fully protect tule elk, although at that time it was unclear if any even remained. By the turn of the century, the population of elk had expanded and was causing extensive damage to fences, crops, and irrigated pasture. At this time, the California Academy of Science took over a tule elk relocation effort whereby they relocated 235 tule elk to 22 different locations, including Cache Creek. Tule elk at Cache Creek were allowed to expand their range and, until the summer of 1986, did not cause significant damage to private property. Currently there are 21 herds of tule elk throughout California with numbers estimated at about 3,800.

Competition with domestic stock has been shown to be a minor threat to tule elk. However, overgrazing or high intensity grazing can leave large areas with no food value for the elk for extended periods of time. Conflicts between ranchers and elk have historically posed a problem. Elk are an increasingly popular game animal, and management efforts in the last few decades have caused the population to grow. As the numbers increase so does the incidence and intensity of damage to agriculture.

Continued human development and encroachment is a threat to tule elk. A large portion of their range is on private property with no permanent protection. There is a constant threat of development or subdividing the properties into small ranches. One of the other major threats is habitat degradation and invasive noxious weeds. Exotic weed species (star thistle) is a large problem for the Cache Creek herd, as it has taken over many acres of otherwise suitable habitat.

Deer Population

Columbian black-tailed deer (*Odocoileus hemionus columbianus*) are not recognized as a special-status species; however, preserving deer habitat and migration corridors is of concern to the CDFG in many foothill and mountainous regions of California. The CDFG has divided the State into 11 Deer Assessment Units (DAUs). Colusa County's is located within Unit 5 (Central Sierra) and Unit 8 (Central Coast-North). The deer herds of Unit 5 are largely migratory deer located within the west slope of the Sierra Nevada Mountain range, with smaller resident populations along the Sacramento Valley floor including Colusa County. The deer herds of Unit 8 are largely resident animals that exhibit some upslope/downslope movement with seasonal changes in weather and forage conditions.

Deer within Colusa County are common within the forest communities where common habitat includes several oak species, western mountain mahogany, chamise, riparian-wetland areas, willow/birch, ceanothus, and manzanita. Deer are also common in the foothill communities where common habitat includes oak-woodland, oak-annual grass savanna, and chaparral shrub stands. Deer are less common, but can be found in the valley floor in agricultural fields, pastures, and riparian areas.

Salmon and Steelhead Trout Fisheries

Salmon and steelhead trout are anadromous fish species that are present in the Sacramento River Basin. Anadromous fish are born in freshwater rivers and streams, and then migrate to the Pacific Ocean to grow and mature before returning to their place of origin to spawn. The Sacramento River system produces most of the Chinook salmon (*Oncorhynchus tshawytscha*) and a large percentage of the steelhead trout (*Oncorhynchus mykiss*) in California.

Anadromous fish resources once flourished naturally in the Sacramento River system, but as a result of habitat destruction from water storage/diversion projects, mining, sedimentation, and bank degradation, they are protected species under the Endangered Species Act. The Sacramento River system has historically supported steelhead trout and four distinct spawning runs of Chinook salmon: fall, late fall, winter, and spring. The salmon runs have declined since the late 1800s and are now characterized as episodic. The Central Valley steelhead was federally listed as threatened in 2003. The fall/late fall-run salmon is a federal and state species of concern, and a candidate species for federal listing. The spring-run Chinook salmon population is listed as threatened by both federal and state agencies. Winter-run Chinook salmon population is listed as a federally and state endangered species. Populations of Central Valley Steelhead and Chinook salmon are supported by hatcheries within the Sacramento River Basin.

Water remaining behind the dams by the start of the spawning run in October is often warmed by summer heat. Warm water and low water elevation are harmful to most coldwater anadromous fish species. Riparian vegetation is critical for the maintenance of high quality fish habitat. It provides cover, controls temperature, stabilizes stream banks, provides food, and buffers streams from erosion and impacts of adjacent land uses. Riparian vegetation also affects stream depth, current velocity, and substrate composition. The decline of riparian communities in California is a factor contributing to the loss of high quality fish habitat.

WATERSHEDS

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.4-4 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.4-4: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

WATERSHED LEVEL	APPROXIMATE SQUARE MILES (ACRES)	DESCRIPTION
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2009

Hydrologic Regions/Units in Colusa County

The majority of Colusa County is considered part of the Sacramento River Hydrologic Region. However, a small, north-western corner of the County contributes its drainage to the Pacific through the North Coast Hydrologic Region.

Sacramento River Hydrologic Region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties, and small areas of Alpine and Amador counties. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains.

North Coast Hydrologic Region. The North Coast hydrologic region covers approximately 12.46 million acres (19,470 square miles) and includes all or portions of Modoc, Siskiyou, Del Norte,

Trinity, Humboldt, Mendocino, Lake, and Sonoma counties, and small areas of Shasta, Tehama, Glenn, Colusa, and Marin counties. Extending from the Oregon border south to Tomales Bay, the region includes portions of four geomorphic provinces.

Hydrologic Units. Within Colusa County there are five hydrologic units. These include the Cache Creek, Cortina, Colusa Basin, Stony Creek, and Upper Elmira.

Hydrologic Areas

For purposes of planning on a County-wide basis, hydrologic areas are generally considered to be the appropriate watershed planning level. As specific projects within the County are developed the hydrologic area level may be too large in terms of scale, and a hydrologic subarea may be considered more appropriate. The remainder of this section is based on the hydrologic area level for watershed planning purposes.

Colusa County is located within 12 hydrologic areas. These include: Bear Creek, Butte Basin, Cortina Creek, East Blue Ridge, Fouts Springs, Glenn Colusa, Logan Creek, Lower Cache Creek, Middle Cache Creek, Stone Corral, Sycamore Sutter, and Whiskey Creek. Table 3.4-5 provides a breakdown of the acreages of each watershed within Colusa County.

TABLE 3.4-5: WATERSHEDS (HYDROLOGIC AREAS)

HYDROLOGIC AREA	ACREAGE
Bear Creek	65,746.00
Butte Basin	43,200.20
Cortina Creek	11,327.50
East Blue Ridge	33.72
Fouts Springs	110,769.00
Glenn Colusa	288,804.00
Logan Creek	2,916.90
Lower Cache Creek	48.65
Middle Cache Creek	570.15
Stone Corral Creek	94,779.10
Sycamore-Sutter	103,713.00
Whiskey Hill	18,348.90
Total	740,257.12

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2009

Impaired Water Bodies

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish Water quality-based controls. The

3.4 BIOLOGICAL AND NATURAL RESOURCES

purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

Five watersheds within Colusa County have Section 303(d) listed impaired water bodies. The impaired water bodies are located within the Butte Basin, Glenn Colusa, Sycamore-Sutter, East Blue Ridge, and Bear Creek hydrologic areas. These hydrologic areas extend beyond the county boundary so not all impaired water body segments are located within Colusa County. The pollution source is predominantly agricultural and crop related, although mercury, and resource extraction is also a pollution source. There are a few pollution sources that are not currently known.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the CNDDDB, the CNPS Inventory of Rare and Endangered Plants, and the USFWS endangered and threatened species lists. The background search was regional in scope and focused on the documented occurrences within the region.

Special Status Plants

The search revealed documented occurrences of the 43 special status plant species within Colusa County. Table 3.4-6 provides a list of special-status plant species that are documented in the region, their habitat, and current protective status. Figure 3.4-3 illustrates the location of each documented occurrence.

TABLE 3.4-6: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY		
SPECIES	STATUS	HABITAT
PLANTS		
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	--;--;1B	Cismontane woodland, valley and foothill grassland. 50-500M.
<i>Anisocarpus scabridus</i> scabrid alpine tarplant	--;--;1B	Upper montane coniferous forest. Open stony ridges, metamorphic slopes of mountain peaks, and cliffs in or near red fir forest. 1650-2300M.
<i>Antirrhinum subcordatum</i> dimorphic snapdragon	--;--;4	Chaparral, lower montane coniferous forest. Generally on serpentine or shale in foothill woodland or chaparral on S. and W. facing slopes. 185-800M.
<i>Arctostaphylos canescens</i> ssp. <i>sonomensis</i> Sonoma canescent manzanita	--;--;1B	Chaparral, lower montane coniferous forest. Sometimes found on serpentine. 180-1700M.
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i> Konocti manzanita	--;--;1B	Chaparral, cismontane, lower montane coniferous forest. Volcanic soils. 395-1400M.
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	--;--;1B	Cismontane woodland, valley and foothill grassland, chaparral. Commonly on serpentine in grassland or openings in chaparral

TABLE 3.4-6: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY

SPECIES	STATUS	HABITAT
Jepson's milk-vetch		320-700M.
<i>Astragalus tener</i> var. <i>ferrisiae</i> Ferris' milk-vetch	--;--;1B	Meadows, valley and foothill grassland. Subalkaline flats on overflow land in the Central Valley; usually seen in dry adobe soil. 5-75M.
<i>Atriplex cordulata</i> Heartscale	--;--;1B	Chenopod scrub, meadows, seeps, Sandy soils in the valley and foothill grasslands (Dry alkaline flats)
<i>Atriplex depressa</i> Brittlescale	--;--;1B	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools (Alkaline flats and clay soils)
<i>Atriplex joaquinian</i> San Joaquin spearscale	--;--;1B	Chenopod scrub, alkali meadow, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub 1-250M.
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> Big-scale balsamroot	--;--;1B	Chaparral, cismontane woodland, and valley and foothill grassland (Open, grassy slopes, and valleys, sometimes on serpentine soils)
<i>Botrychium crenulatum</i> scaloped moonwort	--;--;2	Bogs and fens, meadows, lower montane coniferous forest, freshwater marsh, moist meadows, near creeks. 1500-2670M.
<i>Brodiaea coronaria</i> ssp. <i>rosea</i> Indian Valley brodiaea	--;CE;1B	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland, meadows. Serpentine gravelly creek bottoms, and in meadows and swales. 335-1450M.
<i>California macrophylla</i> round-leaved filaree	--;--;1B	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1200M.
<i>Calycadenia micrantha</i> small-flowered calycadenia	--;--;1B	Chaparral, valley and foothill grassland, meadows and seeps, lower montane coniferous forest. Rocky talus, sparsely vegetated areas. Occasionally on roadsides, sometimes on serpentine. 5-1500M.
<i>Carex klamathensis</i> Klamath sedge	--;--;1B	Meadows and seeps, chaparral, cismontane woodland. Serpentine. 1000-1140M.
<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i> pink creamsacs	--;--;1B	Chaparral, meadows, and seeps, valley and foothill grassland. Openings in chaparral or grasslands. Serpentine. 20-900M.
<i>Chlorogalum pomeridianum</i> var. <i>minus</i> dwarf soaproot	--;--;1B	Chaparral, valley and foothill grassland. Serpentine. 240-970M.
<i>Cordylanthus palmatus</i> palmate-bracted bird's-	FE;CE;1 B	Chenopod scrub, valley and foothill grassland. Usually on Pescadero silty clay which is alkaline, with <i>Distichilis</i> , <i>Frankenia</i> , etc. ETC. 5-155M.

TABLE 3.4-6: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY

SPECIES	STATUS	HABITAT
beak		
<i>Cryptantha excavat</i> deep-scarred cryptantha	--;--;1B	Cismontane woodland. Sandy, gravelly, dry stream banks. 100-500M.
<i>Delphinium recurvatum</i> Recurved larkspur	--;--;1B	Cismontane woodland and valley and foothill grasslands (Alkaline soils)
<i>Didymodon norrisii</i> Norris' beard moss	--;--;2	Cismontane woodland, lower montane coniferous forest. Moss from intermittently mesic sites. On rocks. 600-1700M.
<i>Epilobium nivium</i> Snow Mountain willowherb	--;--;1B	Upper montane coniferous forest, chaparral. In crevices of rocky outcrops, and dry talus and shale slopes. 785-2500M.
<i>Eriastrum brandegeae</i> Brandegee's eriastrum	--;--;1B	Chaparral, cismontane woodland on barren volcanic soils; often in open areas. 345-1000M.
<i>Eriastrum tracyi</i> Tracy's eriastrum	--;CR;1B	Chaparral, cismontane woodland. Gravelly shale or clay; often in open areas. 315-760M.
<i>Eriogonum nervulosum</i> Snow Mountain buckwheat	--;--;1B	Chaparral. Dry serpentine outcrops, balds, and barrens. 300-2100M.
<i>Eschscholzia rhombipetala</i> diamond-petaled California poppy	--;--;1B	Valley and foothill grassland. Alkaline, clay slopes and flats. 0-975M.
<i>Fritillaria pluriflora</i> adobe-lily	--;--;1B	Chaparral, cismontane woodland, foothill grassland. Usually on clay soils; sometimes serpentine. 55-820M.
<i>Harmonia hallii</i> Hall's harmonia	--;--;1B	Chaparral. Serpentine hills and ridges. Open, rocky areas within chaparral. 500-900M.
<i>Hesperolinon drymarioides</i> drymaria-like western flax	--;--;1B	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland. Serpentine soils, mostly within chaparral. 390-1000M.
<i>Hibiscus lasiocarpus</i> woolly rose-mallow	--;--;2	Marshes and swamps (freshwater). Moist, freshwater soaked river banks and low peat islands in sloughs; in California, known from the Delta Watershed. 0-150M.
<i>Horkelia bolanderi</i> Bolander's horkelia	--;--;1B	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland. Grassy margins of vernal pools and meadows. 450-850M.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--;--;1B	Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-1400M.

TABLE 3.4-6: SPECIAL STATUS PLANTS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY

SPECIES	STATUS	HABITAT
Coulter's goldfields		
<i>Layia septentrionalis</i> Colusa layia	--;--;1B	Chaparral, cismontane woodland, valley and foothill grassland, scattered colonies in fields and grassy slopes in sandy or serpentine soil. 145-1095M.
<i>Lotus rubriflorus</i> red-flowered bird's-foot-trefoil	--;--;1B	Valley and foothill grassland, cismontane woodland. Most recent sightings' from sterile, red soils-volcanic mudflow deposits. 200-425M.
<i>Lupinus milo-bakeri</i> Milo Baker's lupine	--;CT;1B	Cismontane woodland, valley and foothill grassland in roadside ditches, dry gravelly areas along roads, and along small streams. 360-440M.
<i>Lupinus sericatus</i> Cobb Mountain lupine	--;--;1B	Chaparral, cismontane woodland, lower montane coniferous forest. In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. 180-1500M.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	--;--;1B	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Vernal pools and swales, adobe or alkaline soils. 5-950M.
<i>Neostapfia colusana</i> Colusa grass	FT;CE;1 B	Vernal pools. Usually in large, or deep vernal pool bottoms; adobe soils. 5-110M.
<i>Sidalcea keckii</i> Keck's checkerbloom	FE;--;1B	Cismontane woodland, valley and foothill grassland. Grassy slopes in blue oak woodland. 180-425M.
<i>Silene campanulata</i> ssp. <i>campanulata</i> Red Mountain catchfly	--;CE;4	Lower montane coniferous forest, chaparral. State listed endangered, but CNPS list 4; Rocky dry shallow serpentine soil. 420-1200M.
<i>Streptanthus morrisonii</i> Morrison's jewel-flower	--;--;1B	Chaparral, cismontane woodland, closed-cone coniferous forest. Serpentine. The complex has been mapped as the species, though at least 4 ssp. have been recognized. 210-910M.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	--;--;2	Marshes and swamps, riparian forest, meadows and seeps, vernal pools. Mud flats of vernal lakes, drying river beds, alkali meadows. 5-435M.

SOURCE: DFG CNDDDB 2009

ABBREVIATIONS:

- FE FEDERAL ENDANGERED
- FT FEDERAL THREATENED
- CE CALIFORNIA ENDANGERED SPECIES
- CT CALIFORNIA THREATENED
- CR CALIFORNIA RARE (PROTECTED BY NATIVE PLANT PROTECTION ACT)
- 1B CNPS - RARE, THREATENED, OR ENDANGERED

3.4 BIOLOGICAL AND NATURAL RESOURCES

- 2 CNPS - RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE
 4 CNPS - PLANTS OF LIMITED DISTRIBUTION - A WATCH LIST

Special Status Animals

The search revealed documented occurrences of the 38 special status animal species within Colusa County including: eight invertebrates, four amphibians/reptiles, 16 birds, and 10 mammals. Table 3.4-7 provides a list of the special-status animal species that are documented in Colusa County, their habitat, and current protective status. Figure 3.4-4 illustrates the location of each documented occurrence.

TABLE 3.4-7: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY

SPECIES	STATUS	HABITAT
INVERTEBRATES		
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT;--	Endemic to grasslands of the central valley, central coast mtns., and south coast mtns., in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
<i>Cicindela hirticollis abrupta</i> Sacramento Valley tiger beetle	FSC;--	Sandy areas, dry paths or fields.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT;--	Occurs only in the central valley of California, in association with blue elderberry (<i>Sambucus mexicana</i>). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	FE;--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed & highly turbid.
<i>Ochthebius reticulatus</i> Wilbur Springs minute moss beetle	--;--	Aquatic; known only from Wilbur Hot Springs Area, Colusa County; 1250 ft elevation. Inhabits the shoreline of the creek at Wilbur Hot Springs.
<i>Paracoenia calida</i> Wilber Springs shore fly	--;--	Endemic to Wilbur Hot Springs, Colusa County. Inhabits all but the hottest portion of the hot springs effluent; water temp 20-40 degrees Celsius.
<i>Saldula usingeri</i> Wilbur Springs shorebug	--;--	Requires springs/creeks with high concentration of NA, CL, & LI. Found only on wet substrate of spring outflows.
<i>Trachykele hartman</i> serpentine cypress wood-boring beetle	--;--	Larvae develop in argent cypress. Restricted to Napa, Colusa, and Lake Counties.

TABLE 3.4-7: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY

SPECIES	STATUS	HABITAT
AMPHIBIANS/REPTILES		
<i>Actinemys marmorata</i> western pond turtle	--;CSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.
<i>Rana boylei</i> foothill yellow-legged frog	FSC;CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.
<i>Spea hammondi</i> western spadefoot toad	FSC;CSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.
<i>Thamnophis gigas</i> Giant garter snake	FT;CT	Freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. Also has adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields.
BIRDS		
<i>Accipiter cooperii</i> Cooper's hawk	MBTA; Raptor	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, and in canyon bottoms on ripper flood-plains; also in live oaks.
<i>Agelaius tricolor</i> tricolored blackbird	FSC;CSC	Highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.
<i>Aquila chrysaetos</i> golden eagle	MBTA; CP	Rolling foothills, mountain areas, sage juniper flats, and desert. Cliff walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
<i>Athene cuniculari</i> Burrowing owl	FSC; CSC/ Raptor	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
<i>Branta hutchinsii leucopareia</i> cackling (=Aleutian Canada) goose	FD;--	Winter resident of agricultural lands.
<i>Buteo swainsoni</i> Swainson's hawk	FSC; CT	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranches. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.

TABLE 3.4-7: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY

SPECIES	STATUS	HABITAT
<i>Charadrius montanus</i> mountain plover	FSC/ MBTA	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground & flat topography. Prefers grazed areas and areas with burrowing rodents.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	FSC/FC; CE	Nesting restricted to river bottoms and other mesic habitats where humidity is high.
<i>Egretta thula</i> snowy egret	FSC/ MBTA	Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas; marshes, tidal flats, streams, wet meadows, and borders of lakes.
<i>Elanus leucurus</i> white-tailed kite	MBTA; CP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated dense-topped trees for nesting and perching.
<i>Falco mexicanus</i> prairie falcon	FSC/ MBTA; Raptor	Inhabits dry, open terrain, either level or hilly breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
<i>Haliaeetus leucocephalus</i> bald eagle	FSC/FD; CE/CP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within one mile of water. Nests in large, old-growth, or dominant live three w/open branches especially ponderosa pine. Roosts communally in winter.
<i>Nycticorax nycticorax</i> black-crowned night heron	MBTA;--	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.
<i>Pandion haliaetus</i> osprey	MBTA; Raptor	Ocean shore, bays, fresh water lakes, and larger streams. Large nests built in tree tops within 15 miles of a good fish producing body of water.
<i>Plegadis chihi</i> White-faced Ibis	--; CSC	Nests in dense, fresh emergent wetlands.
<i>Riparia riparia</i> bank swallow	--;CT;--	Restricted to riparian areas with vertical cliffs and banks with fine-textured or sandy soils while breeding.
MAMMALS		
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--;CSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open hangins from walls and ceilings. Roosting sites limited. Extremely sensitive to human disturbance.

TABLE 3.4-7: SPECIAL STATUS ANIMALS PRESENT OR POTENTIALLY PRESENT IN COLUSA COUNTY		
SPECIES	STATUS	HABITAT
<i>Lasionycteris noctivagans</i> silver-haired bat	--;--	Primarily a coastal & montane forest dweller feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes & rarely under rocks. Needs drinking water.
<i>Lasiurus blossevillei</i> western red bat	FSC;CSC	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat at edges & mosaics with trees that are protected from above & open below with open areas for foraging.
<i>Lasiurus cinereus</i> hoary bat	--;--	Prefers open habitat or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. requires water.
<i>Martes americana humboldtensis</i> Humboldt marten	--;CSC	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late succession coniferous forests, prefer forests with low, overhead cover.
<i>Martes pennanti pacifica</i> Pacific fisher	FC;CSC	Occurs in intermediate to large-tree stages of coniferous forests and deciduous-riparian habitats with a high percentage of canopy closure.
<i>Myotis ciliolabrum</i> western small-footed myotis	FSC;--	Wide range of habitats mostly arid wooded & brushy uplands near water. Seeks cover in caves, buildings, mines & crevices. Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects.
<i>Myotis yumanensis</i> Yuma myotis	FSC;--	Reside in open forests and woodland habitats with sources of water over which to feed. Roost in buildings, mines, caves, and crevices.
<i>Perognathus inornatus</i> San Joaquin Pocket Mouse	FSC;--	Annual grassland and scrub habitats with fine-textured soil conditions.
<i>Taxidea taxus</i> American badger	--;CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils and open, uncultivated ground. Prey on burrowing rodents. Dig burrows.

SOURCE: DFG CNDDDB 2009

ABBREVIATIONS:

- FE FEDERAL ENDANGERED
- FT FEDERAL THREATENED
- FC FEDERAL CANDIDATE
- FSC FEDERAL SPECIES OF CONCERN
- FD FEDERAL DELISTED
- MBTA PROTECTED BY MIGRATORY BIRD TREATY ACT
- CE CALIFORNIA ENDANGERED SPECIES
- CT CALIFORNIA THREATENED

CP CALIFORNIA FULLY PROTECTED UNDER §3511, 4700, 5050 AND 5515 FG CODE
CSC CDFG SPECIES OF SPECIAL CONCERN

Special Status Communities

The search revealed documented occurrences of eight sensitive natural communities within Colusa County and a brief description follows. Figure 3.4-5 illustrates the location of each natural community.

Coastal and Valley Freshwater Marsh. Coastal and Valley Freshwater Marsh is found along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, and they are the most extensive in the upper portion of the Sacramento-San Joaquin River Delta. This natural community is common in the river oxbows and other areas of a flood plain. This natural community is found in areas that lack significant stream/river current and are permanently flooded by fresh water (rather than brackish, alkaline, or variable). Prolonged saturation permits accumulation of deep, peaty soils. Perennial, emergent monocots up to 4-5m tall dominate this habitat. They often form completely closed canopies.

Great Valley Cottonwood Riparian Forest. Great Valley Cottonwood Riparian Forest is found in fine-grained alluvial soils near perennial or nearly-perennial streams that provide subsurface irrigation even when the channel is dry. These sites are inundated yearly during spring, resulting in annual input of nutrients, soil, and new germination sites. This natural community is a dense, broadleaved, winter-deciduous riparian forest dominated by Fremont's cottonwood (*Populus fremontii*) and San Joaquin willow (*Salix goodingii*). Understories are dense, with abundant vegetative reproduction of canopy dominants. California wild grape (*Vitis californica*) is the most conspicuous vine species. Scattered seedlings and saplings of shade-tolerant species such as Box elder (*Acer negundo*) or Oregon ash (*Fraxinus latifolia*) may be found, but frequent flooding prevents their reaching into the canopy.

Great Valley Mixed Riparian Forest. Great Valley Mixed Riparian Forest is found on relatively fine-textured alluvium somewhat back from active river channels. These sites experience overbank flooding (with abundant alluvial deposition and groundwater recharge) but not too severe physical battering or erosion. This natural community is a tall, dense, winter-deciduous, broadleaved riparian forest with a tree canopy that is fairly well closed and moderately to densely stocked with several species including Box elder (*Acer negundo*), California black walnut (*Juglans hindsii*), California sycamore (*Platanus racemosa*), Fremont's cottonwood (*Populus fremontii*) and San Joaquin willow (*Salix goodingii*), red willow (*Salix laevigata*), and shining willow (*Salix lucida*). Understories consist of these taxa plus shade-tolerant shrubs like buttonbush (*Cephalanthus occidentalis*) and Oregon ash (*Fraxinus latifolia*). Several vine species are conspicuous in both tree and shrub canopies.

Great Valley Willow Scrub. The Great Valley Willow Scrub are found along all of the major rivers and most of the smaller streams throughout the Great Valley watershed. This natural community is an open to dense, broadleaved, winter-deciduous shrubby streamside thicket dominated by any of several willow species (*Salix* spp.). Dense stands usually have little understory or herbaceous

component, while more open stands have grassy understories, usually dominated by introduced species.

Northern Claypan Vernal Pool. Northern Claypan Vernal Pool is found on lower terraces and basin rims, toward the valley trough in the Central San Joaquin Valley north to Glenn and Colusa counties. The sites are considered fairly old, circum-neutral to alkaline, Si-cemented hardpan soils. They are often more or less saline. Pools may be small (a few square meters) or quite large (covering several acres) and they generally have lower overall plant coverage compared to other vernal pool communities.

Serpentine Bunchgrass. Serpentine Bunchgrass grassland occurs on chemically unique serpentine soils, and is primarily composed of purple needlegrass (*Nassella pulchra*) and a variety of native and introduced annual plants.

Valley Needlegrass Grassland. Valley Needlegrass Grassland is a mid-height (to 2 feet) grassland dominated by perennial, tussock-forming purple needlegrass (*Nassella pulchra*). Native and introduced annuals occur between the perennials, often exceeding the bunchgrasses in cover. They are usually found on fine-textured (often clay) soils, moist or even waterlogged during the winter, but very dry in the summer. Often associated with Oak Woodlands on moister, better drained sites.

Wildflower Field. Wildflower Fields are a mix of herb-dominated types noted for conspicuous annual wildflower displays. Dominance varies from site to site and from year to year at a particular site. They are usually found on fairly poor sites (droughty, low in nutrients), associated with Grasslands or Oak Woodlands on surrounding, more productive sites.

3.4.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the CDFG, USFWS, USACOE, and the National Marine Fisheries Service. These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. Federal and state agencies are increasingly involved with projects at the local level in Colusa County. The following is an overview of the federal, state and local regulations that are applicable to implementing the General Plan.

FEDERAL REGULATIONS

Federal Endangered Species Act

The Federal Endangered Species Act, passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a “take” unless a take permit is issued by the United States Fish and Wildlife Service. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, possess, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668) protect these birds from direct take and prohibits the take or commerce of any part of these species. The USFWS administers the act, and reviews federal agency actions that may affect these species.

Clean Water Act – Section 404

Section 404 of the CWA regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” [33 C.F.R. §328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACOE as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” [33 C.F.R. §328.3(e)].

The USACOE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Regional Water Quality Control Board. To obtain the water quality certification, the Regional Water Quality Control Board must indicate that the proposed fill would be consistent with the standards set forth by the state.

Department of Transportation Act - Section 4(f)

Section 4(f) has been part of Federal law since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966 and set forth in Title 49 United States Code (U.S.C.), Section 1653(f). In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C. Section 303. This law established policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites as follows:

It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. The Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

STATE REGULATIONS

Fish and Game Code §2050-2097 - California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

CESA was expanded upon the original Native Plant Protection Act and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Fish and Game Code §1900-1913 California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as

"rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFG 10 days in advance of approving a building site.

Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, possess, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Game Code §1601-1603 – Streambed Alteration

Under the California Fish and Game Code, CDFG has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a "Streambed Alteration Agreement" from CDFG prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFG may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFG warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

Public Resources Code § 21000 - California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFG. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

Public Resources Code § 21083.4 - Oak woodlands conservation

In 2004, the California legislature enacted SB 1334, which added oak woodland conservation regulations to the Public Resources Code. This new law requires a County to determine whether a project, within its jurisdiction, may result in a conversion of oak woodlands that will have a significant effect on the environment. If a County determines that there may be a significant effect

to oak woodlands, the County must require oak woodland mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands. Such mitigation alternatives include: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement trees; contribution of funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements; and/or other mitigation measures developed by the County.

California Oak Woodland Conservation Act

The California Legislature passed Assembly Bill 242, known as the California Oak Woodland Conservation Act, in 2001 as a result of widespread changes in land use patterns across the landscape that were fragmenting oak woodland character over extensive areas. The Act created the California Oak Woodland Conservation Program within the Wildlife Conservation Board. The legislation provides funding and incentives to ensure the future viability of California's oak woodland resources by maintaining large scale land holdings or smaller multiple holdings that are not divided into fragmented, nonfunctioning biological units. The Act acknowledged that the conservation of oak woodlands enhances the natural scenic beauty for residents and visitors, increases real property values, promotes ecological balance, provides habitat for over 300 wildlife species, moderates temperature extremes, reduces soil erosion, sustains water quality, and aids with nutrient cycling, all of which affect and improve the health, safety, and general welfare of the residents of the state.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

LOCAL REGULATIONS

Colusa County General Plan (1989)

The 1989 Colusa County General Plan Conservation Element contains goals, policies and measures that address the preservation, management, and utilization of the County's natural resources. The Conservation Element contains provisions for the conservation and protection of forests, water, rivers, soils, minerals, and air, as well as the preservation of agricultural uses, wildlife and fisheries.

The Conservation Element identifies the types of uses which are compatible with resource utilization, specifies measures necessary for the protection of human life and ecological values, and provides for recreational uses and the preservation of the County's scenery.

Colusa County Voluntary Oak Woodlands Management Plan

The purpose of this plan is to provide a consistent policy for conservation and use of oak woodlands throughout Colusa County. The plan provides direction to landowners, the local government, and developers. Lastly, the plan provides landowners in Colusa County with an opportunity to obtain funding through the California Oak Woodlands Conservation Program.

The plan's goals are to: encourage landowner stewardship through education and incentives; sustainable ranching practices; planning that is consistent with oak woodlands conservation; and public education and outreach regarding oak woodlands.

Conservation Easements

A conservation easement is a legal agreement between a landowner and a non-profit organization or government agency that limits certain uses of the land covered by the easement in order to protect its conservation values. It allows the landowner to continue to own and use the land and to sell it or pass it on to heirs. Each easement is individually negotiated and only certain rights to the land are purchased or donated. For example, the landowner might give up the right to build additional structures, while retaining the right to ranch or grow crops. Future owners are also bound by the easement's terms. An easement may apply to just a portion of the property, and need not require public access. If an easement is donated and it benefits the public by permanently protecting important conservation resources it may qualify as a tax-deductible charitable donation. Conservation easements can be useful for passing land on to the next generation. By removing the land's development potential, the easement lowers its market value, which in turn lowers estate tax. The landowner continues to pay property taxes that are usually assessed at a similar rate to properties protected under the Williamson Act.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on biological resources if it will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

IMPACTS AND MITIGATION

Impact 3.4-1: General Plan Implementation Could Result in Direct or Indirect Effects on Candidate, Sensitive, or Special-Status Species including their Habitat or Movement Corridors (less than significant)

Approval of the proposed project would not directly approve or entitle and any development or infrastructure projects. However, implementation of the General Plan and Land Use Map would allow and facilitate future development within Colusa County, which could result in adverse impacts to special-status plant and wildlife species, as well as sensitive natural habitat or wildlife movement corridors.

Special-Status Plant Species

The search of the California Natural Diversity Data Base revealed documented occurrences of 43 special status plant species within Colusa County. Table 3.4-6 provides a list of special-status plant species that are documented in the region, their habitat, and current protective status. Figure 3.4-3 illustrates the location of each documented occurrence. Subsequent development under the proposed General Plan could result in the direct loss of habitat areas associated with these special-status plant species, since suitable habitat for these species does occur in areas throughout the County. Additionally, indirect impacts to special-status plant species could occur with implementation of the General Plan. Indirect impacts could include habitat degradation as a result of impacts to water quality (see Section 3.9, Hydrology and Water Quality).

Special-status plant species receive protection from various federal and state laws and regulations, including FESA and CESA. These regulations generally prohibit the taking of the plant species without a special permit. Additionally, the proposed 2030 General Plan includes numerous policies and action items intended to reduce or avoid impacts to special-status plant species. These policies and action items are listed below.

Special-Status Wildlife Species

The search of the California Natural Diversity Data Base revealed documented occurrences of 38 special status animal species within Colusa County including: eight invertebrates, four

amphibians/reptiles, 16 birds, and 10 mammals. Table 3.4-7 provides a list of the special-status animal species that are documented in Colusa County, their habitat, and current protective status. Figure 3.4-4 illustrates the location of each documented occurrence. Subsequent development under the proposed General Plan could result in the direct loss of habitat areas associated with these special-status animal species, since suitable habitat for these species does occur in areas throughout the County. Additionally, indirect impacts to special-status animal species could occur with implementation of the General Plan. Indirect impacts could include habitat degradation as a result of impacts to water quality (see Section 3.9, Hydrology and Water Quality), increased human presence, and the loss of foraging habitat.

Special-status animal species receive protection from various federal and state laws and regulations, including FESA and CESA. These regulations generally prohibit the taking of a species or direct impact to foraging and breeding habitat without a special permit. Additionally, the proposed 2030 General Plan includes numerous policies and action items intended to reduce or avoid impacts to special-status animal species. These policies and action items are listed below.

Sensitive Natural Communities

In addition to the special-status species identified above, the CBDDDB search revealed eight sensitive natural communities. These communities include:

- Coastal and Valley Freshwater Marsh
- Great Valley Cottonwood Riparian Forest
- Great Valley Mixed Riparian Forest
- Great Valley Willow Scrub
- Northern Claypan Vernal Pool
- Serpentine Bunchgrass
- Valley Needlegrass Grassland
- Wildflower Field

Descriptions of these sensitive natural communities are provided previously in this section.

Some of the terrestrial and wetlands resources found in the County are of global as well as regional significance and are therefore considered sensitive natural communities. Wetlands, including vernal pools scattered throughout Colusa County and riparian habitat along the Sacramento River provide essential habitat for a host of endangered and threatened plant and animal species. Many other organisms, without official status, depend upon wetlands to complete their lifecycles.

Construction and maintenance activities associated with future development projects allowed under the proposed General Plan could result in the direct and indirect loss or indirect disturbance of special-status wildlife or plant species or their habitats that are known to occur, or have potential to occur, in the County. Impacts to special-status species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat

fragmentation. Significant impacts on special-status species associated with individual subsequent projects could include:

- increased mortality caused by higher numbers of automobiles in new areas of development;
- direct mortality from the collapse of underground burrows, resulting from soil compaction;
- direct mortality resulting from the movement of equipment and vehicles through construction areas;
- direct mortality resulting from removal of trees with active nests;
- direct mortality or loss of suitable habitat resulting from the trimming or removal of obligate host plants;
- direct mortality resulting from fill of wetlands features;
- loss of breeding and foraging habitat resulting from the filling of seasonal or perennial wetlands;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- loss of suitable habitat for vernal pool invertebrates resulting from the destruction or degradation of vernal pools or seasonal wetlands;
- abandoned eggs or young and subsequent nest failure for special-status nesting birds, including raptors, and other non-special status migratory birds resulting from construction-related noises;
- loss or disturbance of rookeries and other colonial nests;
- loss of suitable foraging habitat for special-status raptor species;
- loss of migration corridors resulting from the construction of permanent structures or features; and
- impacts to fisheries/species associated with waterways.

Subsequent development projects will be required to comply with the General Plan and adopted state, federal, and local regulations for the protection of special-status species. The County has prepared the 2030 General Plan to include numerous policies and action items intended to protect sensitive natural communities and special-status species from adverse effects associated with future development and improvement projects. The primary policies in the 2030 General Plan that provide for the protection of special-status species and sensitive habitat areas are policies CON 1-14, CON 1-17, and CON 1-18. Policy CON 1-14 requires any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Policy CON 1-17 requires all projects that identify special-status species or sensitive habitats in a biological resources evaluation to avoid

impacts to special-status species and their habitat to the maximum extent feasible. Where impacts cannot be avoided, Policy CON 1-17 requires that projects include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies. Effective strategies to avoid impacts or to mitigate impacts to special-status species and sensitive habitat are detailed in Policy CON 1-17. Policy CON 1-18 includes requirements that must be implemented during construction in areas that contain sensitive natural habitat in order to reduce or avoid potential impacts.

Action CON 1-C requires the County to review all subsequent development, infrastructure, long range planning, and other any other project that may potentially impact special-status species and/or sensitive habitat areas, and to include mitigation measures that reduce these impacts. This requirement must occur prior to ground disturbance or any other phase of a project that may potentially result in adverse impacts to these resources.

The implementation of these policies and action items would require a detailed and site-specific review of all subsequent projects under the General Plan to reduce, avoid, or compensate for impacts to special-status species or sensitive natural habitat. While future development has the potential to result in significant impacts to these resources, the implementation of the policies and action items listed below would reduce impacts to these resources to a **less than significant** level.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 1-7: Preserve and enhance those biological communities that contribute to the County's rich biodiversity including, but not limited to, blue oak woodlands, annual grasslands, mixed chaparral, pine woodlands, wetlands, riparian areas, aquatic habitat, and agricultural lands.

Policy CON 1-8: Conserve existing native vegetation where possible and integrate existing native vegetation into new development if appropriate.

Policy CON 1-14: Require any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Evaluations shall be carried out under the direction of the Colusa County Department of Planning and Building and consistent with applicable state and federal guidelines. Additional focused surveys shall be conducted during the appropriate season (e.g., nesting season, flowering season, etc.) if necessary.

Policy CON 1-17: All discretionary public and private projects that identify special-status species or sensitive habitats in a biological resources evaluation shall avoid impacts to special-status species and their habitat to the maximum extent feasible. Where impacts cannot be avoided, projects shall include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies with jurisdiction (if applicable) including, but not limited to, the following strategies:

- a. Preservation of habitat and connectivity of adequate size, quality, and configuration to support the special-status species. Connectivity shall be determined based on the specifics of the species' needs.*

- b. *Project design measures, such as clustering of structures or locating project features to avoid known locations of special-status species and/or sensitive habitats.*
- c. *Provision of supplemental planting and maintenance of grasses, shrubs, and trees of similar quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife.*
- d. *Protection for habitat and the known locations of special-status species through adequate buffering or other means.*
- e. *Provision of replacement habitat of like quantity and quality on- or off-site for special-status species.*
- f. *Enhancement of existing special-status species habitat values through restoration and replanting of native plant species.*
- g. *Provision of temporary or permanent buffers of adequate size (based on the specifics of the special-status species) to avoid nest abandonment by nesting migratory birds and raptors associated with construction and site development activities.*
- h. *Incorporation of the provisions or demonstration of compliance with applicable recovery plans for federally listed species.*
- i. *Monitoring of construction activities by a qualified biologist to avoid impacts to on-site special status species.*

Policy CON 1-18: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the following measures shall be implemented:

- a. *Pre-construction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special-status by the resource agencies, shall be conducted by a qualified biologist;*
- b. *Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and*
- c. *Employees shall be trained by a qualified biologist to identify and avoid protected species and habitat.*

Actions

Action CON 1-C: Review development project proposals, infrastructure projects, long-range planning projects, and other projects that may potentially impact special-status species and sensitive resources to determine whether significant adverse impacts will occur. Where adverse impacts are identified, develop appropriate mitigation measures, in conformance with General Plan policies and relevant state and federal laws, to reduce or avoid impacts to the maximum extent feasible and practical.

Action CON 1-D: Update the Zoning Ordinance to include standards to address significant impacts to special-status species and sensitive habitats consistent with Policies CON 1-13 through 1-18.

Impact 3.4-2: General Plan Implementation Could Result in Adverse Effects on Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, Regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service, or on Federally Protected Wetlands as Defined by Section 404 of the Clean Water Act through Direct Removal, Filling, Hydrological Interruption, or Other Means (less than significant)

Colusa County contains sensitive natural communities, such as riparian, streams, rivers, wet meadows, and vernal pools. Additionally, the County contains CNDDDB documented Great valley cottonwood riparian forest, Great valley mixed riparian forest, Coastal and valley freshwater marsh, and Northern claypan vernal pool habitat.

Streams, rivers, wet meadows, and vernal pools (wetlands and jurisdictional waters) are of high concern because they provide unique aquatic habitat (perennial and ephemeral) for many endemic species, including special-status plants, birds, invertebrates, and amphibians. These aquatic habitats oftentimes qualify as protected wetlands or jurisdictional waters and are protected from disturbance through the CWA.

The County contains numerous aquatic habitats that qualify as federally protected wetlands and jurisdictional waters. Section 404 of the CWA requires any project that involves disturbance to a wetland or water of the U.S. to obtain a permit that authorizes the disturbance. If a wetland or jurisdictional water is determined to be present, then a permit must be obtained from the USACE to authorize a disturbance to the wetland. Although subsequent projects may disturb protected wetlands and/or jurisdictional waters, the regulatory process that is established through Section 404 of the CWA ensures that there is “no net loss” of wetlands or jurisdictional waters. If, through the design process, it is determined that a future development project cannot avoid a wetland or jurisdictional water, then the USACE would require that there be an equal amount of wetland created elsewhere to mitigate any loss of wetland.

Construction activities associated with individual future projects could result in the disturbance or loss of waters of the United States. This includes perennial and intermittent drainages; unnamed drainages; vernal pools; freshwater marshes; and other types of seasonal and perennial wetland communities. Wetlands and other waters of the United States could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction-related activities.

Because the proposed project is a planning document and thus, no physical changes will occur to the environment, adoption of the proposed project would not directly impact the environment. There is a reasonable chance that natural communities, including wetlands, riparian, or other sensitive natural communities will be impacted throughout the buildout of the individual projects.

This impact is could result in adverse effects on wetlands, riparian, or other sensitive natural communities.

Subsequent development projects will be required to comply with the General Plan and adopted state, federal, and local regulations for the protection of sensitive natural communities, including riparian habitat. The County has prepared the 2030 General Plan to include numerous policies and action items intended to protect sensitive natural communities, including riparian habitat, wetlands, and waters of the U.S. from adverse effects associated with future development and improvement projects.

As described above under Impact 3.4-1, Policy CON 1-14 requires any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Potential impacts to wetlands or riparian habitat would be identified and addressed as part of the biological evaluation requirements of this policy. Additionally, Policy CON 1-12 requires new development to maintain setbacks from waterways, wetlands and riparian habitat. Policies CON 1-15, CON 1-16 and CON 1-24 require projects to avoid impacts to these resources to the greatest extent feasible, and to incorporate mitigation measures, consistent with the requirements of the applicable regulator agency, into the design of projects that cannot fully avoid impacts to these resources. These regulatory requirements include measures to replace or preserve wetland and riparian habitat in order to ensure no net loss.

The implementation of these policies and action items would require a detailed and site-specific review of all subsequent projects under the General Plan to reduce, avoid, or compensate for impacts to these resources. While future development has the potential to result in significant impacts to these resources, the implementation of the policies and action items listed below would reduce impacts to these resources to a **less than significant** level.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 1-11: Protect wetlands and riparian habitat areas from encroachment by development to the greatest extent feasible.

Policy CON 1-12: Require new development to include maintained and managed setbacks and buffers along riparian corridors and adjacent to sensitive habitat.

Policy CON 1-15: Require that impacts to wetlands and riparian habitat protected by State or Federal regulations be avoided to the greatest extent feasible. If avoidance is not possible, fully mitigate impacts consistent with applicable local, State and Federal requirements.

Policy CON 1-16: Require new development projects to incorporate measures that eliminate or avoid direct impacts to lakes, reservoirs, rivers, creeks, streams, wetlands, and other waterways. Measures may include, but are not limited to, appropriate setbacks or the implementation of best management practices approved by the Department of Planning and Building.

3.4 BIOLOGICAL AND NATURAL RESOURCES

Policy CON 1-22: Maintain lakes, rivers, streams, creeks, and waterways in a natural state whenever possible. These water features may be actively managed and/or improved or modified in order to function as natural flood protection and storm water management features during storms and flooding events.

Policy CON 1-23: Protect and enhance streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools through sound land use planning, community design, and site planning.

Policy CON 1-24: If a proposed project may result in impacts to wetlands or other Waters of the U.S., require the project proponent to consult with the appropriate regulatory agency and implement all applicable permit requirements as a condition of project approval.

Policy CON 1-25: Balance the needs of aquatic and riparian ecosystem enhancement efforts with flood management objectives.

Policy CON 1-26: Discourage development within 50 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams unless County-approved best management practices have been incorporated into the project's design in order to protect water quality and shoreline resources. Appropriate uses within the setback areas may include, but are not necessarily limited to:

- a. Fire and flood protection areas*
- b. Maintenance of riparian habitat*
- c. Recreational trails*
- d. Vegetated landscaping*
- e. Boat launch facilities*
- f. Levees*
- g. Docks*
- h. Irrigation pumps*

Policy CON 1-27: Encourage agricultural land owners to improve on-site storm water retention features and implement feasible Best Management Practices (BMPs) to reduce site runoff and provide for natural removal of water pollutants.

Policy CON 1-28: Support non-regulatory programs for protection of streams and riparian habitat, including education, technical assistance, tax incentives, and voluntary efforts to protect riparian resources.

Actions

Action CON 1-B: Require large-scale new development and planning projects to inventory unique ecosystems and sensitive biological habitat areas. Integrate maps of sensitive areas into the County Geographical Information System.

Action CON 1-E: Coordinate with the California Department of Fish and Game to identify adversely impacted aquatic habitat within the County and to develop riparian management guidelines to be implemented by development, recreation, and other projects adjacent to rivers, lakes, reservoirs, and streams.

Action CON 1-F: Continue to require implementation of the County's Grading Ordinance. Review projects to ensure that BMPs are implemented during construction and site grading activities as well as in project design to reduce pollutant runoff into water bodies.

Impact 3.4-3: General Plan Implementation may Interference with the Movement of Native Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites (less than significant)

There are many native fish and wildlife species within the County that migrate or utilize movement corridors. The most notable for their protection status include the Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*Oncorhynchus mykiss*). Salmon and steelhead trout are anadromous fish species that are present in the San Joaquin and Sacramento River Basins. The Sacramento River system has historically supported steelhead trout and four distinct spawning runs of Chinook salmon: fall, late fall, winter, and spring. The Central Valley steelhead was federally listed as threatened in 2003.

The fall/late fall-run salmon is a federal and state species of concern, and a candidate species for federal listing. The spring-run Chinook salmon population is listed as threatened by both federal and state agencies. Winter-run Chinook salmon population is listed as a federally and state endangered species.

While not formally listed as special-status species, Colusa County is also home to herds of tule elk and Columbian black-tailed deer. Deer and elk within Colusa County are common within the forest communities where common habitat includes several oak species, western mountain mahogany, chamise, riparian-wetland areas, willow/birch, ceanothus, and manzanita. Deer are also common in the foothill communities where common habitat includes oak-woodland, oak-annual grass savanna, and chaparral shrub stands. The greatest threat to migrating deer and elk is habitat fragmentation and the encroachment of urban development. Land use patterns in the County are guided by the General Plan Land Use Map. A central theme of the 2030 General Plan is the preservation of open spaces and agricultural lands between established communities, and to cluster and concentrate new development around existing communities. This land use pattern can be seen on the Land Use Map, and is articulated in policies located throughout the General Plan. The proposed General Plan provides for little to no new development potential outside of the immediate vicinity of the County's established communities. This land use pattern ensures that no adverse impacts would result in migrating deer and elk populations.

While the proposed 2030 General Plan does not directly entitle or approval any development projects, future development under the General Plan has the potential to result in adverse impacts to aquatic resources and waterways, would could result in impacts to migratory fish species.

There is a reasonable chance that protected migratory species, including the four distinct salmon runs, and steelhead may be impacted if an individual subsequent project is located in or adjacent to the habitat for this species.

Policy CON 1-14 requires any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Potential impacts to the movement of species and nursery sites would be identified and addressed as part of the biological evaluation requirements of this policy. Additionally, Policy CON 1-12 requires new development to maintain setbacks from waterways, wetlands and riparian habitat. Implementation of the policies and action items listed below would ensure that all future projects are designed to facilitate the movement of sensitive species to the greatest extent feasible. Where full design mitigation is not feasible, compliance with state and federal permit requirements would offset any potential impacts associated with project implementation. Adherence to the requirements of these policies would reduce this impact to a **less than significant** level.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 1-14: Require any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Evaluations shall be carried out under the direction of the Colusa County Department of Planning and Building and consistent with applicable state and federal guidelines. Additional focused surveys shall be conducted during the appropriate season (e.g., nesting season, flowering season, etc.) if necessary.

Policy CON 1-16: Require new development projects to incorporate measures that eliminate or avoid direct impacts to lakes, reservoirs, rivers, creeks, streams, wetlands, and other waterways. Measures may include, but are not limited to, appropriate setbacks or the implementation of best management practices approved by the Department of Planning and Building.

Policy CON 1-17: All discretionary public and private projects that identify special-status species or sensitive habitats in a biological resources evaluation shall avoid impacts to special-status species and their habitat to the maximum extent feasible. Where impacts cannot be avoided, projects shall include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies with jurisdiction (if applicable) including, but not limited to, the following strategies:

- a. Preservation of habitat and connectivity of adequate size, quality, and configuration to support the special-status species. Connectivity shall be determined based on the specifics of the species' needs.*
- b. Project design measures, such as clustering of structures or locating project features to avoid known locations of special-status species and/or sensitive habitats.*
- c. Provision of supplemental planting and maintenance of grasses, shrubs, and trees of similar quality and quantity to provide adequate vegetation cover to enhance water*

quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife.

- d. Protection for habitat and the known locations of special-status species through adequate buffering or other means.*
- e. Provision of replacement habitat of like quantity and quality on- or off-site for special-status species.*
- f. Enhancement of existing special-status species habitat values through restoration and replanting of native plant species.*
- g. Provision of temporary or permanent buffers of adequate size (based on the specifics of the special-status species) to avoid nest abandonment by nesting migratory birds and raptors associated with construction and site development activities.*
- h. Incorporation of the provisions or demonstration of compliance with applicable recovery plans for federally listed species.*
- i. Monitoring of construction activities by a qualified biologist to avoid impacts to on-site special status species.*

Policy CON 1-19: Encourage property owners adjacent to creeks and rivers and appropriate public agencies to participate in fishery enhancement projects.

Policy CON 1-20: Protect, restore and enhance habitat for protected fish species in a manner that does not result in the conversion of agricultural lands or result in the loss of agricultural water supplies.

Policy CON 1-21: Protect riparian habitat along the Sacramento River in order to maintain suitable habitat for anadromous fish species, including salmon and steelhead trout, and for native sport-fishing species.

Actions

Action CON 1-E: Coordinate with the California Department of Fish and Game to identify adversely impacted aquatic habitat within the County and to develop riparian management guidelines to be implemented by development, recreation, and other projects adjacent to rivers, lakes, reservoirs, and streams.

Impact 3.4-5: Conflicts with an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, Recovery Plan, Oak Woodlands Plan, or Local Policies or Ordinances Protecting Biological Resources (less than significant)

There are no adopted habitat conservation plans, natural community conservation plans, or recovery plans that are applicable to the proposed project. Colusa County is home to several National Wildlife Refuges and Wildlife Areas, as well as State Wildlife Areas. These areas of the County that are actively managed for the preservation of valuable habitat or designated as Resource Conservation lands on the Land Use Map.

Public Resources Code Section 21083.4(b) requires a County to determine if a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. As shown on Figure 3.4-1, the majority of oak woodlands in Colusa County are located in the eastern portion of the County and are designated Agricultural Upland, Resource Conservation, and Forest Lands on the Land Use Map (Figure 2-2). Therefore, the project would not urbanize or otherwise convert a significant portion of oak woodlands to non-oak woodland habitat. Furthermore, Colusa County has adopted a Voluntary Oak Woodlands Management Plan, which encourages land owners to preserve and protect oak woodland resources on private lands. General Plan Policy CON 1-9 further supports the goals of the Voluntary Oak Woodlands Management Plan.

There are no adopted habitat conservation plans or recovery plans that are applicable to the proposed project. Colusa County has taken steps to provide for additional tools to conserve and protect natural communities, including oak woodlands, and habitat and to coordinate with agencies that manage wildlife refuges in the County through implementation of the 2030 General Plan. This is a **less than significant** impact and no mitigation is required.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 1-9: Avoid oak tree removal within oak woodland habitat to the greatest extent feasible through appropriate project design and building siting. If full avoidance is not possible, prioritize planting replacement trees on-site over off-site locations.

Policy CON 1-10 further encourages property owners to implement policies and measures contained in the Colusa County Voluntary Oak Woodlands Management Plan.

Additionally, the proposed 2030 General Plan includes policies that promote and encourage the use of conservation easements to protect sensitive natural communities. These policies include:

Policy CON 1-1: Maintain ample areas of land designated Resource Conservation (RC).

Policy CON 1-2: Use conservation and open space easements, tax incentives, and other tools to:

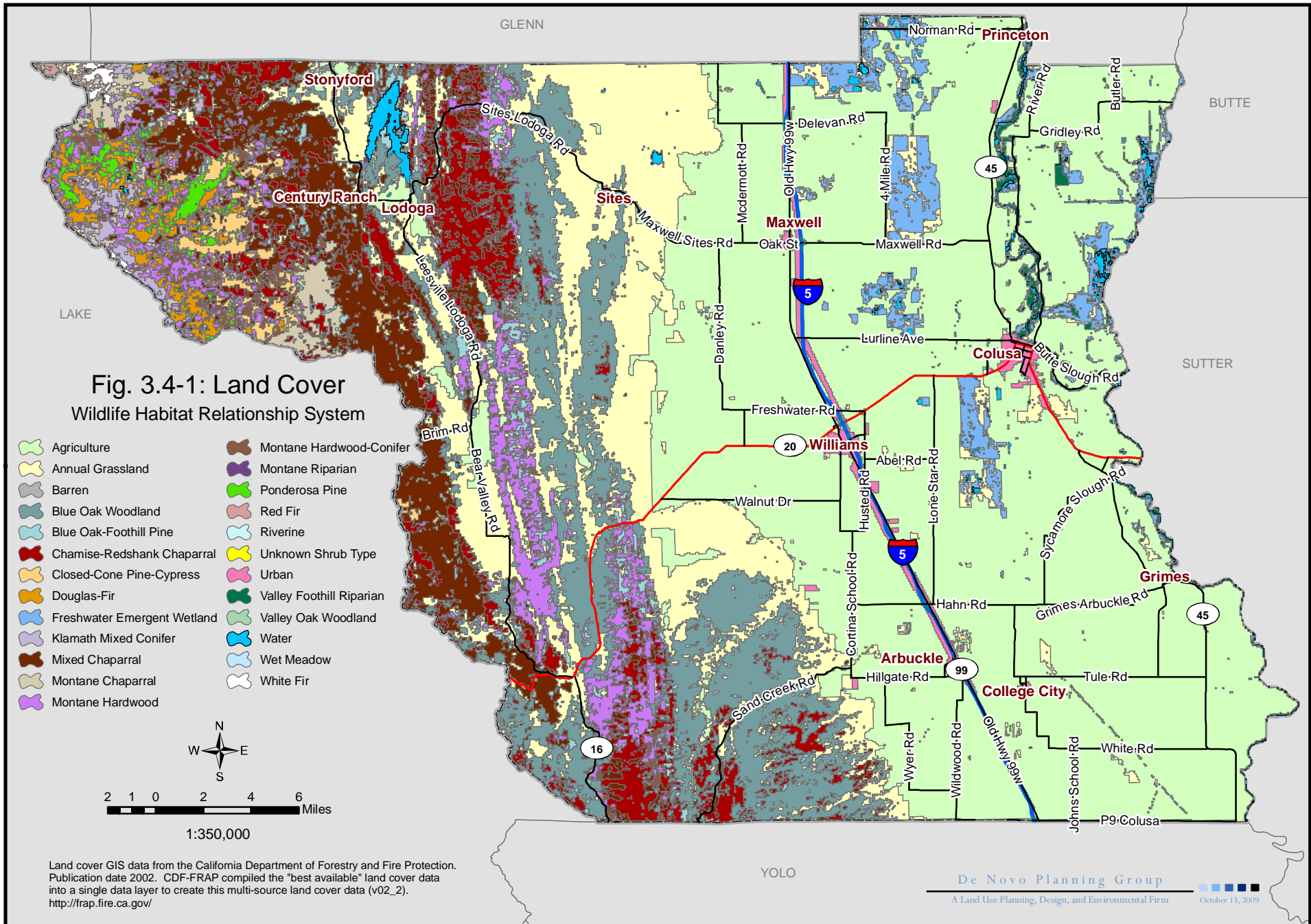
- *Protect, restore, and enhance the County's significant natural resources.*
- *Reduce premature conversion of resource lands around community areas.*
- *Provide linkages between natural resource areas.*

Policy CON 1-6: Focus conservation efforts on high priority conservation areas that contain suitable habitat for endangered, threatened, migratory or special-status species and that can be managed with minimal interference with nearby agricultural activities.

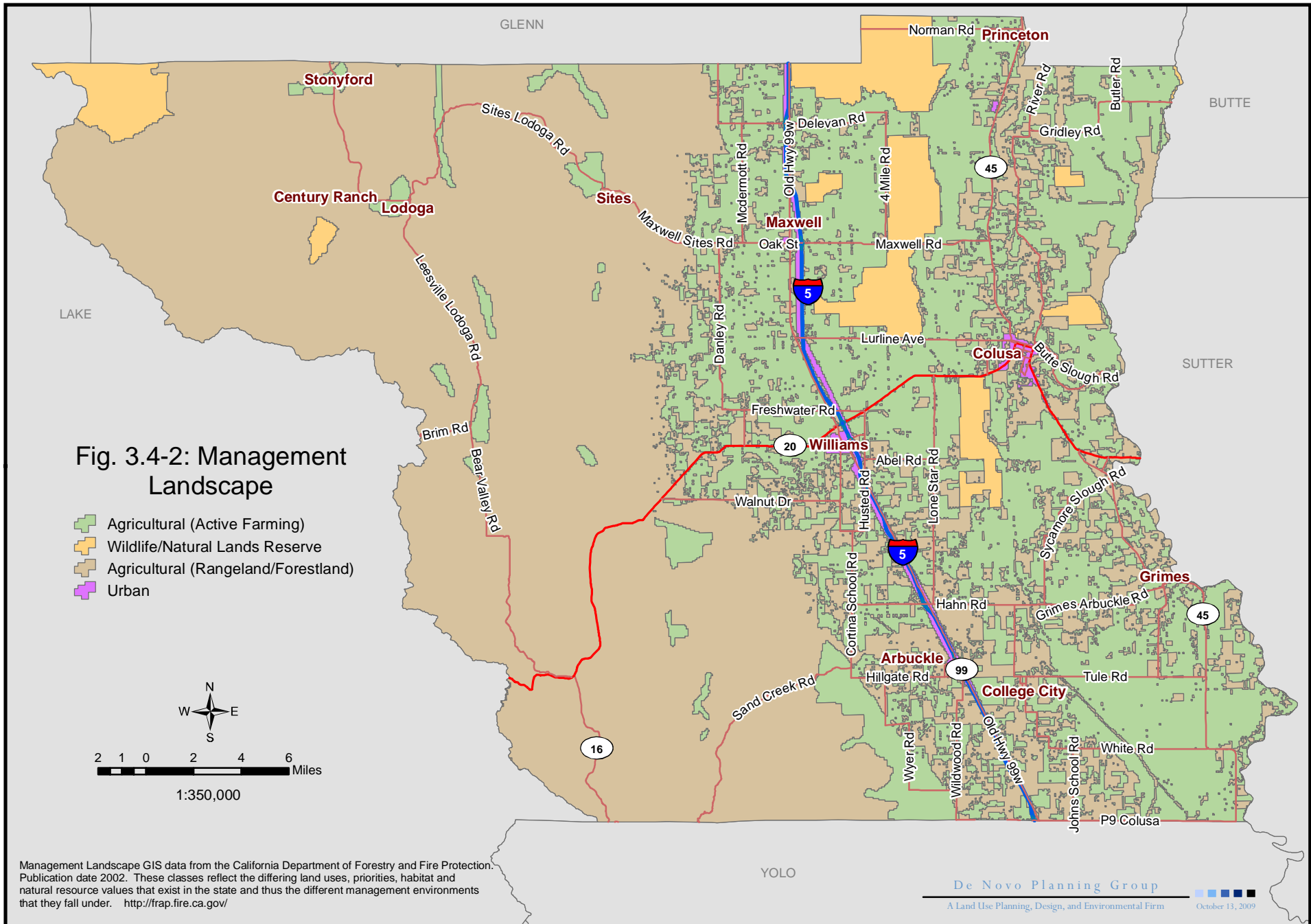
Policy CON 1-7: Preserve and enhance those biological communities that contribute to the County's rich biodiversity including, but not limited to, blue oak woodlands, annual grasslands, mixed chaparral, pine woodlands, wetlands, riparian areas, aquatic habitat, and agricultural lands.

As stated above, there are no adopted habitat conservation plans or recovery plans that are applicable to the proposed project. Colusa County has taken steps to provide for additional tools to conserve and protect natural communities and habitat through implementation of the 2030 General Plan. This is a **less than significant** impact and no mitigation is required.

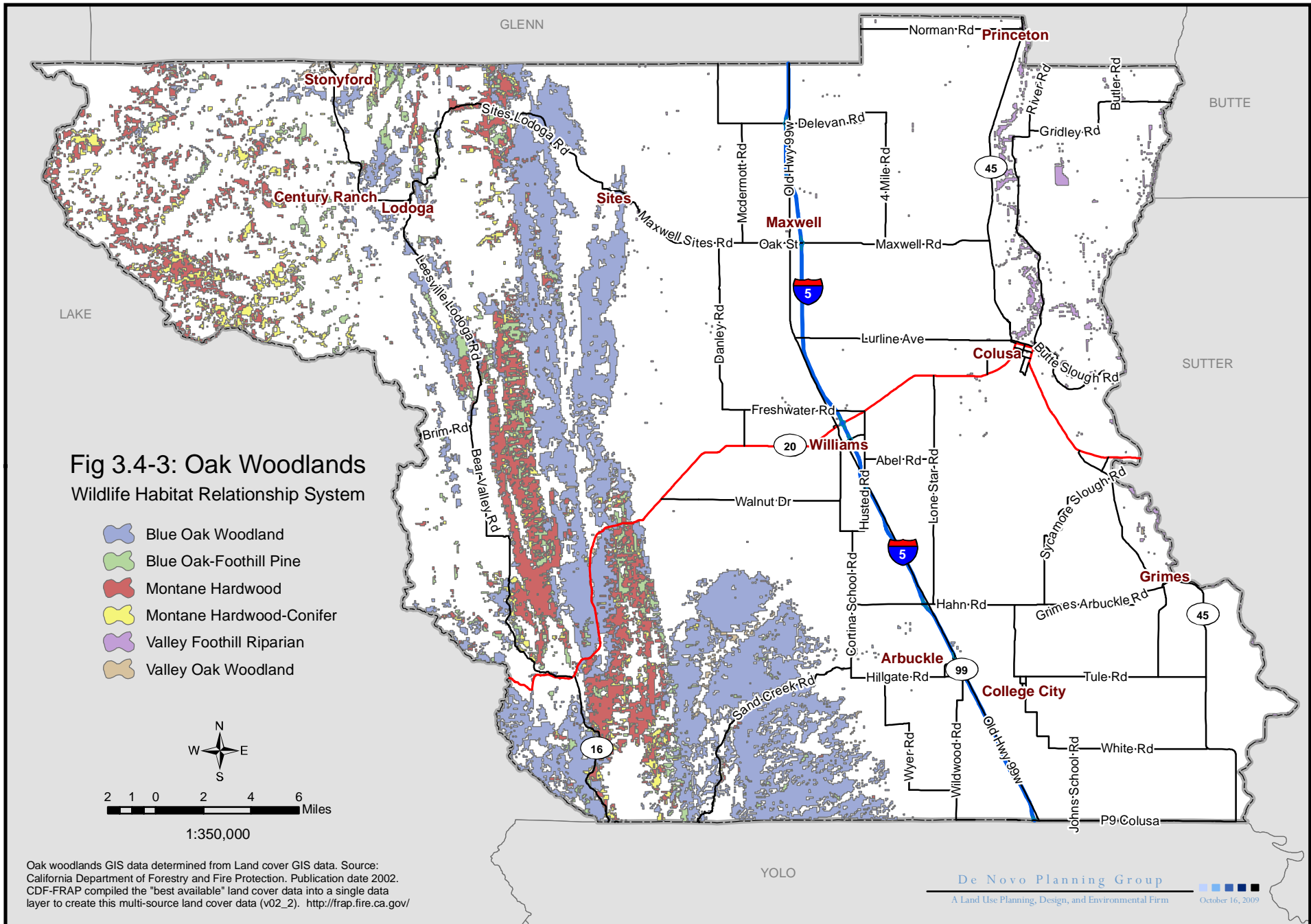
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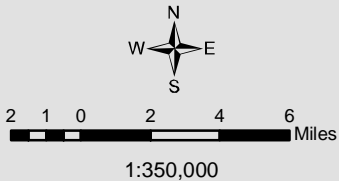


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**Fig 3.4-3: Oak Woodlands
Wildlife Habitat Relationship System**

-  Blue Oak Woodland
-  Blue Oak-Foothill Pine
-  Montane Hardwood
-  Montane Hardwood-Conifer
-  Valley Foothill Riparian
-  Valley Oak Woodland



Oak woodlands GIS data determined from Land cover GIS data. Source: California Department of Forestry and Fire Protection. Publication date 2002. CDF-FRAP compiled the "best available" land cover data into a single data layer to create this multi-source land cover data (v02_2). <http://frap.fire.ca.gov/>

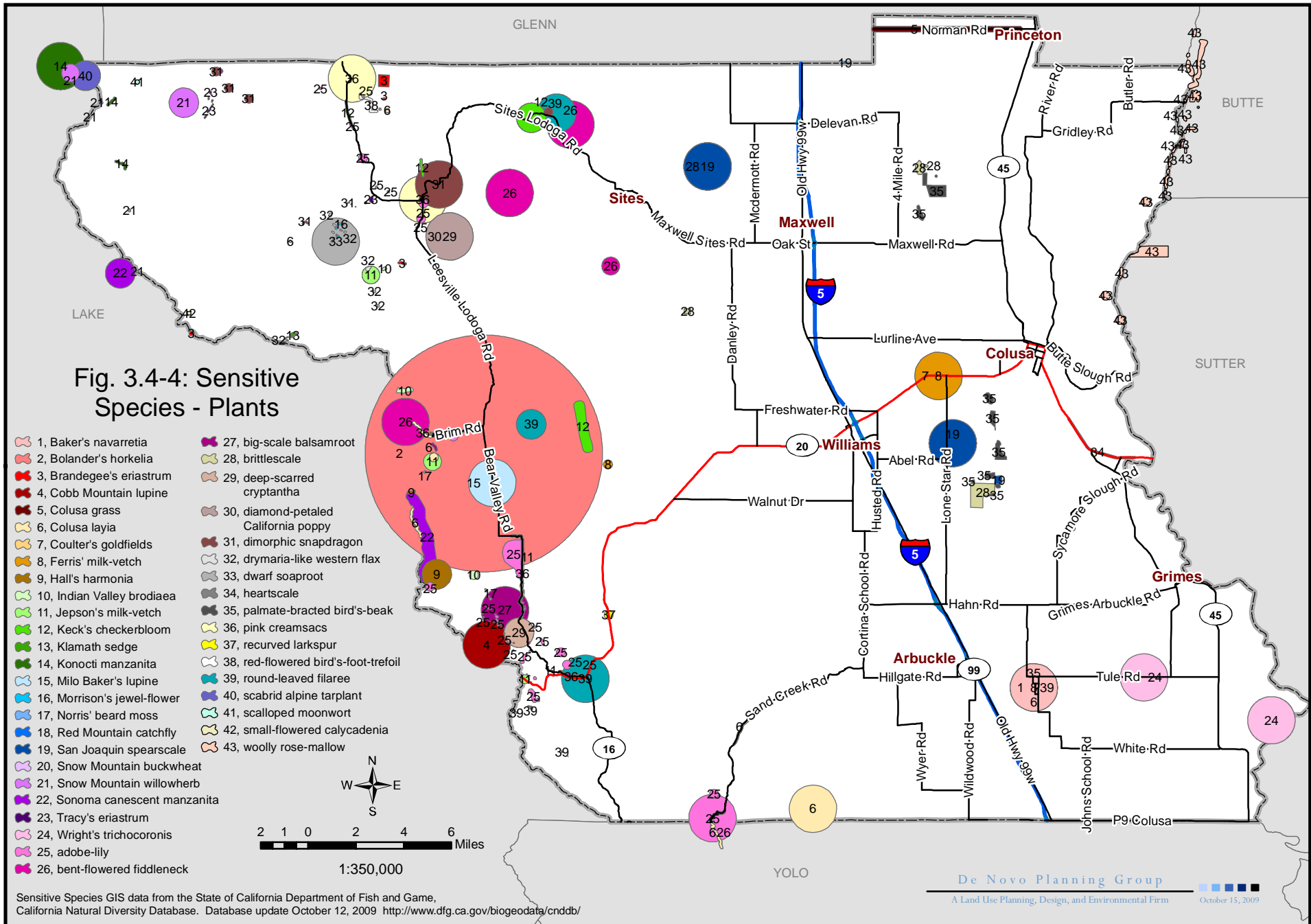
YOLO

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

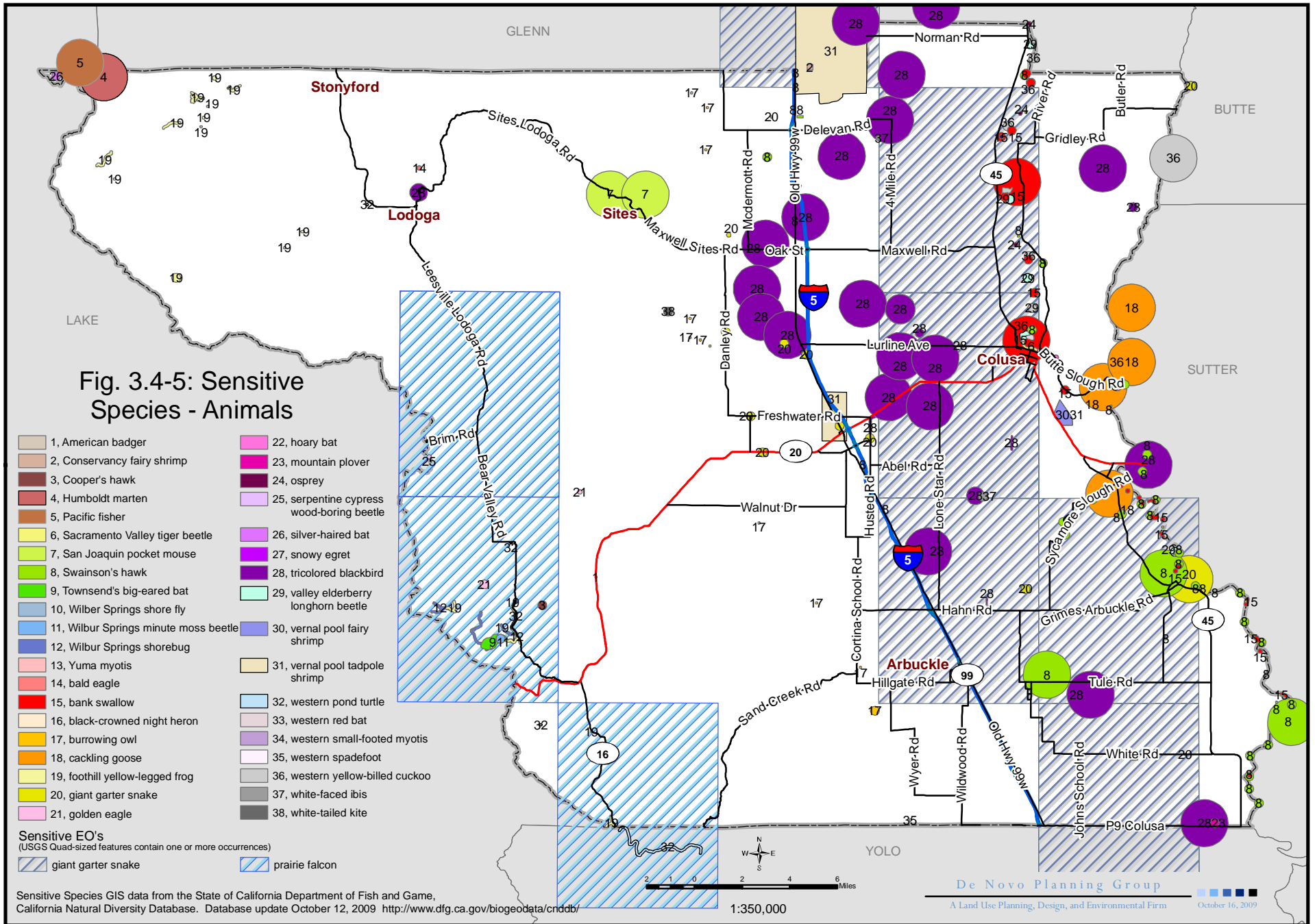
October 16, 2009

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Sensitive Species GIS data from the State of California Department of Fish and Game, California Natural Diversity Database. Database update October 12, 2009 <http://www.dfg.ca.gov/biogeodata/cnddb/>

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Cultural Resources are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Preservation of the County's cultural heritage should be considered when planning for the future.

This section provides a background discussion of the prehistory, ethnology, historical period background, and cultural resources found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. One comment regarding cultural resources was received from the Native American Heritage Commission (NAHC) during the Notice of Preparation scoping period for the EIR. The NAHC recommends that the Draft EIR efforts include a records search to identify known cultural resources within the project area, coordination with potentially affected Native American groups, and a summary of mitigation approaches that should be considered by the County in order to avoid or lessen potential impacts to cultural or historical resources.

Key Terms

Archaeology. The study of historic or prehistoric peoples and their cultures by analysis of their artifacts and monuments.

Paleontology. The science of the forms of life existing in former geologic periods, as represented by their fossils.

Ethnography. The study of contemporary human cultures.

Complex. A patterned grouping of similar artifact assemblages from two or more sites, presumed to represent an archaeological culture.

Midden. A deposit marking a former habitation site and containing such materials as discarded artifacts, bone and shell fragments, food refuse, charcoal, ash, rock, human remains, structural remnants, and other cultural leavings.

3.5.1 ENVIRONMENTAL SETTING

PREHISTORY

Archaeology tells us that by at least 6,000 years ago, about 4000 B.C., Native Americans were living along the Sacramento River in Colusa County. Ten to twelve feet below the modern surface was a "buried midden" dated to 4020 B.C. that was discovered and dated, but not further investigated. Midden is the remains of plants and animals, like a compost pile, usually with bits of artifacts too, left by a group who generally call the place home. Village sites have midden, temporary camps normally do not.

After 2500 B.C., archaeologists do have a record of life at this village with various artifacts recovered including stone points designed to be used with a spear-thrower (atlatl), fishing related items, bone and stone tools, and shell ornaments. By this time, archaeologists feel this village site

3.5 CULTURAL RESOURCES

was occupied year-round. Colusa County looks to have had its first “town” about 4,500 years ago. Other early settlements along the river may also exist, although they are not yet discovered.

At about 1000 A.D., the bow and arrow was introduced into the area and new opportunities opened up for the hunter. Fishing technology also continued to improve during this period, and, not surprisingly fish remains make up increasingly larger percentages of food remains found at river side villages from this period onward. The collection of the local wild seed crop, supplementing the diet of acorn, a staple since about 500 B.C., also increased during this time. Over time, the size of certain types of seeds collected became larger, leading some to suggest that the foundations of horticulture were beginning to take root in California’s Central Valley.

Populations at the villages along the river continued to expand, and by the time of first written records, a village with three or four thousand residents was not uncommon, particularly at a good fishing spot where weirs could be constructed. Such was the case at Coru, “one of the largest (villages) in the valley,” according to Bidwell who first saw it in 1843. Coru was probably selected as the primary settlement in the area for two principal reasons, it did not flood, a fact discovered by Bidwell when he used a canoe to travel there from Sutter’s ranch (Sacramento) during the winter of 1844 without having to bother with portage and it had a great spot for a fish weir.

ETHNOLOGY

Patwin

The Patwin occupied the southern Sacramento Valley west of the Sacramento River from just north of the town of Princeton (or possibly as far north as Hamilton City), south to just below Colusa, south to San Pablo and Suisun bays. In the historic literature, they are often referred to as the Colus. Patwin territory extended approximately 90 miles north to south and 40 miles east to west. Distinction is made between the River Patwin, who resided in large villages near the Sacramento River, especially between Colusa and Knights Landing, and the Hill Patwin, whose villages were situated in the small valleys along the lower hills of the Vaca Mountains and Coast Range, with concentrations in Long, Indian, Bear, Capay, Cortina and Napa valleys. The term “Patwin” refers to the people belonging to the many small contiguous independent political entities in this area who shared linguistic and cultural similarities. Hill and River Patwin dialects are grouped into a North Patwin language, separate from South Patwin, spoken by people who live near present-day Knight's Landing and Suisun. Together, these are classified as southern Wintuan and belonging to the Penutian language family as do the languages of the Miwok and Costanoan peoples.

Politically, the Patwin were organized in small tribes or tribelets, each consisting of a primary village with satellite villages. Tribelets were autonomous and differed from other such units in minor cultural variations. Dialects might encompass several tribelets. Territories were vaguely defined, but included fishing and gathering areas used by the group. In each village, the leader or chief administered subsistence ventures, such as hunting or gathering, and presided over ceremonies. Social and economic activities were divided among families within a village, with

certain families responsible for different specialties such as trapping ducks, collecting salt, making foot drums, or performing particular dances or shamanistic rituals.

Natural resources flourished in Patwin territory. They gathered seeds and plant foods and hunted game animals on the plains, shot or netted ducks and other migratory water fowl in the thick tule marshes, and netted salmon and other fish in the rivers and streams. Some of these activities were conducted by groups or families assigned to particular resource areas by a village chief. Acorns were a staple in the Patwin diet. Two types of Valley oak and rarely, live oak acorns, were gathered at communally-owned groves. To obtain salt, the Patwin scraped off rocks that were found near Cortina, burned a grass that grew on the plains, or obtained it in trade from the neighboring Pomo.

King salmon, silver salmon and steelhead trout that run from the ocean to freshwater rivers and streams were an important diet item. Explorers observed Patwin fishing for salmon with a boom net in 1854. The Patwin also caught smaller fish and collected mussels from the river bottom. They attracted wild ducks by setting out realistic decoys, and drove the fowl into large nets stretched above the marshes. Hunters also netted mud hens, geese and quail. The Suisun tribelet pursued waterfowl in tule rafts. The Patwin hunted large game, such as tule elk, deer, antelope and bear, and took many varieties of small animals, reptiles, insects and birds either to eat or to use for ceremonial and practical materials.

Ko-ru (Coru) was the tribal capital of the Ko-ru-si band of Patwin, and the village site sits underneath the community of Colusa. There were at least thirteen related villages situated north and south of *Ko-ru* along the Sacramento River from near the confluence with Sycamore Slough on the south to just north of Princeton. *Ko-ru* was abandoned after the epidemic of 1832, as the place was considered unhealthy. The new primary village of the River Patwin was established on the east side of the river across from the former “capital”.

Northeastern Pomo

The territory around Big Stony Creek, Salt Creek, and Snow Mountain including Stonyford belonged to a branch of Pomo-speakers identified as the Northeastern Pomo. Seven distinct and mutually unintelligible language divisions existed within this Pomoan language family, some more divergent than German and English. The seven groups identified by linguists are: the Southeastern, Eastern, Northeastern, Northern, Central, Southern, and Kashaya Pomo.

There was one principal settlement that housed a chief recognized by all group members. Other subsidiary villages were linked by political ties to the main community. All members of a group were at liberty to hunt, fish, and gather wild foods. Territorial boundaries were definite and property rights were established. In times of resource abundance, these rights could be, and were relaxed, allowing mutually acceptable freedom of land use. In general, Indians of the region were peaceful and relationships were amicable among the diverse peoples. Feuds and wars are known from stories and legends, but these battles do not appear to be of major consequence.

The village of “*ba kam*” or “chaparral village” was located along Big Stony Creek, above the junction with Little Stony Creek. This village center controlled an important and valuable resource, salt. The main collection spot located along Salt Creek was called “*ch e e ti do*” or “salt field.”

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Payment was expected for either the product or access to the collection spot, and the lack of such, resulted in the so-called “Salt Wars” in the early nineteenth century.

Individual status was very important to both men and women in Pomo society, and involved a complex interaction of family status, background, wealth, and individual achievement. In contrast with many California tribes, the Pomo had the concept of “ownership” of particular areas for purposes of resource procurement, if not the European idea of unrestricted ownership of land parcels. Also, the Maru society and later the ghost society, along with kin relationships, were pervasive throughout the society. For instance, membership in a profession, a way of gaining status, required sponsorship and tutoring by a family member already in the profession. Membership in a secret society also required sponsorship from a family member. Professions included chieftanship, shamanic roles, and specialized manufacturers.

The Northeastern Pomo hunted antelope, deer, and elk. This task either performed individually or communally, was one of the most important occupations of the men. Other animals they hunted include rabbits and squirrels. In addition to animals, they also relied on acorns, buckeye nuts, berries, and roots and bulbs. Like their neighbors, the Hill and River Patwin, various insects such as grasshoppers, caterpillars, and larvae provided an additional source of protein.

HISTORIC PERIOD BACKGROUND

John Bidwell, a Native American co-worker, Peter Lassen, and “a German named Joe Bruheim” swiftly proceeded north to catch up with the immigrant party and crossed into Colusa County in March 1843 and left us with the first written account. As Bidwell recalled, “In my chase for stolen horses I had come across a country that was to me a revelation. And as I proceeded up the valley, through what was later Colusa County, and beyond it, I was struck with wonder and delight in this almost interminable land of promise”.

Bidwell described the Patwin village at Colusa as one of the largest in the valley. He describes, “many other villages in the vicinity (of Colusa) on both sides of the river both above and below the Colus village,” and estimates, “I can truthfully say that the number of Indians within ten miles numbered not less than fifteen or twenty thousand”.

The first settler to build a home in the county was John S. Williams. Williams worked for Thomas Larkin. Larkin’s children had been awarded a Mexican Land Grant; in order to fulfill his obligations under the terms of the land grant and to keep squatters from settling on his new holdings, Larkin sent Williams in 1846 to build a home and establish a ranch. Larkin supplied a herd of 800 head of cattle to Williams on shares. Williams, his wife, and his herd of cattle headed north during the summer of 1847 and set up headquarters on the west side of the river about a mile and half south of Princeton.

Robert Semple had first visited Colusa County in 1847 during a trip to the Red Bluff area to visit friends. He rode up the valley along the west bank of the Sacramento River. According to McComish, “The luxuriance of the vegetation in the vicinity of the Colus Indian village convinced him that here would be a good place for a settlement.” When Robert’s brother Charles arrived at Benicia from Kentucky in 1849 in his party were: another brother, John; one of Robert’s sons; a

cousin, Will S. Green; and, James Yates (Green in Rogers 1891:347). Charles (Colonel) Semple had been talked into his brother's scheme concerning building a town on the site of the Colus village at Salmon Bend, and bought 8,875 acres from John Bidwell in 1850. In the spring of 1850, Colonel Semple and a group of workmen came up the valley to establish a town and a landing along the river. The Colonel got it wrong and ended up about seven miles north of Coru at another village.

Semple quickly discovered his mistake and headed south. When they arrived, they found that other had beaten them to the site. Before Semple arrived, one other business in town was already in operation, and a residence was under construction. The future town of Colusa's first business was, "...a little shanty on what is now Fifth Street, between the Riverside Hotel and the river".

The settlement of Colusa prospered during the 1850s due to its location along two major transport and trade routes; the Sacramento River and an increasingly important land based route to the northern mines known as the Old River Road. Steam-powered boats, not unlike those plying the Mississippi during the same period, regularly navigated up and down the Sacramento River and Colusa County alone had at least five named landings where goods were exchanged in addition to the communities of Princeton, Colusa and Grimes which would eventually serve as major shipping points.

The hill country in the western part of the county saw the first settlers in 1852, two or three unnamed cattle ranchers, who had small herds roaming Spring Valley. Antelope Valley had four settlers by 1853, including John Sites. Bear Valley's first resident was Godfrey Ingram who arrived in the fall of 1853.

The so-called "plains" between Colusa and the foothills to the west were settled slowly beginning in 1853 starting with the area along the sloughs and creeks near Williams, Arbuckle and College City. The area around Maxwell and Delevan wouldn't be inhabited by much other than cattle herds for additional ten or twelve years. North of a line drawn due west from Colusa there were no settlements on the plains, for agricultural purposes, until about 1868.

W.H. Williams arrived on the plains in 1854 in the area where the future town bearing his name would be established to experiment with raising wheat and barley, something he had tried the year before in nearby Spring Valley. A year later, in 1855, Andrew Pierce settled near what would become College City, and the Weyand brothers, Gustav and Julius, put down roots near what would become Arbuckle.

Farmers were not the only ones arriving on the plains during this period. J.C. Stovall also arrived in 1858 and settled down with his herd six miles west of Williams. Stovall teamed up with another rancher to form the Stovall-Wilcoxson Company, who within sixty years, owned a thirty-five thousand plus acre ranch west of Williams.

The 1850s saw the transition in the county from a ranching and trade based economy to one that increasingly included more intensive agriculture. Water for grain crops was weather dependant: with adequate rains, they prospered; without, failure. The years from 1850 to 1851 and 1854 to 1857 were so dry that it was reported that, "...most who had located on the plains pulled up stakes and turned their backs on its desolation and aridity." Another insult came in the form of a massive

3.5 CULTURAL RESOURCES

swarm of grasshoppers in 1855 which, "...ate up the pasturage, destroyed the oats and killed many of the trees."

1876 was a pivotal year, with the Northern Railway tracks and construction locomotive reaching and entering southern Colusa County. The group continued laying tracks to the north without delay. Within ten days, "Arbuckle laid out, and the work of track laying to the place having been completed, a general jollification followed".

Other landowners along the proposed Northern Railroad route wasted no time in capitalizing on their luck. As Rogers notes, several months before the railroad reached the county, "W.H. Williams, after laying out the town of Williams, circulates nicely-executed maps of the place." By June 23rd, railroad cars had reached the new community and, "In celebrating the event a great quantity of powder was burned, flags were hoisted, bunting fluttered everywhere, and the day closed with a dance."

Both Williams and Arbuckle grew quickly as the Northern Railroad line was extended northward. By September 11th of that year, Arbuckle already had a post office, with T.R. Arbuckle in charge and, "the town of Williams being laid out, town lots selling rapidly". By April 1877, Maxwell had also grown sufficiently to have opened a post office.

In less than a year after celebrating the arrival of the railroad, an exploding lamp caused a fire in the commercial district in Williams, destroying the Odd Fellows Hall, a general store located on the lower floor, a nearby livery stable, a wagon shop, and a blacksmith shop.

The Northern Electric Railway Company was reorganized in 1918 as the Sacramento Northern Railroad Company. Their combined main line from Chico to San Francisco ran 185 miles and was the longest interurban railway line in North America. Although the Sacramento Northern expanded its passenger service by purchasing the San Francisco-Sacramento Railroad in 1928, the competition with automobile, bus and truck traffic took its toll. By the mid-1930s passenger traffic on the Sacramento to Chico route had been drastically reduced. The financial stability of the company was further impacted by the Depression economy, and natural disasters such as windstorms and flooding disrupting service and damaging facilities. The completion of the Bay Bridge in 1939 brought an end to the interurban passenger service. In 1940, the company completely abandoned passenger service.

It was not until 1916 that a good concrete road was built connecting Colusa and Williams. With the road paralleling the railroad, one could finally drive between Colusa, Williams, Arbuckle and Maxwell without having to leave the concrete surface. Within a few years, the north/south road, later State Route 45, connecting Princeton, Colusa, and Grimes, was improved as well. It would take many additional years to get a good, year-round surface on the various secondary roads. Roads and bridges cost money, and passing bond measures to pay for the improvements had a mixed record of success.

By 1926, the road paralleling the Southern Pacific railroad was officially designated as Highway 99W. Beginning in Sacramento at the 'I' Street Bridge, Highway 99W followed the west side of the river up to the valley to eventually meet and merge with the Highway 99E branch at Red Bluff. In

the early 1960s, construction began on a new interstate highway system, Interstate 5, and when "I-5" was completed, Highway 99W was relegated to a frontage road. Many businesses had developed in Arbuckle, Williams, and Maxwell to serve the travelers along Highway 99W, and it is not difficult to find survivors in each of these communities today.

In 1887, California passed the Wright Irrigation Act that authorized and regulated the formation of irrigation districts. On November 22, 1887 the Central Irrigation District was formed, incorporating 156,500 acres. It took nearly thirty years, and a number of different investors, but with the completion of the canal structure and the pumping facilities, the county could support its newest cash crop, rice. Rice had created a new demand for large quantities of water and the irrigation districts would supply it. In addition to the canal's completion, large individual pumping plants were installed for the new water-hungry rice crop on the Charles H. Glenn Farm and the Mudd Ranch and a second plant was installed on the Sacramento River at Sidds Landing.

Prior to widespread irrigation, the primary agricultural export could be summed up with one word - wheat. Farms of enormous size developed. The Glenn Ranch, then in the northern part of the county, at one time encompassed over 50,000 acres of land devoted to wheat. Farms several thousands of acres in size were not uncommon, and even today, the average size farm in the county is roughly 560 acres in size.

CULTURAL RESOURCES IN COLUSA COUNTY

A records search was performed by Peak and Associates, through the Northwest Information Center of the California Historical Resources Information System at Sonoma State University in August 2009, which identified 616 recorded cultural resources in Colusa County. These resources represent a cross section of previous human activity. From a fragment of a handstone used to mill seeds during the prehistoric period to one of the many historic period homes and businesses in the City of Colusa, the 616 resources record the imprint left by the unique variety of people who have made the county their home or helped it prosper.

The cultural resources records separate the resources into categories, which simple groupings of the resources based on shared characteristics. The 86 prehistoric period villages, for example, includes both permanent villages and more seasonally occupied camps, but all 86 areas showed evidence of repeated human occupation. The difference between the historic period building category and the historic period feature category is the fact that a building is still standing while a feature may be the remains of where a building once was, or other recognizable imprint such as a canal, railroad grade, or mine created during historic times.

Table 3.5-1 summarizes the types of resources in Colusa County, based on the general location of the resource by USGS Quadrangle Map. The list will continue to grow as archaeologists study new areas. Many of the 616 resources are known through the efforts of Mendocino National Forest and Bureau of Land Management archaeologists involved in land inventories. By far the largest block, 260 resources, is the result of the 2002 City of Colusa Historic Resources Inventory. Most of the land in the county has not been examined for evidence of cultural resources and most historic

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period buildings have not been identified and documented. Many unique vestiges of the County's past wait to be discovered.

The combined prehistoric and historic period resources are largely due to the simple fact that different peoples over time select the same choice spot for settlement and other activities. Some resources are special to the county such as the single historic ship, Colusa County's own Princeton Ferry (No. P-06-000560).

TABLE 3.5-1: SUMMARY OF KNOWN CULTURAL RESOURCES

LOCATION - USGS QUADRANGLE MAP	SUMMARY OF KNOWN RESOURCES
Arbuckle	2 Historic period features
Arbuckle/Grimes	1 Historic period feature
Bartlett Springs	1 Historic period artifact scatter 2 Historic period buildings 3 Prehistoric & historic period artifact scatter 1 Prehistoric period artifact scatter 1 Prehistoric period village, historic building
Bartlett Springs/Fouts Springs	1 Historic period buildings, artifact scatter
Clearlake Oaks	1 Prehistoric & historic period artifact scatter 2 Prehistoric period artifact scatters
Colusa	257 Historic period buildings 1 Historic period artifact scatter 1 Historic period buildings, artifact scatter 2 Historic period features 1 Historic period village 1 Historic period village, historic artifacts 1 Prehistoric period village, historic features
Cortina Creek	1 Prehistoric period village, historic features 1 Historic period artifact scatter 1 Prehistoric period cemetery 1 Prehistoric period resource, unknown type 3 Prehistoric period village
Crockett Peak	1 Prehistoric period artifact scatter
Crockett Peak/St. John Mtn.	1 Historic period feature, structure
Fouts Springs	1 Prehistoric period artifact scatter 3 Historic period artifact scatter 1 Historic period buildings, features 2 Historic period buildings, artifacts, features 5 Historic period features 6 Prehistoric and historic period artifact scatter 1 Prehistoric & historic period features 1 Prehistoric period artifact scatter, quarry 1 Prehistoric period artifacts, historic building 3 Prehistoric period artifacts, historic feature 1 Prehistoric period village 3 Prehistoric period village, historic features 2 Prehistoric period village, historic buildings 1 Historic period refuse scatter, features 1 Prehistoric period food processing feature
Fouts Springs/Potato Hill	1 Historic period feature
Gilmore Peak	2 Historic period artifact scatter

TABLE 3.5-1: SUMMARY OF KNOWN CULTURAL RESOURCES

LOCATION - USGS QUADRANGLE MAP	SUMMARY OF KNOWN RESOURCES
	<ul style="list-style-type: none"> 2 Historic period buildings 4 Historic period feature 8 Prehistoric period artifact scatter 1 Historic period artifact scatter, features 1 Historic period buildings, features 1 Historic period mine, refuse scatter 5 Prehistoric period isolated artifact 5 Prehistoric period village 1 Historic period refuse scatter
Glascoc Mountain	<ul style="list-style-type: none"> 1 Historic period artifact scatter, buildings 1 Historic period buildings, features 6 Historic period features 2 Prehistoric period artifact scatter 1 Prehistoric period artifact scatter, feature 1 Prehistoric period feature 2 Prehistoric period food processing feature 8 Prehistoric period village 1 Prehistoric period village, historic features 1 Prehistoric period village, features
Grimes	<ul style="list-style-type: none"> 2 Historic period feature 1 Prehistoric and historic period village 1 Prehistoric period village, historic buildings
Guinda	<ul style="list-style-type: none"> 1 Prehistoric period village, features
Hough Springs	<ul style="list-style-type: none"> 2 Prehistoric period artifact scatter 1 Prehistoric period isolated artifact
Kirkville	<ul style="list-style-type: none"> 2 Historic period feature 4 Prehistoric period village
Leesville	<ul style="list-style-type: none"> 5 Historic period feature 4 Prehistoric period artifact scatter 1 Prehistoric period village, features 1 Protohistoric, unknown attributes
Lodoga	<ul style="list-style-type: none"> 3 Historic period feature 8 Prehistoric period village 1 Prehistoric and historic period artifact scatter 4 Prehistoric period artifact scatter 2 Prehistoric period artifact scatter, feature 4 Prehistoric period isolated artifact 1 Prehistoric period village, feature
Manor Slough	<ul style="list-style-type: none"> 2 Historic period feature 5 Prehistoric & historic period features 1 Prehistoric period artifact scatter 1 Prehistoric period artifact scatter, feature 1 Prehistoric period feature, rock art 1 Prehistoric period feature 6 Prehistoric period food processing feature 4 Prehistoric period village 1 Prehistoric period village, feature 1 Historic period artifact scatter
Maxwell	<ul style="list-style-type: none"> 1 Historic period feature
Meridian	<ul style="list-style-type: none"> 3 Historic period features 1 Historic period artifact scatter

TABLE 3.5-1: SUMMARY OF KNOWN CULTURAL RESOURCES

LOCATION - USGS QUADRANGLE MAP	SUMMARY OF KNOWN RESOURCES
	1 Historic period artifact scatter, feature 7 Historic period buildings 1 Historic period isolated artifact 1 Prehistoric period village
Moulton Weir	2 Historic period feature 1 Historic period features, artifacts 1 Prehistoric period artifact scatter, feature 4 Prehistoric period village
N/A	9 Voided, missing, or duplicate records
Potato Hill	1 Prehistoric and historic period artifact scatter 2 Prehistoric period artifact scatter 2 Prehistoric period quarry, artifacts, feature
Princeton	1 Historic period artifact scatter 2 Historic period features 1 Historic period ship (Princeton Ferry)
Rail Canyon	1 Prehistoric period artifact scatter, features 3 Prehistoric period village
Salt Canyon	1 Historic period buildings 1 Historic period buildings, features 3 Historic period feature 10 Prehistoric period artifact scatter 3 Prehistoric period artifact scatter, feature 2 Prehistoric period isolated artifact 9 Prehistoric period village 2 Prehistoric period village, feature 2 Prehistoric period village, historic features 1 Prehistoric period village, rock art 2 Prehistoric and historic period artifact scatter 1 Prehistoric period artifacts, features, rock art 1 Prehistoric period food processing feature 1 Prehistoric period village, historic features
Sites	1 Historic period cemetery 1 Prehistoric period artifact scatter, feature 2 Prehistoric period food processing feature 1 Prehistoric & historic period features 2 Prehistoric period artifact scatter 1 Prehistoric period artifact scatter, feature 4 Prehistoric period village
St. John Mountain	2 Prehistoric period artifact scatter 1 Prehistoric and historic period artifact scatter
Stonyford	1 Historic period buildings
Tisdale Weir	1 Historic period feature 3 Prehistoric period village 1 Prehistoric period village, historic artifacts
Various	2 Historic period feature, structure
Wilbur Springs	3 Historic period buildings, features 2 Historic period cemetery 2 Historic period feature 2 Historic period refuse scatter, features 1 Prehistoric and historic period village 14 Prehistoric period artifact scatter

TABLE 3.5-1: SUMMARY OF KNOWN CULTURAL RESOURCES

LOCATION - USGS QUADRANGLE MAP	SUMMARY OF KNOWN RESOURCES
	1 Prehistoric period food processing feature 2 Prehistoric period isolated artifact 1 Prehistoric period resource, unknown type 2 Prehistoric period village 1 Prehistoric period village, historic features
Wildwood School	1 Historic period buildings 2 Prehistoric period artifact scatter
Williams	2 Historic period features
Wilson Valley	1 Historic period buildings, artifacts, features 1 Historic period buildings, features 1 Historic period features 1 Prehistoric artifacts, historic buildings 1 Prehistoric and historic period artifact scatter 1 Prehistoric period village

3.5.2 REGULATORY SETTING

FEDERAL REGULATIONS

National Historic Preservation Act

Most regulations at the federal level stem from the National Environmental Policy Act (NEPA) and historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966, as amended. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. All projects that are subject to NEPA are also subject to compliance with Section 106 of the NHPA and NEPA requirements concerning cultural resources. Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Department of Transportation Act - Section 4(f)

The Department of Transportation (DOT) Act of 1966, is set forth in Title 49 United States Code (U.S.C.). This law established that it is the policy of the United States Government to make a special effort to preserve historic sites. The Secretary of Transportation may approve a transportation program or project that requires the use of a historic site of national, state, or local significance only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Other Federal Legislation

Historic preservation legislation was initiated by the Antiquities Act of 1966, which aimed to protect important historic and archaeological sites. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbance of archaeological sites on federal land. New permits are currently issued under the Archaeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance preservation and protection of archaeological resources on public and Native American lands. The Historic Sites Act of 1935 declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance."

STATE REGULATIONS

California Register of Historic Resources (CRHR)

California State law also provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared pursuant to the California Environmental Quality Act (CEQA). Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office (SHPO) maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on The National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed. The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

California Environmental Quality Act (CEQA)

CEQA requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. This determination applies to those resources which meet significance criteria qualifying them as "unique," "important," listed on the California Register of Historical Resources (CRHR), or eligible for listing on the CRHR. If the agency determines that a project may have a significant effect on a significant resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. If a cultural resource is found not to be significant under the qualifying criteria, it need not be considered further in the planning process.

CEQA emphasizes avoidance of archaeological and historical resources as the preferred means of reducing potential significant environmental effects resulting from projects. If avoidance is not feasible, an excavation program or some other form of mitigation must be developed to mitigate the impacts. In order to adequately address the level of potential impacts, and thereby design appropriate mitigation measures, the significance and nature of the cultural resources must be determined. The following are steps typically taken to assess and mitigate potential impacts to cultural resources for the purposes of CEQA:

- identify cultural resources,
- evaluate the significance of the cultural resources found,
- evaluate the effects of the project on cultural resources, and
- develop and implement measures to mitigate the effects of the project on cultural resources that would be significantly affected.

California Public Resources Code

Section 5097 of the Public Resources Code specifies the procedures to be followed in the event of the unexpected discovery of historic, archaeological, and paleontological resources, including human remains, historic or prehistoric resources, paleontological resources on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the California Native American Heritage Commission (NAHC). Section 5097.5 of the Code states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. CEQA Guidelines (Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Senate Bill 18 (Burton, Chapter 905, Statutes 2004)

SB 18, authored by Senator John Burton and signed into law by Governor Arnold Schwarzenegger in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places (“cultural places”) through local land use planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §653524, and §65562.5 to the Government Code; also

requires the Governor’s Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments for how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project is considered to have a significant impact on cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource; or
- Disturb any human remains, including those interred outside of formal cemeteries.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Substantial Adverse Change in the Significance of a Historical or Archaeological Resource (Less than Significant)

A substantial adverse change in the significance of an historic resource is defined at Section 15064.5 (b)(1) of the CEQA Guidelines as the “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” Known historic and prehistoric resource sites are located throughout Colusa County and it is expected that additional undiscovered sites may be located in various areas of the County as well. While the 2030 General Plan does not directly propose any adverse changes to any historic or archaeological resources, future development allowed under the 2030 General Plan could affect known historical and archaeological resources or unknown historical and archaeological resources which have not yet been identified.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County's General Plan, Zoning Ordinance, and other applicable state and local regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. The 2030 General Plan includes policies and actions that would reduce impacts to cultural, historic, and archaeological resources, as well as policies and actions for the conservation of cultural, historic, and archaeological resources. Policies CON-3, CON-4, and CON-9 encourage the protection and preservation of cultural and historic resources. Policy CON-2 addresses the discovery of significant archaeological and historic resources during construction and grading activities, requiring that development work be stopped in the event of a discovery and that appropriate measures be implemented to protect the resource. Policy CON 3-1 requires cultural and archaeological resource surveys prior to development in an area sensitive for cultural resources, which include historic resources. Additionally, this policy requires that if significant historical or archaeological resources are identified, appropriate measures will be taken to reduce potential adverse impacts. Adoption and implementation of the policies and actions listed below would ensure that adverse effects on significant historic and archaeological resources are reduced to a **less than significant** level.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 3-1: Require a cultural and archaeological survey prior to approval of any project which would require excavation in an area that is sensitive for cultural or archaeological resources. If significant cultural or archaeological resources, including historic and prehistoric resources, are identified, appropriate measures shall be implemented, such as documentation and conservation, to reduce adverse impacts to the resource.

Policy CON 3-2: Require all development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

- a. If construction or grading activities result in the discovery of significant historic or prehistoric archaeological artifacts, all work within 100 feet of the discovery shall cease, the County Department of Planning and Building shall be notified, the resources shall be examined by a qualified archaeologist or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the County Department of Planning and Building.*
- b. If human remains are discovered during any ground disturbing activity, work shall stop until the County Coroner and County Department of Planning and Building have been contacted; if the human remains are determined to be of Native American origin, the NAHC and most likely descendant have been consulted; and work may only resume when appropriate measures have been taken and approved by the County Department of Planning and Building.*

3.5 CULTURAL RESOURCES

Policy CON 3-3: Encourage and cooperate with cities, special districts, State and Federal agencies in acknowledging and preserving the County's cultural heritage, historical and archaeological structures, sites and landmarks.

Policy CON 3-4: Encourage voluntary landowner efforts to protect cultural resources consistent with applicable State law.

Policy CON 3-9: Encourage historic resources to remain in their original use whenever possible. The adaptive use of historic resources is preferred, particularly as museums, educational facilities, or visitor-serving uses, when the original use can no longer be sustained. Older residences may be converted to office/retail use in commercial areas and to tourist or business use in agricultural areas, so long as their historical authenticity is maintained or enhanced.

Actions

Action CON 3-A: Develop a Historic Colusa County program to identify historic resources, encourage landowners to voluntarily preserve and rehabilitate historical structures, and to provide a coordinated approach to draw visitors and tourists to these areas. The program may include:

- a. Coordinated signage and identifying placards of historic areas, including downtowns, specific buildings, and businesses.*
- b. Maps available on-line, at the Chamber of Commerce, and key locations of the County that direct visitors and history aficionados to key historic and cultural resources in the County.*
- c. Establishment of local historic districts with standards to conserve historical resources and promote the highest and best use of such resources.*
- d. Property owner incentives (e.g., reduced building permit fees for historic renovations, streamlined application processing, a brochure that identifies resources to purchase materials and fixtures that are historically accurate in appearance but offer modern benefits (e.g., energy-efficient lighting, windows, building materials that correlate to specific architectural or historic periods that are often seen in the County).*

Impact 3.5-2: Disturbance of Human Remains (Less than Significant)

Indications are that humans have occupied Colusa County for at least 6,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities allowed under the 2030 General Plan may yield human remains that may not be marked in formal burials.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County's General Plan, Zoning Ordinance, and other applicable state and local regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that Native American human remains are inadvertently discovered during development activities. The 2030 General Plan includes

Policy CON 3-2, which identifies the procedures for any development, infrastructure, and other ground-disturbing project to follow in the event of the discovery of human remains. Policy CON 3-2 ensures that the human remains will be treated appropriately and, if the remains are Native American, that the Native American Heritage Commission is contacted. Implementation of this policy ensures that potential adverse impacts to human remains would be **less than significant**.

2030 GENERAL PLAN POLICIES THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 3-2: Require all development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

- a. If construction or grading activities result in the discovery of significant historic or prehistoric archaeological artifacts or unique paleontological resources, all work within 100 feet of the discovery shall cease, the County Department of Planning and Building shall be notified, the resources shall be examined by a qualified archaeologist, paleontologist, or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the County Department of Planning and Building.*
- b. If human remains are discovered during any ground disturbing activity, work shall stop until the County Coroner and County Department of Planning and Building have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendant have been consulted; and work may only resume when appropriate measures have been taken and approved by the County Department of Planning and Building.*

Impact 3.5-3: Damage to or the Destruction of Paleontological Resources (Less than Significant)

Development allowed under the 2030 General Plan could result in the discovery and disturbance of paleontological resources. Geologic formations, including the Upper Cretaceous marine sedimentary rocks and various Quaternary subunits, that have a high to moderate potential for paleontological resources are present in the Sacramento Valley. As future development and infrastructure projects are considered by the County, subsequent development and infrastructure would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. The 2030 General Plan provides guidance regarding the conservation of paleontological resources, ensuring that any unique paleontological resources discovered during implementation of the General Plan are conserved appropriately. The implementation of Policy CON 3-2, listed above, would ensure potential impacts to paleontological resources are reduced to **less than significant**.

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Geology is the science and study of the solid Earth and the processes by which it is shaped and changed. Modern geology is publicly important for predicting and understanding natural hazards, has a seismicity, erosion, and landslides, which plays an essential role in geotechnical engineering structures for safety.

This section provides a background discussion of the seismic and geologic hazards, and other geologic hazards, and mineral resources found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.6.1 ENVIRONMENTAL SETTING

Colusa County lies on the boundary between the Great Central Valley and Coast Ranges Geomorphic Provinces. At its lowest, the elevation in eastern Colusa County is approximately 40 feet above sea level. Snow Mountain, in northwestern Colusa County has an elevation of slightly over 7,000 feet. While the county tends to increase in elevation from east to west, the higher elevations of the Coast Ranges are fragmented by alluvial valleys¹ in places.

While it has experienced ongoing sedimentation since the Jurassic, the Central Valley is generally described as Quaternary sedimentary deposits. The Quaternary alluvial deposits of the Central Valley occupy the eastern one-half of the county. Alluvial deposits are found in northwestern Colusa County along Stony Creek. Finally, alluvial deposits are found in western Colusa County along Bear Creek. The Coast Ranges, which occupy western Colusa County, are dominated by Mesozoic sedimentary shelf and slope rocks and the Franciscan Formation. In addition, serpentinized ultramafic rocks are found along the western boundary of the Franciscan Formation.

SOIL TYPES

The Soil Survey of Colusa County, prepared by the US Department of Agriculture in 2006, identifies over 120 soil types (soil map units) are present in Colusa County. These map types are classified into broader associations, based on soil characteristics. **Table 3.6-1** summarizes the soil associations present in Colusa County.

TABLE 3.6-1: GENERAL SOIL ASSOCIATIONS

<i>DESCRIPTION AND LOCATION</i>	<i>MAJOR USES</i>	<i>MANAGEMENT CONCERNS</i>	<i>MANAGEMENT MEASURES</i>
Vina-Moonbend-Scribner Association Very deep, nearly level, moderately well drained, well drained, and poorly drained soils formed in alluvium derived from mixed rock sources; on flood plains along the Sacramento River and west-side streams	Irrigated crops	Water table and flooding	Drainage systems and floodprotection structures
Willows-Clear Lake-Capay Association Very deep, nearly level, poorly drained and	Irrigated crops	Water table, flooding, and	Drainage systems, floodprotection structures, and

¹ Bear Valley and Indian Valley, both north-south trending features, are prominent examples.

3.6 GEOLOGY, SOILS, AND MINERALS

TABLE 3.6-1: GENERAL SOIL ASSOCIATIONS

<i>DESCRIPTION AND LOCATION</i>	<i>MAJOR USES</i>	<i>MANAGEMENT CONCERNS</i>	<i>MANAGEMENT MEASURES</i>
moderately well drained soils formed in fine textured alluvium derived from mixed rock sources; in the Colusa Basin and Butte Sink		fine textures	cropping and tillage operations that are adapted to the fine textures
Westfan-Mallard Association Very deep, nearly level, well drained and somewhat poorly drained soils formed in alluvium derived from mixed rock sources; on alluvial fans on the west side of the Sacramento Valley	Irrigated crops	Water table, flooding, and restricted permeability	Drainage systems, floodprotection structures, and irrigation water management that prevents a perched water table
Hillgate-Arbuckle-Corval-Corning Association Very deep, nearly level to moderately sloping, well drained soils formed in alluvium derived from mixed rock sources; on terraces, flood plains, and alluvial fans along the west side of the Sacramento Valley	Irrigated crops	Restricted permeability	Irrigation water management that prevents a perched water table
Altamont-Ayar-Sehorn Association Very deep and moderately deep, gently sloping to steep, well drained soils formed in residuum derived from sandstone, siltstone, and shale; on foothills of the Coast Range	Livestock grazing	Slow permeability, fine textures, and slope	Prescribed grazing management, which helps to control erosion and compaction and helps to maintain riparian areas
Millsholm-Goldeagle-Contra Costa Association Deep, moderately deep, and shallow, gently sloping to very steep, well drained soils formed in residuum derived from sandstone, siltstone, and shale; on foothills of the Coast Range	Livestock grazing	Slow permeability, shallow soil depth, and slope	Prescribed grazing management, which helps to control erosion and compaction and helps to maintain riparian areas
Capay-Hillgate-Saltcanyon Association Very deep, nearly level to moderately sloping, moderately well drained and well drained soils formed in alluvium derived from mixed rock sources; on alluvial fans and terraces and in basins in Coast Range valleys	Livestock grazing	Slow permeability and fine textures	Prescribed grazing management, which helps to control compaction and streambank erosion
Venado-Leesville Association Very deep, nearly level to gently sloping, poorly drained and well drained soils formed in alluvium derived from peridotite rock sources; on alluvial fans and in basins in Bear Valley (figure 5) on the Coast Range	Livestock grazing	Slow permeability, fine textures, poor drainage, and streambank erosion	Prescribed grazing management, which helps to control streambank erosion and compaction
Okiota-Henneke Association Moderately deep and shallow, strongly sloping to very steep, well drained soils formed in residuum derived from peridotite rock; on Coast Range mountains	Wildlife habitat, recreation, and watershed	Slow permeability, shallow soil depth, and slope	Erosion-control structures on sites for roads
Maymen-Etsel Association	Wildlife habitat,	Shallow soil	Erosion-control structures on

TABLE 3.6-1: GENERAL SOIL ASSOCIATIONS

<i>DESCRIPTION AND LOCATION</i>	<i>MAJOR USES</i>	<i>MANAGEMENT CONCERNS</i>	<i>MANAGEMENT MEASURES</i>
Shallow, moderately steep and steep, well drained soils formed in residuum derived from sandstone and shale rock sources; on Coast Range mountains	recreation, and watershed	depth and slope	sites for roads
Neuns-Goulding Association Moderately deep and shallow, moderately steep to very steep, well drained soils formed in residuum derived from metamorphic rocks; on the Coast Range mountains	Wildlife habitat, recreation, watershed, and timber production	Shallow soil depth and slope	Erosion-control structures on sites for roads, skid trails, and log landings
Freezeout-Yollabolly Association Moderately deep and shallow, moderately steep and steep, well drained and excessively drained, frigid soils formed in residuum derived from metamorphic rocks; on the higher mountains of the Coast Range from Goat Rock to Snow Mountain	Wildlife habitat, recreation, watershed, and timber production	Shallow soil depth and slope	Erosion-control structures on sites for roads, skid trails, and log landings

SEISMIC AND GEOLOGIC HAZARDS

Seismic Hazards

Seismic hazards include both rupture (surface and subsurface) along active faults and ground shaking, which can occur over wider areas. Ground shaking, produced by various tectonic phenomena, is the principal source of seismic hazards in areas devoid of active faults. All areas of the state are subject to some level of seismic ground shaking.

Several scales may be used to measure the strength or magnitude of an earthquake. Magnitude scales (ML) measure the energy released by earthquakes. The Richter scale, which represents magnitude at the earthquake epicenter, is an example of an ML. As the Richter scale is logarithmic, each whole number represents a 10-fold increase in magnitude over the preceding number. The following table represents effects that would be commonly associated with Richter Magnitudes:

TABLE 3.6-2: RICHTER MAGNITUDES AND EFFECTS

<i>MAGNITUDE</i>	<i>EFFECTS</i>
< 3.5	Typically not felt
3.5 – 5.4	Often felt but damage is rare
5.4 – < 6	Damage is slight for well-built buildings
6.1 – 6.9	Destructive potential over ±60 miles of occupied area
7.0 – 7.9	“Major Earthquake” with the ability to cause damage over larger areas
≥ 8	“Great Earthquake” can cause damage over several hundred miles

Moment Magnitude (Mw) is used by the United States Geological Service (USGS) to describe the magnitude of large earthquakes in the US. The value of *moment* is proportional to fault slip multiplied by the fault surface area. Thus, *moment* is a measurement that is related to the amount

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of energy released at the point of movement. The Mw scale is often preferred over other scales, such as the Richter, because it is valid over the entire range of magnitudes. *Moment* is normally converted to Mw, a scale that approximates the values of the Richter scale.

An earthquake's strength can also be expressed in terms of "Acceleration." The horizontal acceleration of the Earth during an earthquake can be described in terms of its percentage of gravity (g). Furthermore, seismic hazards can be estimated by calculating the probability of a seismic event in a given area over a specific amount of time. For example, the USGS calculates the probability of exceeding (%g) in 50 years. The likely rates of horizontal acceleration in Colusa County tend to increase from east to west. Table 3.6-3 represents a generalization of the 10 percent probability of exceedance in 50 years for Colusa County, as identified by the USGS:

TABLE 3.6-3: 10 PERCENT PROBABILITY OF EXCEEDANCE IN 50 YEARS (%G)

WESTERN COUNTY	CENTRAL COUNTY	EASTERN COUNTY
< 40%	20% - 30%	≈ 15%

In contrast, other scales describe earthquake intensity, which can vary depending on local characteristics. The Modified Mercalli Scale (MM) expresses earthquake intensity at the surface on a scale of I through XII. The following table represents the potential effects of an earthquake based on the Modified Mercalli Intensities:

TABLE 3.6-4: MODIFIED MERCALLI INTENSITIES AND EFFECTS

MM	EFFECTS
I	Movement is imperceptible
II	Movement may be perceived (by those at rest or in tall buildings)
III	Many feel movement indoors; may not be perceptible outdoors
IV	Most feel movement indoors; Windows, doors and dishes will rattle
V	Nearly everyone will feel movement, sleeping people may be awakened;
VI	Difficulty walking; Many items fall from shelves, pictures fall from walls
VII	Difficulty standing; Vehicle shaking felt by drivers; Some furniture breaks
VIII	Difficulty steering vehicles; Houses may shift on foundations
IX	Well-built buildings suffer considerable damage; ground may crack
X	Most buildings and foundations and some bridges destroyed
XI	Most buildings collapse; Some bridges destroyed; Large cracks in ground
XII	Large scale destruction; Objects can be thrown into the air

As mentioned previously, all of California is subject to seismic ground shaking. Thus, while there are no known active faults within the county, the area could experience considerable ground shaking generated by faults outside Colusa County. For example, southeastern Colusa County could experience intensities of MM VII to VIII generated by seismic events occurring in Sutter County.

The *Significant United States Earthquakes 1568 – 2004* data published by the USGS in the National Atlas identifies earthquakes that caused deaths, property damage, geologic effects or were felt by

populations near the epicenter. No significant earthquakes are identified within Colusa County. However, significant earthquakes were documented in three adjacent counties.

The county could be subject to major earthquakes along currently unrecognized faults. The 1983 Coalinga Quake, at the Central Valley/Coast Range boundary, was a major seismic event (ML 6.5 – 6.7) that took place on a previously unknown fault. The 1994 Northridge Quake (Mw 6.7) took place along a “blind” thrust fault, over 10 miles below the surface.

Liquefaction

Liquefaction, which is primarily associated with loose, saturated materials, is most common in areas of sand and silt or on reclaimed lands. Liquefaction may occur when the cohesion between the loose materials that comprise the soil is jeopardized during seismic events, resulting in the ground taking on liquid properties. Thus, liquefaction requires specific soil characteristics and seismic shaking.

In collaboration with the USGS Earthquake Hazard Program, the California Geological Survey (CGS) produces liquefaction Susceptibility Maps and identifies “Zones of Required Investigation” per the state’s Seismic Hazard Zonation Program.

The article *Mapping Liquefaction-Induced Ground Failure Potential* (Youd and Perkins, 1978) provides a generalized matrix to demonstrate the relationship between liquefaction potential and depositional landscapes. The following table, which is recreated from Youd and Perkins, demonstrates the general relationship between the nature and age of sediment and the anticipated liquefaction potential:

TABLE 3.6-5: LIQUEFACTION POTENTIAL BASED ON SEDIMENT TYPE AND AGE OF DEPOSIT				
<i>SEDIMENT</i>	<i>SUSCEPTIBILITY BASED ON AGE OF DEPOSITS (YEARS BEFORE PRESENT)</i>			
	<i>MODERN (< 500 YEARS)</i>	<i>HOLOCENE (< 10,000)</i>	<i>PLEISTOCENE (< 2 MILLION)</i>	<i>PRE-PLEISTOCENE (> 2 MILLION)</i>
River Channel	Very High	High	Low	Very Low
Flood Plain	High	Moderate	Low	Very Low
Alluvial Fan/Plain	Moderate	Low	Low	Very Low
Lacustrine/Playa	High	Moderate	Low	Very Low
Colluvium	High	Moderate	Low	Very Low
Talus	Low	Low	Very Low	Very Low
Loess	High	High	High	- ? -
Glacial Till	Low	Low	Very Low	Very Low
Tuff	Low	Low	Very Low	Very Low
Tephra	High	High	- ? -	- ? -
Residual Soils	Low	Low	Very Low	Very Low
Sebka	High	Moderate	Low	Very Low
Un-compacted Fill	Very High	NA	NA	NA
Compacted fill	Low	NA	NA	NA

The CGS Liquefaction Susceptibility Maps and “Zones of Required Investigation” are produced per the state’s Seismic Hazard Zonation Program. In Northern California, the areas of high liquefaction potential identified by the CGS are confined to the nine Bay Area counties, which do not include Colusa County.

Logically, the Sacramento River corridor presents the greatest likelihood of loose sediment and saturated soils within Colusa County. However, eastern Colusa County is the least prone to strong seismic ground shaking reducing the potential for liquefaction.

The Bear Valley area in western Colusa County is largely comprised of alluvium. Similarly, the Stony Creek Basin in the northwestern area of the county is comprised largely of alluvium. Alluvial deposits are also present, to a lesser degree, in the Funks Creek and Antelope Creek Basins.

Structural Damage

Seismic events can have particularly negative effects on older buildings constructed of unreinforced masonry (URM), including materials such as brick, concrete and stone. The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. Colusa County is within the less hazardous Zone 3.

Areas of the state within Zone 4 are subject to a series of regulations mandating URM identification and retrofitting actions. Compared to other areas of the county, the City of Colusa could experience disproportionately high levels of structural damage due to the concentration of historic structures in the downtown area. However, relative to URM hazards in Zone 4, the risk of structural damage in Colusa is comparatively low.

Delineating Faults and Seismic Hazards

Alquist-Priolo Fault Zones: An active earthquake fault, per California’s Alquist-Priolo Act, is one that has ruptured within the Holocene Epoch (~11,000 years). Based on this criterion, the CGS identifies Earthquake Fault Zones. These Alquist-Priolo Fault Zones are identified in Special Publication 42 (SP42), which is updated as new fault data become available. Table 4 of SP42 lists all counties and cities within California that are affected by designated Earthquake Fault Zones. The Fault Zones are delineated in Figure 4 and Figures 4A through 4J of SP42 (Earthquake Fault Zone Maps).

No Alquist-Priolo Earthquake Fault Zones are identified within the County of Colusa.

Seismic Hazard Zones: The state Seismic Hazards Mapping Act (1990) addresses hazards along active faults. The Northern California counties affected by the Seismic Hazard Zonation Program include Alameda, San Francisco, San Mateo and Santa Clara.

No Seismic Hazard Zones are identified within the County of Colusa.

USGS Seismic Hazard Maps: In addition to the CGS fault delineation activities, the USGS is responsible for the production of National Seismic Hazard Maps. The USGS *Quaternary Fault and Fold Database of the United States* categorizes faults based on the number of years since the last known movement.

Historic: No Historic faults are identified by the USGS in, or around, Colusa County.

Latest Quaternary: Bartlett Springs Fault (Lake County) and the Hunting Creek-Berryessa Complex (Lake and Yolo Counties) are the nearest documented Latest Quaternary Faults.

Late Quaternary: Big Valley (Lake County) and Stony Creek (Glenn County) are the nearest Late Quaternary Faults identified by the USGS.

Mid-to-Late Quaternary: No Mid-to-Late Quaternary faults are identified in, or around, Colusa County.

Quaternary Faults: Segments 1, 2 and 3 of the Great Valley Complex are identified by the USGS within the boundaries of Colusa County. These segments are designated as Class B in the National Seismic Hazard Maps "Fault Parameters."

TABLE 3.6-6: GREAT VALLEY FAULT PARAMETERS

<i>FAULT</i>	<i>SLIP RATE</i>	<i>MW</i>
Great Valley 1	0.1 mm/year	6.7
Great Valley 2	0.1 mm/year	6.4
Great Valley 3	1.5 mm/year	6.9

The 2008 Update to the National Seismic Hazard Maps identifies two types of fault sources in California. "Class A" faults are well-defined faults, with published information on geometry, slip rates, sequences and historic activity. In contrast, "Class B" fault characteristics are identified through published data addressing slip rates and geometry.

OTHER GEOLOGIC HAZARDS

Seiches

Seiches are standing waves that occur in relatively large, enclosed bodies of water that can follow seismic, landslide and other events. In California, Lake Tahoe is the principal body of water subject to seiche hazards. The relatively high potential for seiches is a product of Lake Tahoe's size and depth combined with the Eastern Sierra's tectonic activity.

The CGS publication entitled *Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings* is used to determine the adequacy of geotechnical investigations for public facilities per CCR, Title 24. *Tsunami* and *seiches* fall under the heading "Exceptional Geologic Hazards," which states:

Tsunami or Seiche — only for low-lying sites close to California coastline or large lakes and reservoirs

In the CGS report *The Shakeout Scenario*, the implications of a major earthquake were analyzed for eight Southern California counties: Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. The analysis of secondary impacts included consideration of landslides, liquefaction, *tsunami* and *seiches*. The report states that *tsunami* and *seiches* were not considered secondary hazards because they would not produce significant impacts within the eight-county study area.

Western Colusa County is well over 50 miles, as the crow flies, from the Pacific Coast. *Tsunami* impacts would not be anticipated within the Planning Area. Similarly, there is little indication that *seiches* would be a significant, secondary seismic hazard within Colusa County. However, standing waves could occur in many of the reservoirs found throughout the county. The most notable of these water bodies is East Park Reservoir, which has a surface area of nearly 1,700 acres.

Landslide

Professional Paper 1183 (USGS, 1982) identifies landslide² potentials for physical sub-regions of the United States. The USGS *Landslide Incidence and Susceptibility* spatial data delineate documented landslide events as well as levels of landslide susceptibility for physical sub-regions. The CGS, in cooperation with the USGS, participates in the Landslide Inventory Pilot Project. The CGS landslide hazard data, as with the seismic hazard data, are primarily focused on the Bay Area and Southern California.

The landslide susceptibility for a given sub-region is normally identified by the USGS as high, moderate or low. A sub-region with landslide involvement of ≥ 15 percent of its total area is considered to have a high susceptibility. A total landslide involvement area of 1.5 percent to 15 percent results in a moderate designation for the corresponding sub-region. Low landslide susceptibility corresponds with <1.5 percent landslide involvement throughout a region's total area.

Landslide potentials in Colusa County are influenced by physical factors, such as slope, soil and precipitation. The landslide susceptibility in the eastern one-half of the county is generally low. A north-south band of moderate landslide potential stretches from East Park Reservoir south to the Bear Valley. Generally, this area of moderate potential frames the north-south trending valleys at the Coast Range/Central Valley boundary. Only the northwestern portion of the county is within a sub-region of high landslide susceptibility. This area of high susceptibility is almost entirely within the boundaries of the Mendocino National Forest.

Erosion

The US Natural Resources Conservation Service (NRCS) delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The following description of erosion factors is provided by the NRCS Physical Properties Descriptions:

² The term "landslide" broadly describes any number of gravitational mass movements (slumps, falls, slides, et cetera).

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water...Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

As mentioned above, the Kw factor for a given soil can range from 0.02 to 0.69, with 0.69 being the most “erodible.” Soils data for Colusa County were obtained from the NRCS in order to identify the spatial distribution erosion factors. In the following table, erosion factor Kw represents erodibility of the whole soil, as the estimates are modified by the presence of rock fragments. Table 3.6-7 identifies approximate countywide acreages and percentages of total county area for low, moderate, high and very high erosion factor soils. The westernmost portion of the county, primarily in the area of the Mendocino National Forest, has not been surveyed. Areas without soils data and surface water are represented in the “No Value” row.

<i>KW</i>	<i>ACRES</i>	<i>PERCENT</i>
≤ 0.17	9345.7	1.30%
0.17 - 0.35	436347.1	59.00%
0.35 -0.52	196851	26.70%
0.52 -0.69	0	0.00%
No Value	97782.5	13.30%
Total	740326	100%

As identified in the table, very little of the surveyed portion of the county contains soils with a low erosion factor. In addition, no soils with a very high erosion factor are identified within the county. Moderate erosion factors dominate the county’s surveyed soils. High erosion factors are found primarily along the Sacramento River corridor and along the Coast Range/Central Valley boundary.

Subsidence

While land subsidence can be caused by fault rupture and liquefaction, it is often the result of resource extraction and land use practices. In terms of both speed and distance, the downward movement can be slight to severe.

In some cases, subsidence occurs over subterranean voids. These voids are often created during resource extraction activities, such as coal, metallic ore and limestone mining. According to the *Multi-Hazard Identification and Risk Assessment* (FEMA, 1997), 71 percent of the developed land that is threatened with this type of subsidence is within Pennsylvania, Illinois and West Virginia.

In other cases, subsidence can be the product of sediment compaction, which is often caused by fluid withdrawal activities. The fluid pressure in sediments supports some of the weight of the material above a subsurface reservoir. As the fluid is extracted, the solid material must bear the overburden to the extent that the support from fluid pressure is lost. Sediment compaction can occur if excessive fluid is extracted and the remaining solid material is compressible. For example,

subsidence has been documented in areas where groundwater extraction has consistently exceeded recharge. In some cases, the drainage of highly organic soils can lead to sediment compaction that is exacerbated by biological oxidation and extreme desiccation. This phenomenon is limited to areas with organic soils, such as peat or muck.

Subsidence has been documented in some areas of the Sacramento Valley. For example, marked subsidence has been documented in eastern Yolo County, apparently the result of non-sustainable levels of groundwater extraction. In the Sacramento/San Joaquin Delta, subsidence has been associated with the drainage of organic soils and sediment compaction, which has been exacerbated by biological oxidation and extreme desiccation.

The report *Ground Water Levels in the Sacramento Valley Groundwater Basin – Colusa County* (DWR, 1994) summarizes hydrographs dating to the 1920s, from 114 groundwater wells in Colusa County. Water management and delivery practices appear to have rectified declining ground water levels that were documented into the 1960s. The application of surface water, which coincided with the abandonment of large-scale groundwater extraction, also appears to have stabilized annual fluctuations in groundwater levels that were experienced prior to the late 1960s.

Expansive Soils

The NRCS delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. The following description of linear extensibility is provided by the NRCS Physical Properties Descriptions:

"Linear extensibility" refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

The linear extensibility of the soils within Colusa County ranges from Low to Very High. Based on NRCS data, there are over 733,000 acres of land and nearly 7,000 acres of water within Colusa County. Of the ±733,000 acres of soils within the county, the following amounts fall within the four linear extensibility categories:

- Low: ±218,000 acres (29 percent)
- Moderate: ±219,000 acres (29.9 percent)
- High: ±140,000 acres (18.8 percent)
- Very High: ±157,000 acres (21.3 percent)

Therefore, approximately seventy percent of the county's land surface is comprised of soils that would require special design considerations due to shrink-swell potentials. Three general areas of low linear extensibility are found within the county. These generalized areas are as follows: the northwest corner of the county (west of Stonyford), along the Coast Range/Central Valley Boundary (east of East Park Reservoir and Bear Valley), and along the Sacramento River.

Volcanism

The USGS identifies two principal areas of volcanic hazards in Northern California: the Shasta, Medicine Lake Highland, and Lassen Peak Area and the Clear Lake Area. Mount Shasta and Lassen Peak are located at the southern terminus of the Cascade Range and the associated subduction zones along the west coast of North America. The Clear Lake Volcanic Field is markedly different in its origins and topographic characteristics. Relative to tectonic activity, the Coast Range has been subjected primarily to the lateral faulting of the San Andreas system. The largest volcanic feature within the Clear Lake Field is Mount Konocti, located along the south shore of Clear Lake.

Relative to Colusa County, the Clear Lake Volcanic Field is the nearest source of documented volcanic hazards. In contrast to the volcanoes of the southern Cascades, such as Lassen and Shasta, the Clear Lake Field is not associated with subduction. The Clear Lake and Sonoma volcanic phenomena are within the San Andreas Fault system. According to Wood and Kienle (1990), the field is lacking eruptive centers and volcanism tends to be non-explosive.

Sims and Rymer (1975) estimate the most recent eruption for the Clear Lake Field occurred approximately 10,000 years before present. That event is thought to have produced mafic tephra generated by phreato-magmatic explosions. The USGS identifies the Clear Lake Field's "most probable" potential hazards as phreatic explosions, phreato-magmatic explosions and base surges. These events could result in "small-volume" tephra eruptions.

Therefore, volcanic hazards are most likely in the westernmost areas of the county, which are nearest to the Clear Lake Field. However, given the nature of the most probable potential hazards and the distance from Colusa County, the Clear Lake Field is not likely to generate significant impacts in the county.

MINERAL RESOURCES

Mineral Resource Zone Classifications

The State Mining and Geology Board (SMGB) prioritizes areas to be classified as containing significant mineral resources and areas to be designated as containing mineral deposits of regional or statewide significance. Mineral Resource Zone (MRZ) categories are used to identify areas identified, undetermined, and unknown mineral resource significance. No MRZ designations have been applied to Colusa County.

Mineral Resource Data System (MRDS)

MRDS describes metallic and nonmetallic mineral resources throughout the world and identifies the deposit name, location, commodity, deposit description, geologic characteristics, production,

reserves, resources, and references. MRDS data indicates 85 records of known mineral resources in Colusa County. The majority of resources are historic records. The primary resources identified include chromium, copper, mercury, sand/gravel, and stone. Most resources in Colusa County are identified as occurrences, prospects, or development status unknown. The majority of records indicate no known workings (e.g., no known efforts of mineral resource extraction) at the site, which may indicate that the resource find was limited or not feasible to extract. 29 records indicate known workings, including one placer, 16 surface, five surface/underground combination, four underground, and three wells.; this data includes active and inactive workings. Figure 3.6-1 depicts areas with known mineral resources in Colusa County.

3.6.2 REGULATORY SETTING

FEDERAL

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 (42 USC, 7701 et seq.) requires the establishment and maintenance of an earthquake hazards reduction program by the federal government.

Executive Order 12699

This order implements provisions of the Earthquake Hazards Reduction Act for “federal, federally assisted or federally regulated new building construction” and requires the development and implementation of seismic safety programs by federal agencies.

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and Criteria of the State Mining and Geology Board, which governs the exercise of governments’ responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and

- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

“Sufficiently Active” and “Well Defined” are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

California Building Code (CBC)

The CBC is set forth in Title 24 of the California Code of Regulations (CCR). The CBC is contained within the California Building Standards Code. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls and site demolition. It also regulates grading activities, including drainage and erosion control. A local jurisdiction may establish more restrictive building standards reasonably necessary because of local climatic, geological or topographical conditions.

Caltrans Seismic Design Criteria

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC), which is an encyclopedia of new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis, and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support, and Materials and Foundations. Memo20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components and seismic design practices that collectively make up Caltrans’ seismic design methodology.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various “seismic hazard zones.”

- Cities and Counties, or other local permitting authority, must regulate certain development “projects” within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.

3.6 GEOLOGY, SOILS, AND MINERALS

- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.
- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

Surface Mining and Reclamation Act of 1975

The California Department of Conservation Surface Mining and Reclamation Act of 1975 (§ 2710), also known as SMARA, provides a comprehensive surface mining and reclamation policy that permits the continued mining of minerals, as well as the protection and subsequent beneficial use of the mined and reclaimed land. The purpose of SMARA is to ensure that adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition and readily adaptable for alternative land uses. The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, as well as aesthetic enjoyment. Residual hazards to public health and safety are eliminated. These goals are achieved through land use planning by allowing a jurisdiction to balance the economic benefits of resource reclamation with the need to provide other land uses.

If a use is proposed that might threaten the potential recovery of minerals from an area that has been classified MRZ-2, SMARA would require the jurisdiction to prepare a statement specifying its reasons for permitting the proposed use, provide public notice of these reasons, and forward a copy of the statement to the State Geologist and the State Mining and Geology Board (Cal. Pub. Res. Code Section 2762).

Water Code

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

LOCAL

Colusa County Resource Conservation District (CCRCD)

The CCRCD identifies and addresses resource concerns within Colusa County, including the soil, water, and wildlife conservation interests of rural landowners. The USDA Natural Resource Conservation Service provides technical assistance for the CCRCD's projects. The CCRCD's priorities include protecting soil resources and reducing erosion and sedimentation.

Colusa County Land Grading and Levelling Standards

Chapter 9 of the Colusa County Code regulates the grading and levelling of land, the obstruction of or change in the natural drainage, and the control of irrigation and drainage water. The County's

grading standards apply to projects that would change the natural course of any channel or waterway or to projects that would grade or level five or more acres of land.

Colusa County Hillside Standards

Section 8.10 of the Colusa County Code establishes hillside standards that include development guidelines designed to reduce the environmental effects from development on physically constrained lands of the hillside areas. The hillside standards apply to lands within any hillside area.

Geotechnical Investigations

Colusa County regulates construction activities through a process that requires the preparation of a site-specific geotechnical investigation in order to assess the design limitations. The purpose of a site-specific geotechnical investigation is to provide a geologic basis for the development of appropriate construction design. Geotechnical investigations typically assess bedrock and Quaternary geology, geologic structure, soils, and the previous history of excavation and fill placement. Proponents of the individual projects may need to prepare geotechnical investigations prior to project design.

3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on geology and hazards if it will:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault;
 - Strong seismic ground shaking; or
 - Seismic-related ground failure, including liquefaction.
- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or
- 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 waste water disposal systems where sewers are not available for the disposal of waste water;
- 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; or

- 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.

IMPACTS AND MITIGATION MEASURES

Impact 3.6.1: Potential to expose people or structures to potential adverse effects involving rupture of a fault, strong seismic ground shaking, or seismic-related ground failure (less than significant)

There are no active faults or Alquist-Priolo Earthquake Fault Zones in Colusa County. There are potentially active faults in nearby counties. Rupture of a potentially active fault in nearby counties, or of an unknown fault in the region could cause seismic ground shaking. As a result, future development in Colusa County may expose people or structures to potential adverse effects associated with a seismic event, including strong ground shaking and seismic-related ground failure.

All projects would be required to comply with the provisions of the California Building Standards Code, which requires development projects to: perform geotechnical investigations in accordance with state law, engineer improvements to address potential seismic and ground failure issues, and to use earthquake-resistant construction techniques to address potential earthquake loads when constructing buildings and improvements. As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the California Building Code, the County's General Plan, Zoning Ordinance, and other regulations, including the Land Grading and Leveling Ordinance. Subsequent development and infrastructure would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. In addition to the requirements associated with the CBC and the County Code, the 2030 General Plan includes policies and actions to address potential impacts associated with seismic activity.

Policy SA 1-14 requires new land development proposals to avoid unreasonable exposure to geologic hazards, including earthquake damage, subsidence, liquefaction and expansive soils. Policy SA 1-15 requires all development and construction proposals to be reviewed by the County to ensure conformance with applicable building standards. Policy SA 1-18 permits development on soils sensitive to seismic activity only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity. Policy SA 1-19 requires all new and existing dam structures to address seismic standards of dam safety, including those promulgated by the State Division of Safety of Dams. Policy SA 1-20 requires geotechnical investigations to be completed prior to approval of any 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 and/or geological hazards. Policy SA 1-21 requires all projects subject to CEQA review to address seismic safety issues and provide adequate mitigation for existing and potential hazards identified. Action SA 1-F, Action SA 1-H, Action SA 1-I, Action SA 1-J, Action SA 1-K, and Action SA 1-L are actions that implement these policies. With the implementation of the policies and actions in the 2030 General Plan, as well as applicable state and county codes, potential impacts as associated with a seismic

event, including rupture of an earthquake fault, seismic ground shaking, and liquefaction would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy SA 1-14: Require new land development proposals to avoid unreasonable exposure to geologic hazards, including earthquake damage, subsidence, liquefaction and expansive soils.

Policy SA 1-15: All development and construction proposals shall be reviewed by the County to ensure conformance with applicable building standards.

Policy SA 1-18: Permit development on soils sensitive to seismic activity only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity.

Policy SA 1-19: Address seismic standards of dam safety, including those promulgated by the State Division of Safety of Dams, for all new and existing dam structures.

Policy SA 1-20: Geotechnical investigations shall be completed prior to approval of any 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 and/or geological hazards.

Policy SA 1-21: All projects subject to CEQA review shall address seismic safety issues and provide adequate mitigation for existing and potential hazards identified.

Actions

Action SA 1-F: The County shall rely upon the most current and comprehensive geological hazard mapping available in the evaluation of potential seismic and geologic hazards associated with proposed new development.

Action SA 1-H: Require a geotechnical analysis for construction in areas with potential geological hazards and require that recommendations from the geotechnical analysis are incorporated into the project's design and engineering.

Action SA 1-I: The County shall seek State and Federal financial assistance to fund seismic upgrades and safety measures for existing County buildings and structures.

Action SA 1-J: Annually review revisions to the California Building Standards Code (CBSC) and consider adoption of updates to the CBSC that include new or revised measures to avoid or reduce the potential for damage to structures and facilities caused by groundshaking and other geologic hazards.

Action SA 1-K: Update the County's development project application materials to require new development projects to submit a preliminary geotechnical investigation. The preliminary geotechnical investigation shall:

3.6 GEOLOGY, SOILS, AND MINERALS

- a. *Identify potential geologic issues, including potential hazards associated with unstable soils (soils with moderate to severe potential for erosion, shrink-swell, or expansiveness) or underlying geology, and potential hazards associated with steep slopes; and*
- b. *Identify appropriate mitigation measures to ensure the safety of future users of the project site. In areas where hillside slope is at or around 30 percent, the mitigation measures shall include the layout of proposed improvements including roadways and structures to allow for enough adjacent useable space to help ensure that all cut and fill slopes would be no steeper than "2" feet horizontal to "1" foot vertical. All slopes should also be properly keyed in accordance to the California Building Standards Code. Also, characteristics of cut/fill areas to be located on tops and sides of hills should be designed by a professional engineer. This condition implies that use of a soils engineering report during the design of the project grading plan would be necessary to help ensure the project's design is compatible with the engineering characteristics of underlying soils.*

Action SA 1-L: Update Section 9-2 of the Colusa County Code to require compliance with the County's grading review and permitting provisions for all projects of one or more acres.

ADDITIONAL MITIGATION MEASURES

None required.

Impact 3.6.2: Potential to expose people or structures to potential adverse effects involving ground instability or failure (less than significant)

Development allowed under the 2030 General Plan could result in the exposure of people and structures to conditions that have the potential for adverse effects associated with ground instability or failure. As described in the Existing Setting discussion, soils and geologic conditions in Colusa County have the potential for landslides, liquefaction, expansiveness, lateral spreading, subsidence, and unstable soils associated with soil properties and other factors.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the California Building Code, the County's General Plan, Zoning Ordinance, and other regulations, including the Land Grading and Leveling Ordinance. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. Future development and improvement projects would be required to have a specific geotechnical study prepared and incorporated into the improvement design, consistent with the requirements of the state and county codes. In addition to the requirements associated with the CBC and the County Code, the 2030 General Plan includes the several policies and actions related to land stability. Policy SA 1-14 requires new land development proposals to avoid unreasonable exposure to geologic hazards, including earthquake damage, subsidence, liquefaction and expansive soils. Policy SA 1-15 requires that all development and construction proposals be reviewed by the County to ensure conformance with applicable building standards. Policy SA 1-20 requires a geotechnical investigation to be completed prior to approval of any 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 and/or geological hazards. Policy SA 1-21 requires all projects subject to CEQA review to address seismic

safety issues and provide adequate mitigation for existing and potential hazards identified. Action SA 1-F, Action SA-1-G, Action SA 1-H, Action SA 1-J, Action SA 1-K, Action SA 1-L are actions that implement these policies.

The 2030 General Plan includes the above policies and actions to ensure that development, infrastructure, and other projects address potential ground failure and instability issues through compliance with applicable building standards, identification of potential landslide areas, preparation of geotechnical studies, and appropriate site analysis and engineering measures to mitigate any identified hazards, including landslides, lateral spreading, liquefaction, and other potential ground failures, to an acceptable level. With the implementation of the policies and actions in the 2030 General Plan, as well as applicable state and county codes, potential impacts as associated ground instability or failure would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy SA 1-14: Require new land development proposals to avoid unreasonable exposure to geologic hazards, including earthquake damage, subsidence, liquefaction and expansive soils.

Policy SA 1-15: All development and construction proposals shall be reviewed by the County to ensure conformance with applicable building standards.

Policy SA 1-20: Geotechnical investigations shall be completed prior to approval of any 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 and/or geological hazards.

Policy SA 1-21: All projects subject to CEQA review shall address seismic safety issues and provide adequate mitigation for existing and potential hazards identified.

Actions

Action SA 1-F: The County shall rely upon the most current and comprehensive geological hazard mapping available in the evaluation of potential seismic and geologic hazards associated with proposed new development.

Action SA-1-G: Maintain a map showing the general location of existing landslides for reference by development applicants. Note: The identification of the location of a landslide relative to a proposed development and the preparation of any geotechnical report shall be the responsibility of the development applicant.

Action SA 1-H: Require a geotechnical analysis for construction in areas with potential geological hazards and require that recommendations from the geotechnical analysis are incorporated into the project's design and engineering.

Action SA 1-J: Annually review revisions to the California Building Standards Code (CBSC) and consider adoption of updates to the CBSC that include new or revised measures to avoid or reduce the potential for damage to structures and facilities caused by groundshaking and other geologic hazards.

3.6 GEOLOGY, SOILS, AND MINERALS

Action SA 1-K: Update the County’s development project application materials to require new development projects to submit a preliminary geotechnical investigation. The preliminary geotechnical investigation shall:

- a. Identify potential geologic issues, including potential hazards associated with unstable soils (soils with moderate to severe potential for erosion, shrink-swell, or expansiveness) or underlying geology, and potential hazards associated with steep slopes; and*
- b. Identify appropriate mitigation measures to ensure the safety of future users of the project site. In areas where hillside slope is at or around 30 percent, the mitigation measure shall include the layout of proposed improvements including roadways and structures to allow for enough adjacent useable space to help ensure that all cut and fill slopes would be no steeper than “2” feet horizontal to “1” foot vertical. All slopes should also be properly keyed in accordance to the California Building Standards Code. Also, characteristics of cut/fill areas to be located on tops and sides of hills should be designed by a professional engineer. This condition implies that use of a soils engineering report during the design of the project grading plan would be necessary to help ensure the project’s design is compatible with the engineering characteristics of underlying soils.*

Action SA 1-L: Update Section 9-2 of the Colusa County Code to require compliance with the County’s grading review and permitting provisions for all projects of one or more acres.

ADDITIONAL MITIGATION MEASURES

None required.

Impact 3.6.3: Potential to result in substantial soil erosion or the loss of topsoil (less than significant)

The 2030 General Plan would allow development and improvement projects that would involve some land clearing, mass grading, and other ground-disturbing activities that could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of a substantial amount of nonrenewable topsoil and could adversely affect water quality in nearby surface waters.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the California Building Code, the County’s General Plan, Zoning Ordinance, and other regulations, including the Land Grading and Levelling Ordinance. In addition to compliance with County standards and policies, the Regional Water Quality Control Board will require a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each projects that disturbs an area of one acre or larger. The SWPPPs will include project specific best management measures that are designed to control drainage and erosion. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. The 2030 General Plan includes the following policies and actions related to soil conservation and erosion control.

Policy CON 1-27 encourages agricultural land owners to improve on-site storm water retention features and implement feasible Best Management Practices (BMPs) to reduce site runoff and

provide for natural removal of water pollutants. Policy SA 1-15 requires all development and construction proposals to be reviewed by the County to ensure conformance with applicable building standards. Policy SA 1-17 limits construction and grading on slopes in excess of 30 percent. Action CON 1-F, Action SA 1-J, Action SA 1-K, and Action SA 1-L are actions that implement these policies. With the implementation of the policies and actions in the 2030 General Plan, as well as applicable state and county requirements, potential impacts associated with erosion and loss of topsoil would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy CON 1-27: Encourage agricultural land owners to improve on-site storm water retention features and implement feasible Best Management Practices (BMPs) to reduce site runoff and provide for natural removal of water pollutants.

Policy SA 1-15: All development and construction proposals shall be reviewed by the County to ensure conformance with applicable building standards.

Policy SA 1-17: Limit construction and grading on slopes in excess of 30 percent.

Actions

Action CON 1-F: Continue to require implementation of the County's Grading Ordinance. Review projects to ensure that BMPs are implemented during construction and site grading activities as well as in project design to reduce pollutant runoff into water bodies.

Action SA 1-J: Annually review revisions to the California Building Standards Code (CBSC) and consider adoption of updates to the CBSC that include new or revised measures to avoid or reduce the potential for damage to structures and facilities caused by groundshaking and other geologic hazards.

Action SA 1-K: Update the County's development project application materials to require new development projects to submit a preliminary geotechnical investigation. The preliminary geotechnical investigation shall:

- a. Identify potential geologic issues, including potential hazards associated with unstable soils (soils with moderate to severe potential for erosion, shrink-swell, or expansiveness) or underlying geology, and potential hazards associated with steep slopes; and*
- b. Identify appropriate mitigation to ensure the safety of future users of the project site. In areas where hillsides slope are at or around 30 percent, the mitigation shall include the layout of proposed improvements including roadways and structures to allow for enough adjacent useable space to help ensure that all cut and fill slopes would be no steeper than "2" feet horizontal to "1" foot vertical. All slopes should also be properly keyed in accordance to the California Building Standards Code. Also, characteristics of cut/fill areas to be located on tops and sides of hills should be designed by a professional engineer. This condition implies that use of a soils engineering report during the design of the project*

3.6 GEOLOGY, SOILS, AND MINERALS

grading plan would be necessary to help ensure the project's design is compatible with the engineering characteristics of underlying soils.

Action SA 1-L: Update Section 9-2 of the Colusa County Code to require compliance with the County's grading review and permitting provisions for all projects of one or more acres.

ADDITIONAL MITIGATION MEASURES

None required.

Impact 3.6.4: Potential to have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water (less than significant)

While the majority of new development under the 2030 General Plan will occur in communities with public sewer service, the 2030 General Plan will allow development in rural areas where wastewater treatment would be provided by septic or other alternative wastewater systems. Some of the soil types present in Colusa County have permeability and percolation characteristics that result in moderate to severe limitations for septic systems and similar types of alternative wastewater treatment.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the California Building Code, the County's General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA. The 2030 General Plan includes policies and actions related to septic systems and leach fields. Policy PSF 1-20 prohibits the use of septic systems on parcels two acres or smaller, and specifically requires these parcels to connect to a municipal wastewater system. Policy PSF 1-27 would ensure future septic systems are designed and located to protect waterways and agricultural lands. Action LU 3-G, PSF 1-L and PSF 1-O, Action PSF 1-P, Action PSF 1-Q, and Action PSF 1-R are actions that implement these policies.

The 2030 General Plan policies and actions identified above would ensure that new septic systems and leach fields are located on soils that can support the system and that septic systems do not result in impacts to waterways. The 2030 General Plan includes specific actions to address septic systems, including an action to amend the County Code to create a new septic system permit process that includes site specific evaluation criteria and construction performance standards. With the implementation of the policies and actions in the 2030 General Plan, potential impacts associated with septic and alternative wastewater treatment systems would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONSPolicies

Excerpt from Policy LU 3-1: Require proposed urban and rural residential development to be consistent with the following:

Rural Residential

- *The soil is determined to be suitable for septic tank use by the Environmental Health Department*

Policy PSF 1-20: New residential development on parcels smaller than two acres shall be required to connect to a municipal wastewater system. The use of septic systems on residential parcels two acres and smaller shall be prohibited.

Policy PSF 1-27: Ensure future septic systems are designed and located to protect waterways and agricultural lands.

Actions

Action LU 3-G: Amend the Zoning Ordinance to include a hillside combining zone that addresses the minimum allowable lot size in the upland parts of the county based on limiting factors such as consider topography, geology, soils, vegetation, wildlife, water supply, recharge, and movement of groundwater, septic tank limitations, fire hazards, access, and circulation.

Action PSF 1-L: Amend the County Code to include septic and leach field setbacks from natural waterways. This setback should be a minimum 100 feet from perennial and intermittent streams, seasonal water bodies and natural bodies of standing water. Exceptions may be made if the project involves the repair of an existing system or the system is properly engineered and approved by the Public Health Director.

Action PSF 1-O: Monitor ongoing changes and updates to State regulations for septic systems developed by the State Regional Water Quality Control Board, as required by AB 885, and periodically update the County Code to reflect applicable changes in regulations.

Action PSF 1-P: Update the County Code to create a new septic system permit process that includes site specific evaluation criteria and construction performance standards. At the preliminary review stage, projects shall demonstrate to the satisfaction of the County Department of Environmental Health, feasibility to accommodate a septic system that meets all applicable water quality standards.

Action PSF 1-Q: Restrict the development of new septic systems in areas that are prone to flooding or that have a seasonal high water table and/or water seepage problems.

ADDITIONAL MITIGATION MEASURES

None required.

Impact 3.6.5: Result in the loss of availability of a locally important mineral resource or known mineral resource that would be of value to the region and the residents of the state (less than significant)

While there are no state-identified significant mineral deposits or Mineral Resource Zones in Colusa County, there are known mineral resource deposits which primarily occur in the western portion of the County. These deposits include aggregate, chromium, copper, mercury, and gold. The known mineral resource deposits are not generally located in areas designated for urban development, but rather are predominantly located in areas designated Agricultural-Upland, Resource Conservation, and Forest Lands. The 2030 General Plan includes two policies related to mineral resources. Policy CON 2-22 encourages the extraction and processing of sand and gravel to support economic vitality and ensure an adequate supply of aggregate resources. Policy CON 2-22 conserves mineral resources identified by the State to be of regional or statewide significance for mineral resource extraction. Implementation of the 2030 General Plan would result in **less than significant** impacts to mineral resources.

2030 GENERAL PLAN POLICIES AND ACTION

Policies

Policy CON 2-22: Encourage the extraction and processing of sand and gravel to support economic vitality and ensure an adequate supply of aggregate resources.

Policy CON 2-22: Conserve mineral resources identified by the State to be of regional or statewide significance for mineral resource extraction.

ADDITIONAL MITIGATION MEASURES

None required.

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This section discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from General Plan implementation. Following this discussion is an assessment of consistency of the General Plan with applicable state policies, plans and regulations.

This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, and impact analysis. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

The following discussion of greenhouse gases and climate change linkages, and the discussion of the effects of global climate change were derived from: *Scenarios of Climate Change in California, An Overview. California Climate Change Center (CCC) White Paper, February 2006 (CCC 2006).*

Governor Arnold Schwarzenegger's Executive Order S-3-05 of June 1, 2005, called for specific emission reductions and a periodic update on the state of climate change science and the emerging understanding of potential impacts on climate-sensitive sectors such as the state's water supply, public health, agriculture, coastal areas, and forestry. In response to this Executive Order, the California Energy Commission (Energy Commission) and the California Environmental Protection Agency (Cal/EPA) commissioned an assessment of the potential impacts of climate change on key state resources ("the Scenarios Project").

The Scenarios Project was conducted under the direction of the California Climate Change Center ("the Center"), which has engaged in a long-term, California-specific climate research program. The assessment builds on earlier work that came out of the Center and other previous studies. In particular, it extends the work of a recent study that compared the projected impact of climate change in California under differing emissions scenarios (Hayhoe et al. 2004). This assessment draws upon experts within and outside of the Center to produce a collection of separate research reports on the projected impacts of climate change under multiple scenarios across six different sectors: coasts, water resources, agriculture, public health, forestry, and electricity production and demand.

This report summarizes the findings from the individual research reports and compares them with the earlier findings from the Hayhoe et al. (2004) study. This summary report compares the impacts on key sectors under multiple future scenarios of temperature changes and links these impacts to GHG emission trajectories, assuming different climate sensitivities.

While climate change, and more specifically, human contributions towards climate change, remain controversial, the findings in the above-referenced report establish the basis for significant recent legislation in California to address and reduce the impacts of climate change.

3.7.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), ozone (O₃), water vapor, nitrous oxide (N₂O), and chlorofluorocarbons (CFCs).

Human-caused emissions of these GHGs, in excess of natural ambient concentrations, are responsible for enhancing the greenhouse effect. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (CCC 2006). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CCC 2006).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is the 12th to 16th largest emitter of CO₂ in the world and produced 492 million gross metric tons of carbon dioxide equivalents in 2004 (CCC 2006).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7 percent of total GHG emissions in the state (CCC 2006). This category was followed by the electric power sector (including both in-state and out-of-state sources) (22.2 percent) and the industrial sector (20.5 percent) (CCC 2006).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs is anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat (CCC 2006).

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. According to a California Energy Commission report, the snowpack portion of the supply could potentially decline by 70 to 90 percent by the end of the 21st century (CCC 2006). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and, according to the CEC report, it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (CCC 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (CCC 2006). As the existing climate throughout California changes over times, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (California Climate Change Center 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25 to 35 percent under the lower warming range, to 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced (CCC 2006).

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from

dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat (CCC 2006).

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages (CCC 2006).

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25 percent of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the ski season at lower elevations could be reduced by as much as 1 month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding (CCC 2006).

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70 to 90 percent. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities (CCC 2006).

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development will change, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth (CCC 2006).

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk (CCC 2006).

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates (CCC 2006).

Forests and Landscapes

Global warming is expected to intensify this threat by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, landscape, and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30 percent toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90 percent (CCC 2006).

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60 to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming (CCC 2006).

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats (CCC 2006).

3.7.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Federal Climate Change Policy

According to the EPA, “the United States government has established a comprehensive policy to address climate change” that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, “the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science.” The federal government’s goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including “ENERGY STAR”, “Climate Leaders”, and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO₂ per year. This publically available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California’s existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California’s Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the

regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Assembly Bill 32- Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_{2e} emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_{2e} under a business-as-usual scenario. (This is a reduction of 42 MMT CO_{2e}, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and

economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e),
- the Low-Carbon Fuel Standard (15.0 MMT CO₂e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO₂e).

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Climate Action Program at Caltrans

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO₂ from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97 (SB 97)

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

SB 375 requires the CARB to develop regional greenhouse gas emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. The 18 MPOs in California will prepare a "sustainable communities strategy" to reduce the amount of greenhouse gas emission in their respective regions and demonstrate the ability for the region to attain CARB's reduction targets. CARB would later determine if each region is on track to meet their reduction targets. In addition, cities would get extra time -- eight years instead of five -- to update housing plans required by the state. Colusa County is not within the jurisdiction of an MPO, and is not subject to the requirements of SB 375.

LOCAL

Colusa County Air Pollution Control District

The mission of the Colusa County Air Pollution Control District (APCD) is to protect the public health while balancing economic and air quality considerations.

The District is governed by a five member Board of Directors. All five Board members are County Supervisors. The Air Pollution Control Officer is appointed by the Board and serves as Executive Director of the District. The Board of Directors appoints five citizens to the District's Hearing Board, which considers appeals for rule variances and other similar matters. The Hearing Board is a quasi-judicial body.

The Board of Directors also appoints an Air District Advisory Committee to discuss and advise the Board and District staff on general air quality programs and issues.

As required by the state and federal Clean Air Act, the District is responsible for air monitoring, permitting, enforcement, long-range planning, regulatory development, education, and public information activities related to air quality. Local districts are the primary mechanism for air

quality management. Districts must implement rules and regulations and provide enforcement for the attainment and maintenance of the California and national ambient air quality standards.

The Colusa County APCD has not adopted any plans or regulations that address climate change or GHG reduction strategies.

3.7.3 IMPACTS AND MITIGATION MEASURES

GHG THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

Methodology

At the time of preparation of this Draft EIR, neither CARB nor the Colusa County APCD has formally adopted a recommended methodology for evaluating GHG emissions under CEQA.

The California Office of Planning and Research (OPR) recommends that lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with construction activities, stationary sources, vehicular traffic, and energy consumption: to determine whether the impacts have the potential to result in a significant project or cumulative environmental impact; and, where feasible mitigation is available, to mitigate any project or cumulative impact determined to be potentially significant. More recently, OPR prepared amendments to the State CEQA Guidelines, pursuant to SB 97 (Statutes of 2007) for adoption by the California Natural Resources Agency. The amendments added several provisions reinforcing the requirements to assess a project's GHG emissions as a contribution to the cumulative impact of climate change. The amendments went into effect on March 18, 2010.

Specifically, CEQA Guidelines Section 15064.4, as amended March 18, 2010, state:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Thresholds of Significance

As described previously, the State Legislature and the global scientific community have found that global climate change poses significant adverse effects to the environment of California and the entire world.

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project under consideration would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

AB 32 and S-3-05 target the reduction of statewide emissions. It should be made clear that AB 32 and S-3-05 do not specify that the emissions reductions should be achieved through uniform reduction by geographic location or by emission source characteristics. Colusa County has determined that the establishment of a numerical threshold of significance is not appropriate for the General Plan GHG analysis. Consistent with the guidance provided in CEQA Guidelines Section 15064.4(a)(2), Colusa County has prepared this EIR in a manner which includes a qualitative analysis and discussion of the General Plan's consistency with AB 32 and the associated guidance document prepared by the California Air Pollution Control Officers Association (CAPCOA). In June 2009 CAPCOA published the *Model Policies for Greenhouse Gases in General Plans*. This document includes recommended policy guidance and techniques that may be implemented by cities and counties during the preparation of general plan updates. The incorporation of the various policy recommendations included in this document into local general plans will assist the State of California in meeting the GHG reductions goals established by AB 32.

For the purposes of this EIR, the proposed 2030 General Plan would result in a significant impact to climate change and GHGs if:

- The General Plan is not consistent with the goals established by AB 32 and the policy guidance provided in the CAPCOA 2009 *Model Policies for Greenhouse Gases in General Plans*.

GHG IMPACTS AND MITIGATION MEASURES

Impact 3.7.1: General Plan Implementation Would Not Result in Conflicts with AB 32 or Conflict with the Policy Guidance Provided by CAPCOA. (less than significant)

Implementation of the 2030 General Plan would not directly result in the creation of GHG emissions. However, subsequent development allowed under the General Plan would result in new projects that would increase GHG emissions in Colusa County.

There are a variety of ways in which a general plan could contribute to climate change and result in the generation of GHGs. Sprawling land use patterns that place residences far from employment and retail centers can result in increased vehicle miles traveled (VMT), which increase GHG generation. The conversion of forest lands and open space areas into urbanized uses removes vegetation and trees that have positive carbon sequestration value. Imbalances between local jobs and housing can result in increased commute times and increased VMT associated with longer travel distances between home and work.

CAPCOA has identified a number of key opportunities related to each mandatory element of a general plan, as well as optional elements of a general plan, that may assist in a reduction GHG emissions associated with land use planning decisions and general plan implementation. These key policy recommendations are summarized below, and are followed by a list of policies and action items contained in the 2030 Colusa County General Plan that support or implement these recommendations. It is important to note that the CAPCOA recommendations are not mandatory, and were developed to be general enough to apply to different local agencies throughout California, therefore, not all of the recommendations would necessarily apply to, or be appropriate for, Colusa County.

CAPCOA General Plan Recommendations

- Foster land use intensity near, along with connectivity to, retail and employment centers and services to reduce vehicle miles traveled and increase the efficiency of delivery of services through adoption and implementation of smart growth principles and policies;
- Improve the local jobs/housing balance to reduce vehicle miles traveled;
- Zone for appropriate mixed use development to encourage walking and bicycling for short trips, rather than vehicles;
- Link residential and commercial development to transit facilities;
- Reduce parking requirements to facilitate higher density development that fosters access by walking, biking and public transit;
- Identify potential sites for renewable energy facilities and transmission lines;
- Promote recycling to reduce waste and energy consumption;

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- Identify appropriate sites for waste recovery facilities to minimize escape of GHGs;
- Conserve natural lands for carbon sequestration;
- Identify lands suitable for wind power generation;
- Conserve water to promote energy efficiency;
- Promote recycling and waste recovery;
- Promote urban forestry and reforestation as feasible;
- Identify and prioritize infrastructure improvements needed to support increased use of alternatives to private vehicle travel, including transit, bicycle, and pedestrian modes;
- Coordinate with adjacent municipalities, transit providers, and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation;
- Establish higher priorities for transit funding relative to street and road construction and maintenance;
- Incorporate “Complete Streets” policies that foster equal access by all users, including pedestrians and bicyclists;
- Promote linkages between development locations and transportation facilities;
- Preserve transportation corridors for renewable energy transmission and for new transit lines;
- Identify appropriate locations for intermodal transportation stations;
- Identify opportunities, in cooperation with transit providers, to provide financing for transit operations and maintenance;
- Identify existing and potential future urban growth boundaries to limit sprawling development patterns and foster a more compact urban form;
- Conserve natural lands for carbon sequestration;
- Promote trail systems to facilitate bicycle and pedestrian trips in lieu of vehicle travel;
- Identify sites for higher density housing closer to employment centers, retail and services, and transit facilities;
- Identify sites for affordable housing for workers close to employment centers;
- Establish or support programs to assist in the energy-efficient retrofitting of older affordable housing units;
- Balance additional upfront costs for energy efficiency and affordable housing economic considerations by providing or supporting programs to finance energy-efficient housing;
- Energy-efficiency requirements for residential, commercial, and industrial construction under local jurisdiction that exceed current standards;
- Facilitate residential and commercial renewable energy facilities (solar array installations, individual wind energy generators, etc.);
- Promote cogeneration facilities for combined heating and electricity;
- Facilitate renewable energy facilities and transmission line siting;
- Establish energy-efficiency standards for public facilities;
- Incorporate urban design principles that promote higher residential densities in attractive forms with easily accessible parks and recreation opportunities nearby;
- Use urban design standards to facilitate clustered, higher-density, mixed use communities with greater potential for transit ridership, alternatives to vehicle travel, and shorter trips;

- Establish policies and design principles to incorporate inviting public spaces in high density, mixed use communities;
- Incorporate “Complete Streets” policies that foster equal access by all users, including pedestrians and bicyclists;
- Promote water-efficient and energy-efficient housing and commercial areas;
- Incorporate water conservation measures for municipal operations and throughout the community to reduce GHG emissions from pumping and water delivery;
- Adopt policies and standards to facilitate water recycling for use on landscaping, agricultural operations, and other applications where potable water is not required, to reduce pumping-related GHG emissions;
- Establishment of minimum parcel sizes for agricultural lands outside of Agricultural Preserves and restrictions on non-agriculture related development and uses on agricultural parcels to enhance the viability of local agriculture and prevent additional sprawl development that increases dependence on and emissions from private vehicles;
- Development of policies and incentives (e.g., carbon credit programs) to promote voluntary preservation of farmland for carbon sink purposes;
- Adoption of policies and programs that facilitate local farmers markets and farmer co-ops that allow residents to purchase local farm goods and reduce emissions from transportation of agricultural products; and
- Support for agricultural industries that reduce the need to move agricultural products long distances for processing or packaging.

The CAPCOA recommendations listed above are grounded in the principles of developing compact communities with a mix of land uses, providing a range of alternative transportation opportunities, conserving significant areas of open space lands, including agricultural lands, conserving water resources, and reducing energy consumption.

The 2030 Colusa County General Plan was developed with extensive input from the community. The core themes expressed by the community for inclusion in the General Plan closely mirror the policy priorities established by CAPCOA and AB 32.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policy LU 1-10: Concentrate future development within or adjacent to the communities that provide urban services, including Arbuckle, College City, Colusa, Grimes, Maxwell, Princeton, Stonyford, and Williams, with an emphasis on placing large-scale and more intense development projects in these population centers as opposed to other rural and remote areas that lack public services and amenities or are not connected to an existing community.

Policy LU 1-11: Make land use decisions that promote compact communities, generally filling in gaps of vacant land between already developed areas before growing outward.

Policy LU 1-12: Prohibit freestanding subdivisions and large-scale commercial developments that are isolated from existing communities, are outside of city and utility district spheres of influence, and/or lack access to urban-level services.

3.7 GREENHOUSE GASES AND CLIMATE CHANGE

Policy LU 1-14: Promote infill development by encouraging higher densities and more intense uses on vacant and underdeveloped lots within existing communities that are compatible with the physical and cultural character of the particular community.

Policy LU 1-15: To conserve open space and agricultural lands outside of planned urban areas and provide the efficient use of public services, make land use decisions that reinforce the cultural and economic sustainability of unincorporated community centers of the County, including Arbuckle, College City, Grimes, Maxwell, Princeton, and Stonyford.

Policy LU 1-16: Use the Urban Reserve Area land use designation to identify lands for future urban use and to delineate the maximum extent of urban growth that can occur around established communities.

Policy LU 2-1: Agriculture, upland, and resource conservation are the primary land use designations to be used outside of the communities and any adjacent Urban Reserve Areas.

Policy LU 2-2: Ensure that future development and land use decisions protect the integrity of agriculture and do not in any way create a hardship for the county's farmers.

Policy LU 2-3: Ensure that lands presently in agricultural uses that do not adjoin existing communities continue to be designated for agricultural uses and are protected through the county's land use regulations.

Policy LU 2-5: Require lands designated Agriculture General, Agriculture Transition or Agriculture Upland to remain in agricultural use, including businesses or uses that directly support County agricultural activities, for at least the duration of the planning period.

Policy LU 2-6: Discourage the division of land in agricultural areas if the division is not for the purpose of farming or other agricultural activities or if the division precludes the future opportunity to farm the land.

Policy LU 3-2: Encourage clustering of housing and planned unit developments within communities and areas designated for residential development so that larger areas of open space may be permanently preserved.

Policy LU 3-11: Require development proposals for lands designated Urban Reserve Area to request a General Plan Amendment to the proposed use. The General Plan Amendment shall require the following findings:

- The majority of adjacent designated urban residential and commercial lands has been built out or is planned for build out,*
- Urban services (water, wastewater, storm drainage, utilities, and roads) have been extended or planned to be extended to the lands proposed for a General Plan Amendment,*
- Adequate flood control measures are in place,*
- The amendment would not create an island of urban uses in a rural, agricultural, or open space area,*
- The amendment would not result in leapfrog development patterns, and*

- *A master plan or specific plan has been prepared for the lands proposed for a change in land use designation.*

Policy LU 3-16: Encourage infill development of vacant lots within existing commercial districts and the core downtown/business areas before new shopping areas are built on the periphery of communities.

Policy LU 3-21: Locate commercial lands within or contiguous to developed areas convenient to public services, such as near the boundaries of cities and communities; in locations served by the publicly-maintained circulation network; and within or proximate to planned growth areas.

Policy LU 3-25: Concentrate future industrial development in areas with direct access to rail, interstate, air, or state highway transportation facilities.

Policy LU 3-26: To the extent possible, future industrial development should occur within master-planned industrial parks adjoining existing communities. These developments should be designed and landscaped so that they are compatible and integrated with their surroundings and do not reduce the visual qualities of the adjoining communities.

Policy LU 3-37: Require a minimum parcel size of 160 acres in upland areas, including Resource Conservation and Agriculture-Upland designations, where appropriate due to limited access, steep slopes, drainage features, and other factors that limit the developability of the site and identify the site as appropriate for conservation in larger parcels.

Policy LU 5-1: Encourage new development projects to incorporate pedestrian-scale design features that encourage walking, bicycling and the use of alternative transportation modes.

Policy LU 5-2: Support local farmer's markets, local food co-ops, and other programs that provide locals access to fresh, healthy, locally grown food.

Policy LU 5-3: Support efforts to provide affordable health care, mental health services and community support services to all County residents.

Policy LU 5-4: Encourage new development projects to incorporate public safety measures into project designs. Such measures may include, but are not limited to: crosswalks, exterior lighting, windows oriented towards the street, and other measures contained in the Crime Prevention through Environmental Design (CPTED) approach.

Policy LU 5-5: Improve community cohesiveness through the encouragement and promotion of community events, including parades, festivals, trade shows, rodeos and other events that bring people together to socialize in a community-based setting.

Policy AG 1-2: Lands designated for agricultural uses shall remain designated for agriculture and not be rezoned or redesignated to an urban use unless the following criteria are met:

- a. The lot(s) for which conversion is requested is adjacent to agriculture or agricultural support uses (e.g. receiving plants, hulling plants, warehousing,*

trucking, distribution, and other related activities.) on no more than two sides of the lot(s) or less than 50 percent of the perimeter of the lot(s) proposed for conversion.

- b. The conversion will not be detrimental to existing agricultural operations.*
- c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of a designated urban area.*
- d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of the conversion lands from nuisances associated with typical agricultural practices.*
- e. No feasible alternative location (e.g., non-agricultural lands or less productive agricultural lands) exists.*
- f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding agricultural lands.*

Policy AG 1-4: Maintain agricultural parcel sizes that are large enough to sustain agricultural activities. The following minimum lot sizes shall apply to agricultural lands: Agricultural General- 40 acres, Agricultural Upland- 80 acres, and Agricultural Transition - 10 acres.

Policy AG 1-5: Encourage lot mergers to meet minimum parcel size standards.

Policy AG 1-6: Residential development on agricultural lands shall be limited to housing for family members and agricultural employee housing.

Policy AG 1-7: Work with the Local Agency Formation Commission (LAFCO) on issues of mutual concern including the conservation of agricultural land through consistent use of LAFCO policies, particularly those related to conversion of agricultural lands and establishment of adequate buffers between agricultural and non-agricultural uses, and the designation of reasonable and logical Sphere of Influence (SOI) boundaries for cities and service districts.

Policy AG 1-8: Protect agricultural lands from urban encroachment by limiting the extension of urban service facilities and infrastructure, particularly public water and sewer.

Policy AG 1-9: Encourage the conservation of agricultural lands using available programs that provide benefit to the County and/or farmers.

Policy AG 1-10: Maintain clearly designated locations for future growth around existing communities through application of the Urban Reserve Area (URA).

Policy AG 2-1: Agricultural-related industrial support operations shall be permitted on agricultural lands. Such uses may include, but are not limited to, processing, assembly, distribution and

warehousing of agricultural materials and commodities and alternative energy systems that provide energy for on-site uses.

Policy AG 2-5: Encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms.

Policy AG 2-13: Encourage the reuse of treated wastewater for agricultural purposes.

Policy AG 2-15: Promote best management practices in agricultural operations (including animal operations) to reduce emissions, conserve energy and water, and utilize alternative energy sources.

Policy CIRC 1-3: Address the concept of “complete” streets, which requires more complete consideration of all users of the street, in new development and roadway improvement projects.

Policy CIRC 1-20: Ensure that residents have convenient transit service to employment centers, County service centers, other government centers, and regional destinations (i.e., Sacramento International Airport), as funding allows.

Policy CIRC 1-29: Create a complete bikeway and sidewalk system within each community, including the completion of existing systems and provide connections to the regional system. Create walkways and bikeways that connect existing paths where feasible, and that connect to downtown/community core areas, schools, grocery stores, parks, and other community features.

Policy CIRC 1-31: Protect abandoned rail corridors for re-use as trails and other forms of alternative transportation.

Policy CIRC 1-32: Support development of facilities that link bicyclists and pedestrians with other modes of transportation.

Policy CIRC 1-33: Require residential development at urban densities (3.5 units per gross acre or greater) to include provisions for bicycle and pedestrian travel. Where possible, these bicycle and pedestrian routes should be integrated with trails serving the rest of the community.

Policy CC 1-9: Define community edges and boundaries through the use of the Agriculture Transition (AT) and Urban Reserve Area (URA) land use designations.

Policy CC 1-10: Encourage infill development and the appropriate redevelopment of vacant and underutilized properties within existing unincorporated communities and prioritize infill projects over development on land at the planned community edge.

Policy CC 1-11: Through application of zoning districts and development standards, encourage the development, of higher density housing, multi-story buildings, and mixed-use development in the downtown areas of the unincorporated communities.

Policy CC 1-12: Encourage mixed use development in commercial areas in order to create ancillary residential opportunities, particularly in the upper floors of multi-story buildings.

Policy CC 2-5: Encourage new development proposals to include a balanced mix of jobs and housing.

Policy CC 2-7: Increase pedestrian and bicycle connectivity between residential areas and the downtown area.

Policy CC 2-8: Vacant and underdeveloped lands within the Arbuckle Public Utility District Service Area should be developed before additional undeveloped lands are annexed into the PUD's Service Area.

Policy CC 2-9: Previously approved, yet still undeveloped, residential subdivisions should be developed before significant new residential development is approved.

Policy CC 2-10: Encourage the clustering of homes and business to protect open space, trees, creeks and other natural resources.

Policy CC 2-11: Encourage mixed use development in the downtown area.

Policy CC 2-14: Reserve locations for future rail or transit stations to promote public transit connectivity to other communities.

Policy CON 1-1: Maintain ample areas of land designated Resource Conservation (RC).

Policy CON 1-2: Use conservation and open space easements, tax incentives, and other tools to:

- a. Protect, restore, and enhance the County's significant natural resources.*
- b. Reduce premature conversion of resource lands around community areas.*
- c. Provide linkages between natural resource areas.*

Policy CON 1-32: Demonstrate leadership in water conservation by including water-efficient plumbing and landscaping at all new County facilities, and by reducing the County's own water use to the extent possible.

Policy CON 1-33: Require new development and expansion of existing uses to incorporate best management practices for water use and include water conservation measures.

Policy CON 1-34: Encourage the use of water conservation measures for agriculture and in existing residences and businesses.

Policy CON 1-35: Encourage the use of water conservation measures, including low flow plumbing that exceeds state requirements; reclaimed wastewater for non-potable uses; dual plumbing that allows grey water from showers, sinks, and washers to be reused for landscape irrigation in new developments; and native and drought-tolerant landscaping.

Policy CON 1-37: Conserve and maintain forest resources so that they may be enjoyed by a wide range of users including campers, hikers, hunters, OHV users, and others.

Policy CON 1-38: Encourage sustainable forest management and timber harvesting activities (e.g., reforestation, timber stand improvement, stream corridor and water quality protection) that improve forest health, reduce fire fuel loads, and promote economic activity.

Policy CON 1-39: Discourage new development in heavily wooded forest areas.

Policy CON 2-1: Encourage and facilitate the use of on-site alternative energy systems to support industrial operations within the County.

Policy CON 2-2: Encourage the development of large-scale commercial energy projects that utilize renewable sources such as solar, biomass, and agricultural byproducts.

Policy CON 2-3: Allow commercial alternative energy facilities, including solar and biomass in the Agriculture General, Agriculture Upland, Industrial, and Resource Conservation land use designations with a Conditional Use Permit.

Policy CON 2-4: Allow alternative energy production infrastructure (such as solar panel arrays) that limits energy generation to the amount necessary to support on-site uses in all land use designations as a principally permitted use.

Policy CON 2-5: Encourage the use of sustainable design and green building practices in new development, infrastructure, large-scale planning, and rehabilitation projects.

Policy CON 2-6: Encourage new residential subdivisions and apartments to provide EnergyStar appliances in all dwelling units.

Policy CON 2-7: Require new residential subdivisions to offer a green or sustainable building package and options to buyers, which may include solar/photovoltaic roof or other alternative energy system, tankless water heater, energy efficient lighting, low flow faucets and showerheads, sustainable building materials, and/or EnergyStar appliances.

Policy CON 2-8: Encourage residents and property owners to retrofit existing residences and businesses to maximize energy efficiency.

Policy CON 2-9: Support farmers and landowners in their efforts to maximize the efficiency of agricultural practices and operations, including carbon efficient farming methods (e.g. methane capture systems, no-till farming, crop rotation, cover cropping); installation of renewable energy technologies; protection of grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and development of energy-efficient structures.

Policy CON 2-10: Support education programs that promote energy conservation, energy efficiency, and solid waste reduction, reuse, and recycling opportunities for County operations, residents, and businesses.

Policy CON 2-11: Manage timberlands and forest resources for their value both in timber production and offsetting greenhouse gas emissions through carbon sequestration.

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Policy CON 2-12: Require new development with significant paved surfaces, such as parking lots and plazas, to provide adequate shading.

Policy CON 2-13: Encourage LEED certification or equivalent for all public and private development, where feasible, and strongly encourage LEED Neighborhood Design (ND) certification or equivalent for other applicable projects, particularly within large-scale developments and Specific Plan areas.

Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts.

Policy CON 2-21: Encourage public transit, ridesharing and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles, and walking. Minimize single passenger motor vehicle use.

Policy OSR 1-2: Support regional and local natural resource preservation plans of public agencies that retain and protect open space within the County, including: the Mendocino National Forest Plan, the Colusa National Wildlife Refuge Complex, the Delevan National Wildlife Refuge, the Sacramento National Wildlife Refuge, the Willow Creek-Lurline Management Area and the North Central Valley Wildlife Management Area.

Policy OSR 1-24: Retain areas of permanent open space, including agricultural uses, between existing communities.

Policy OSR 1-25: Ensure that open space buffers such as greenbelts, drainage features, parks, or other improved and maintained features are provided by new development projects, where appropriate, between new urban development and sensitive open space uses, such as agriculture and wildlife habitat. Buffers shall be adequately sized to reduce potential land use conflicts between adjacent uses.

Actions

Action CC 1-A: Identify and provide incentives for infill development over development on the fringe of a community.

Action CC 1-B: Maintain an inventory and map of vacant and underutilized parcels within the downtown areas of the unincorporated communities, in conjunction with the site inventory efforts associated with Action ED 1-B and Housing Element Program 2-2.

Action CON 2-A: Amend the Zoning Ordinance to streamline permitting and provide clear development standards for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels.

Action CON 2-B: Amend the Zoning Ordinance to encourage energy-efficiency in new development and renovations, including the use of EnergyStar appliances in all new

subdivisions and green/sustainable building options as identified in Policies CON 2-5 through 2-7.

Action CON 2-C: Pursue grants to address existing energy inefficiencies in County facilities.

Action CON 2-D: Institute County purchasing policies that require purchase of energy-efficient products, products that contain recycled materials, and products that reduce waste generated when feasible.

Action CIRC 1-I: Develop and adopt a Bicycle Master Plan that provides for and encourages the development of an integrated system of bikeway facilities. These facilities would provide for safe and convenient travel for bicyclists and access to recreational bicycling opportunities throughout the County.

Action CIRC 1-G: Support regional transit planning efforts to develop and implement intra-regional transit service.

Action CIRC 1-H: As part of the development review process, ensure that development and planning projects accommodate transit facilities (bus stops, sheltered bus stops, turnarounds, etc.) where appropriate and that development contributes its fair share to transit facilities and services.

Action AG 2-F: Coordinate with irrigation districts to identify cost-effective and feasible Best Management Practices for the application and use of water resources that address the range of agricultural activities in Colusa County. Work with entities such as the irrigation districts, Agricultural Commissioner, and UC Extension Office to distribute Best Management Practices information to agricultural operations in the County.

Action AG 2-G: Collaborate with water suppliers and wastewater treatment plant operators to increase the availability of treated or recycled water for agricultural purposes.

Action AG 2-A: Revise the Zoning Ordinance to allow agricultural support facilities as a principal permitted use on lands designated for agricultural use. The revision to the zoning ordinance shall establish definitions and standards in the Zoning Ordinance that differentiate between facilities that support agricultural uses, such as those directly necessary for processing, packaging, distribution, and on-site energy production, and those facilities that are industrial or commercial in nature and do not directly support agricultural activities and are not appropriate for development, without a Conditional Use Permit, in an agricultural zoning classification.

Action AG 2-D: Revise the Zoning Ordinance to define alternative energy and to develop performance standards for energy-generating and resource extraction uses on agricultural lands.

Action LU 3-A: Revise the Zoning Ordinance to create a zoning district (Mixed Use) that is compatible with the Mixed Use land use designation. The zoning district shall:

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accommodate the range of land uses allowed in the Mixed Use designation; establish human-scale and pedestrian-oriented standards, including parking, building heights, setbacks, and connectivity; require each project to include a mix of commercial, public facilities, light industrial, and/or residential components. Residential uses shall not exceed the lesser of 40 percent of total land area or developed square footage in a mixed-use development.

The extensive list of policies and action items provided above demonstrate Colusa County's commitment to reducing GHG and climate change impacts through General Plan implementation to the greatest degree feasible. The County has taken a comprehensive approach to climate change through development of the 2030 General Plan.

The 2030 General Plan Land Use Map was developed to maximize the preservation of agricultural and open space lands, and the concentration of new urban development around and within existing established communities is the cornerstone of the Land Use Element. The General Plan includes numerous policies that promote and encourage infill development, increased residential densities within existing communities, and permanent preservation of open space and agricultural lands. The Land Use Element includes two new land use designations that will further assist in the preservation of open space lands and the concentration of new development in and around existing developed areas. The Mixed Use land use designation provides for opportunities for increased development densities and a mix of land uses within a single parcel that can place housing in close proximity to retail and employment uses. The Urban Reserve Area land use designation provides for future areas of urban development adjacent to existing communities. The development of urban uses on the Urban Reserve Area parcels cannot occur until urban growth from the community center has reached the Urban Reserve Area, which avoids leapfrog development and results in more compact and cohesive urban areas.

The Agriculture Element includes policies and actions that facilitate the development of agricultural support uses, such as canning and processing, on agricultural lands, which reduces the need to ship products long distances for processing, and creates additional in-County employment opportunities. The Agricultural Element also facilitates the approval and development of on-site alternative energy production to support agriculture and processing activities. Policies promote the development of on-site solar systems, which can reduce the demand for fossil fuel based energy.

The Circulation Element includes policies that require and promote the development of "complete streets", which provide opportunities for multimodal transportation and reduced VMT. The Circulation Element also promotes the development and expansion of several forms of alternative transit, including bicycle transportation, rail, bus routes, and pedestrian connectivity.

The Conservation Element includes several policies that require water and energy conservation measures in new and existing development, and promotes the use of green building practices and sustainable farming practices.

The Open Space Element includes policies and actions that require the preservation of open space lands and the maintenance of open space buffers between urbanized areas.

All of the policies and actions identified above would encourage the development of compact urban communities, while preserving the agricultural and open space resources of the County. The County's comprehensive approach to this issue in the 2030 General Plan would result in increased local employment opportunities, increased opportunities for the local production of clean energy, increased transportation and transit options, and the incorporation of conservation and energy efficiency into new development.

Colusa County has developed a General Plan that would result in the significant conservation of open space areas, including agricultural lands, natural wildlife preserves, forest lands, wetlands, woodlands, and grasslands. These open space areas provide positive beneficial impacts related to climate change by increasing areas of natural carbon sequestration. Additionally, as described above, the land use pattern included in the General Plan Land Use Map promotes and requires compact urban development, which further protects open space and natural resource areas, while reducing increases in vehicle miles traveled and the consumption of energy and other natural resources needed for urban development.

The proposed 2030 General Plan is consistent with the policy guidance provided by CAPCOA, and would assist the state in meeting the GHG reduction goals established by AB 32. Therefore, this is a **less than significant** impact.

ADDITIONAL MITIGATION MEASURES

None required.

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Hazards include man-made or natural materials or man-made or natural conditions that may pose a threat to human health, life, property, or the environment. Hazardous materials and waste present health hazards for humans and the environment. These health hazards can result during the manufacture, transportation, use, or disposal of such materials if not handled properly. Hazards to humans can also exist from natural or human induced wildfire and air traffic accidents.

This section provides a background discussion of the hazardous materials and waste, fire hazards, and hazards from air traffic found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. One comment regarding hazards was received from the California Emergency Management Agency (Cal EMA) during the Notice of Preparation scoping period for the EIR. Cal EMA indicated that the County should examine the sections of state planning law that involve environmental hazards faced in the County that should be addressed in the General Plan. The letter included attachments related to General Plan requirements for addressing hazards.

3.8.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS AND WASTE

Hazardous Materials

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating irreversible illness; or (2) pose a substantial present or potential hazard to human health and safety, or the environment when improperly treated, stored, transported, or disposed of. Hazardous materials, including hazardous chemicals, are mainly present because of industries involving chemical byproducts from manufacturing, petrochemicals, and hazardous building materials. There are also naturally occurring hazardous materials in Colusa County such as asbestos and heavy metals. Chapter 3.6, Geology, Soils, and Minerals, discusses the potential for naturally occurring asbestos (NOA) in Colusa County.

Hazardous Waste

Hazardous waste is the subset of hazardous materials that has been abandoned, discarded, or recycled and is not properly contained, including contaminated soil or groundwater with concentrations of chemicals, infectious agents, or toxic elements sufficiently high to increase human mortality or to destroy the ecological environment. If a hazardous material is spilled and cannot be effectively picked up and used as a product, it is considered to be hazardous waste. If a hazardous material site is unused, and it is obvious there is no realistic intent to use the material, it is also considered to be a hazardous waste. Examples of hazardous materials include flammable and combustible materials, corrosives, explosives, oxidizers, poisons, materials that react violently with water, radioactive materials, and chemicals.

Transportation of Hazardous Materials

The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery, or the loading of such materials (California Vehicle Code §§ 31602(b), 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Transportation of hazardous materials is restricted to these routes except in cases where additional travel is required from that route to deliver or receive hazardous materials to and from users.

Databases

There is a broad list of federal and state database that provide information for sites with varying potential for risk from the possible existence of hazardous materials. There are numerous redundancies among these various database listings. Below is a brief summary of each.

National Priorities List. The National Priorities List (NPL) of Superfund Sites is the Environmental Protection Agency (EPA) database of more than 1,200 sites designated for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas.

RCRIS System. The Resource Conservation and Recovery Information System (RCRIS) is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment.

CERCLIS Data. Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) is an EPA database that contains information on potential hazardous waste sites that have been reported to EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of CERCLA. CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.

CORRACTS. Corrective Action Report (CORRACTS) is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity.

RAATS System. RCRA Administrative Action Tracking System (RAATS) is an EPA database that contains records based on enforcement actions issued under RCRA pertaining to major violators, and includes administrative and civil actions brought by EPA.

PADS System. PCB Activity Database System (PADS) is an EPA database that identifies generators, transporters, commercial storers, and/or brokers and disposers of polychlorinated biphenyls (PCBs) who are required to notify EPA of such activities.

CHMIRS Data. The California Hazardous Material Incident Report System (CHMIRS) contains information on reported hazardous materials incidents (i.e., accidental releases or spills). The source of this information is the California Office of Emergency Services.

ERNS Sites. The Emergency Response Notification System (ERNS) records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

Cortese Database. The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (CAL-EPA).

LUST Reports. The Leaking Underground Storage Tank (LUST) Incident Reports contain an inventory of reported leaking underground storage tank incidents. This information comes from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

UST Database. The Underground Storage Tank (UST) database lists registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The UST information comes from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

HIST UST Sites. The Hazardous Substance Storage Container Database is a historical listing of UST sites. The data source is the State Water Resources Control Board.

CA FID Information. The Facility Inventory Database (CA FID) lists active and inactive underground storage tank locations. This database is maintained by the State Water Resources Control Board.

HAZNET Database. The Hazardous Waste Information System (HAZNET) includes data extracted from the copies of hazardous waste manifests each year by the State Department of Toxic Substances Control.

FINDS Data. The Facility Index System (FINDS) contains both facility information and "pointers" to other sources of information that contain more detail (e.g., RCRA Info, Permit Compliance System [PCS], Aerometric Information Retrieval System [AIRS]). The source of this information is the U.S. EPA.

FTTS Database. The Federal Toxics Tracking System (FTTS) tracks administrative cases and pesticide enforcement actions/compliance activities related to the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA), Toxic Substances Control Act (TSCA), and Emergency Planning and Community Right-to-Know Act (EPCRA). The source of this data is the Environmental Protection Agency (EPA) Office of Prevention, Pesticides, and Toxic Substances.

CA SLIC Database. The statewide Spills, Leaks, Investigations, and Cleanups (CA SLIC) database includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites. The data source is the State Water Resources Control Board.

Notify 65 Records. Proposition 65 Notification Records (Notify 65) contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The State Water Resources Control Board maintains this database.

EMI Data. Emissions Inventory Data (EMI) is comprised of toxics and criteria pollutant emissions data collected by the state Air Resources Board and local pollution agencies.

Manufactured Gas Plant Database. This database includes records of coal gas plants (manufactured gas plants), which were in operation in the U.S. until the 1950s. Due to common past practices, the potential for on-site hazardous by-products (such as coal tar, sludge, oils, and chemical compounds) remains on such sites, which could result in soil or groundwater contamination. These records are maintained by EDR, Inc., as part of its proprietary database.

SWEEPS Records. The Statewide Environmental Evaluation and Planning System (SWEEPS) UST list, which is no longer maintained or updated, was under the purview of the State Water Resources Control Board. Other agencies (e.g., as identified above) now maintain UST records.

Hazardous Sites

The EPA Toxic Release Inventory (TRI) identifies the following *On-site and Off-site Reported Disposed of or Otherwise Released (in pounds) for facilities in All Industries for All Chemicals Colusa County*:

TABLE 3.8-1: EPA TOXIC RELEASE INVENTORY REPORTS

Chemical	On-site	Off-site	On & Off-site
Copper Compounds	--	--	--
Styrene	105200	--	105200
<i>Total</i>	<i>105200</i>	--	<i>105200</i>

The CA Department of Toxic Substances Control (DTSC) maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. The following active sites are documented within the Colusa County Planning Area:

TABLE 3.8-2: DTSC ENVIROSTOR DATA MANAGEMENT SYSTEM

Envirostor	Site/Facility	Type	Status	City
6070014	Colusa County Fair	Voluntary	Refer: RWQCB	Colusa
6490001	PG&E MGP	State Response	Active	Colusa
6070008	Thayer Aviation	Voluntary	Action Required	Grimes

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the CA Integrated Waste Management Board (CIWMB). The SWIS data, which are updated

three times per week, identify active, planned and closed sites. The following facilities and/or sites are identified within the Planning Area:

Number	Name	Activity	Regulatory	Status
06-AA-0002	Stonyford Disposal Site	Solid Waste Landfill	Permitted	Active
06-AA-0003	Maxwell Transfer Station	Large Volume Transfer/Proc Facility	Permitted	Active
06-AA-0024	Premier Mushrooms	Composting Operation (Ag)	Notification	Active

Number	Name	Activity	Regulatory	Status
06-AA-0009	Colusa Industrial Properties	Land Application	Proposed	Planned

Number	Name	Activity	Regulatory	Status
06-AA-0001	Evans Road Landfill	Solid Waste Disposal Site	Permitted	Closed
06-AA-0021	Caltrans/City Colusa DS	Solid Waste Disposal Site	Pre-regulations	Closed
06-CR-0001	Old Williams Dump	Solid Waste Disposal Site	Unpermitted	Closed
06-CR-0003	Maxwell Landfill	Solid Waste Disposal Site	Permitted	Closed
06-CR-0004	Lurline Dump	Solid Waste Disposal Site	Unpermitted	Closed
06-CR-0005	MNF 41-1 Fouts Spgs	Solid Waste Disposal Site	Unpermitted	Closed
06-CR-0006	MNF 41-2 Upper Trough	Solid Waste Disposal Site	Unpermitted	Closed
06-CR-0007	MNF 41-3 Lower Trough	Solid Waste Disposal Site	Pre-regulations	Closed
06-CR-0008	MNF 42-1 Stonyford	Solid Waste Disposal Site	Pre-regulations	Closed
06-CR-0009	Princeton Dump	Solid Waste Disposal Site	Pre-regulations	Closed
06-CR-0010	Grimes Dump	Solid Waste Disposal Site	Pre-regulations	Closed
06-CR-0011	Arbuckle Dump	Solid Waste Disposal Site	Pre-regulations	Closed
06-CR-0013	Charter Dump South	Solid Waste Disposal Site	Unpermitted	Closed

In addition, the Cortina Band of Wintun Indians has leased approximately 200 acres of land to a waste management corporation, which would operate a proposed solid waste landfill within the Rancheria. The corporation, Cortina Integrated Waste Management, Inc. (CIWM) would construct and operate the landfill. Initially, the proposed facility would operate at ±300 tons per day. The tonnage would be increased in phases, to a maximum disposal of 1,500 tons per day. The term of

the proposed lease is 25-years, which would include a 25-year renewal opportunity. The U.S. Department of the Interior, Bureau of Indian Affairs, the trustees for Indian land, issued a final approval of the lease in January 2007.

WILDFIRE HAZARDS

Wildfires are a potential hazard to development and land uses located in the foothill and mountain areas of the County. The severity of wildfire problems depends on a combination of vegetation, climate, slope and people. The grassland, chaparral, woodland, and forest vegetation found in areas of Colusa County, coupled with hot, dry summers, present extreme fire hazards during critical fire periods for approximately 50 percent of the County. In addition to natural factors such as lightning, human activity is a primary factor contributing to the incidence of wildfires. Campfires, smoking, debris burning, arson and equipment use are common human-related causes of wildfires.

Identifying Fire Hazards

Fuel Rank

Fuel rank is a ranking system developed by CDF that incorporates four wildfire factors: fuel model, slope, ladder index and crown index.

The USFS has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CDF, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10%, 11-25%, 26-40%, 41-55%, 56-75% and >75%. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank is a reflection of the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index is a reflection of the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index is a reflection of the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index and crown index for a given area are combined in order to establish a fuel rank of medium, high or very high. Fuel rank is used by CDF to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

The eastern portion of the county, generally coinciding with the Sacramento Valley, is primarily devoid of CDF fuel ranks. The exceptions are pockets of grasslands that possess characteristics warranting “moderate” fuel ranks. These areas possess combustible material in sufficient quantities to pose a wildfire risk. However, the areas lack the topographic characteristics that could significantly affect fire behavior. In contrast, CDF data for the western portion of the county include a preponderance of “high” and “very high” fuel ranks. The fuel rank transition is generally consistent with the transition from the Sacramento Valley to the Coast Range. The general

tendency is for fuel rank severity to increase from east to west and from south to north within the county.

Fire Threat

The fuel rank data are used by CDF to delineate fire threat based on a system of ordinal ranking. Thus, the Fire Threat model creates discrete regions, which reflect fire probability and predicted fire behavior. The four classes of fire threat range from moderate to extreme.

Fire Hazard Severity Zones

The state has charged CDF with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas. In addition, CDF must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas. The FHSZ maps are used by the state Fire Marshall as a basis for the adoption of applicable building code standards. Fire Hazard Severity Zones in Colusa County are shown in Figure 3.8-1.

Local Responsibility Areas

Local Responsibility Areas (LRA) are concentrated in the Sacramento Valley, within the eastern half of the county. At about 360,000 acres, the LRA lands represent roughly one-half of the county's total area. Less than two percent of the LRA lands within the county are located within "moderate" FHSZ. In contrast, approximately 98 percent of the LRA lands do not warrant a FHSZ rank.

State Responsibility Areas

State Responsibility Areas within Colusa County are primarily found along the foothills, from the Stonyford/East Park Reservoir area in the north to the Cortina Creek area in the south. According to the CDF Fire Plan, over 700 people and nearly 400 houses occupy SRA portions of the county. Furthermore, approximately 90 percent of these people and houses are identified within Direct Protection Areas.

At about 270,000 acres, the SRA coverage equals approximately 35 percent of the county. Almost 200 thousand acres, or about three-quarters of the county's SRA, are within a "moderate" FHSZ. About 17 thousand acres, or seven percent of the county's SRA, are within a "high" FHSZ. Finally, about 45 thousand acres, or 17 percent of the county's SRA, are within a "very high" FHSZ.

Federal Responsibility Areas

Federal Responsibility Areas are concentrated in the westernmost limits of the county. At about 106,000 acres, the FRA coverage equals approximately 15 percent of the county's area. Over 90 percent of the FRA lands within Colusa County are located within "very high" FHSZ. The vast majority of very high FHSZ lands are found within the Mendocino National Forest, in the northwest corner of the county.

Documented Wildfires

Logically, CDF Fire Perimeter data are prone to reflect the distribution of FHSZ maps. Documented wildfires from the 2008 fire season were concentrated in the western half of the county. Furthermore, fires have tended to increase in size from east to west, as topography and fuels influence fire behavior and inhibit emergency response.

HAZARDS FROM AIR TRAFFIC

The State Division of Aeronautics has compiled extensive data regarding aircraft accidents around airports in California. This data is much more detailed and specific than data currently available from the FAA and the National Transportation Safety Board (NTSB). According to the California Airport Land Use Planning Handbook (2002), prepared by the State Division of Aeronautics, 18.2 percent of general aviation accidents occur during takeoff and initial climb and 44.2 percent of general aviation accidents occur during approach and landing. The State Division of Aeronautics has plotted accidents during these phases at airports across the country and has determined certain theoretical areas of high accident probability.

Accidents

Approach and Landing Accidents

As nearly half of all general aviation accidents occur in the approach and landing phase of flight, considerable work has been done to determine the approximate probability of such accidents. Nearly 77 percent of accidents during this phase of flight occur during touchdown onto the runway or during the roll-out (CA Division of Aeronautics, 2002). These accidents typically consist of hard or long landings, ground loops (where the aircraft spins out on the ground), departures from the runway surface, etc. These types of accidents are rarely fatal and often do not involve other aircraft or structures. Commonly these accidents occur due to loss of control on the part of the pilot and, to some extent, weather conditions.

The remaining 23 percent of accidents during the approach and landing phase of flight occur as the aircraft is maneuvered towards the runway for landing, in a portion of the airspace around the airport commonly called the traffic pattern (CA Division of Aeronautics, 2002). Common causes of approach accidents include the pilot's misjudging of the rate of descent, poor visibility, unexpected downdrafts, or tall objects beneath the final approach course. Improper use of rudder on an aircraft during the last turn toward the runway can sometimes result in a stall (a cross-control stall) and resultant spin, causing the aircraft to strike the ground directly below the aircraft. The types of events that lead to approach accidents tend to place the accident site fairly close to the extended runway centerline. The probability of accidents increases as the flight path nears the approach end of the runway.

According to aircraft accident plotting provided by the State Division of Aeronautics, most accidents that occur during the approach and landing phase of flight occur on the airport surface itself. The remainder of accidents that occur during this phase of flight are generally clustered along the extended centerline of the runway, where the aircraft is flying closest to the ground and with the lowest airspeed.

Takeoff and Departure Accidents

According to data collected by the State Division of Aeronautics, nearly 65 percent of all accidents during the takeoff and departure phase of flight occur during the initial climb phase, immediately after takeoff. This data is correlated by two physical constraints of general aviation aircraft:

- The takeoff and initial climb phase are times when the aircraft engine(s) is under maximum stress and is thus more susceptible to mechanical problems than at other phases of flight; and
- Average general aviation runways are not typically long enough to allow an aircraft that experiences a loss of power shortly after takeoff to land again and stop before the end of the runway.

While the majority of approach and landing accidents occur on or near to the centerline of the runway, accidents that occur during initial climb are more dispersed in their location as pilots are not attempting to get to any one specific point (such as a runway). Additionally, aircraft vary widely in payload, engine power, glide ratio, and several other factors that affect glide distance, handling characteristics after engine loss, and general response to engine failure. This further disperses the accident pattern. However, while the pattern is more dispersed than that seen for approach and landing accidents, the departure pattern is still generally localized in the direction of departure and within proximity of the centerline. This is partially due to the fact that pilots are trained to fly straight ahead and avoid turns when experiencing a loss of power or engine failure. Turning flight causes the aircraft to sink faster and flying straight allows for more time to attempt to fix the problem.

Facilities in Colusa County

The primary facility in the Planning Area is the Colusa County Airport, which bears the FAA code OØ8. In addition to the County Airport, the FAA identifies the following private airstrip facilities within the Planning Area:

TABLE 3.8-6: PRIVATE FACILITIES IN THE PLANNING AREA

Name	Relative Location	Lat. / Long.
Antelope Valley	10 miles W of Williams	39-08-46.5N / 122-21-14.8W
Davis	2 miles W of Colusa	39-12-03.61N / 122-02-54.9W
Gunnersfield Ranch	4 miles E of Delevan	39-21-09.6N / 122-05-37.9W
McCabe	3 miles W of Arbuckle	39-00-39.6N / 122-05-51.9W
Moller	1 mile N of Maxwell	39-17-18.6N / 122-11-20.9W
Moronis	3 miles SE of Meridian	39-06-11.6N / 121-51-00.9W
Sanborn	3 miles SE of Meridian	39-06-33.6N / 121-53-01.9W
Williams Gliderport	1 mile NE of Williams	39-09-48.6N / 122-07-53.9W

Colusa County Airport

The County Airport is located just west of SR 45, about two miles south of the City of Colusa. The airport, which is located on ±80 acres, is home to a single paved runway that measures 3,000 feet long. The operations estimate for the airport is approximately 30,000 flights per year. Less than half of the airport’s operations consist of general aviation, as the majority of the annual flights are related to agricultural aerial applications (SWCA, 2007). The take-offs and approaches are temporally concentrated in a manner that reflects their agricultural purpose, with the number of aerial application operations reaching a peak around April and June.

The Caltrans Division of Aeronautics *CIP Projects 2008 – 2017* identifies a series of programmed improvements for the Colusa Airport, including a T-hangar project, security fencing and runway rehabilitation. Other improvements include a Super AWOS (All Weather Operating System), rehabilitation of the rotating beacon and updates to the Airport Land Use Plan and Airport Master Plan.

Designated Air Space

The FAA (Order 7400.9S) identifies the following designated airspace for the Colusa County Airport:

AWP CA E5: Colusa County Airport, CA (lat. 39°10'45"N., long. 121°59'36"W.)

That airspace extending upward from 700 feet above the surface within a 6.5-mile radius of the Colusa County Airport. That airspace extending upward from 1,200 feet above the surface bounded on the east by the west edge of V-23, on the south by the north edge of V-200 and on the west by the west edge of V-195.

National Transportation Safety Board Aviation Accident Database

The NTSB Aviation Accident Database identifies 22 accidents, referred to as “events,” within Colusa County between January of 1970 and August of 2009. Of the 22 events, three resulted in fatalities and the remaining 19 are described as nonfatal. The following tables are recreated from the NTSB data for the fatal and nonfatal events, respectively:

TABLE 3.8-7: FATAL EVENTS IDENTIFIED BY THE NTSB

Event Date	Location	Make / Model	Reg. #	Severity
5/13/2007	Colusa, CA	Schweizer G-164B	N3633Q	Fatal (1)
4/14/2001	Williams, CA	Schleicher ASW-20	N47TR	Fatal (1)
5/25/1996	Colusa, CA	Grumman G-164	N48379	Fatal (1)

In the findings for the 2007 and 1996 events, the NTSB determined that the probable cause was failure to maintain proper clearance from power lines. The 2001 event, which involved a non-motorized glider, was determined to be the result of improper aircraft assembly compounded by failure to complete a positive control check.

TABLE 3.8-8: NONFATAL EVENTS IDENTIFIED BY THE NTSB

Event Date	Location	Make / Model	Reg. #
6/30/1999	Williams, CA	Hiller UH-12ET	N7173F
5/19/1995	Colusa, CA	GRUMMAN G-164A	N9830
5/7/1995	Colusa, CA	CESSNA 172A	N7358T
11/13/1993	Colusa, CA	CESSNA 182	N5723B
11/13/1987	Colusa, CA	CESSNA T210M	N761MX
12/18/1985	Arbuckle, CA	CESSNA 152	N4946H
8/22/1981	Colusa, CA	PIPER PA-28	N1005X
6/29/1981	Colusa, CA	GRUMMAN G-164	N7933

TABLE 3.8-8: NONFATAL EVENTS IDENTIFIED BY THE NTSB

Event Date	Location	Make / Model	Reg. #
6/2/1980	Colusa, CA	AERO COMDR 600S2R	N4017D
5/24/1980	Colusa, CA	CESSNA 150	N22883
4/10/1980	Colusa, CA	CESSNA 150	N6085G
11/16/1979	Colusa, CA	CESSNA 401	N3184K
4/30/1977	Colusa, CA	AERONCA 7AC	N2659E
5/1/1976	Colusa, CA	AERONCA 7AC	N81862
4/27/1976	Colusa, CA	AERO COMDR 600S2R	N4983X
7/6/1975	Colusa, CA	PIPER J-3	N98659
7/6/1975	Colusa, CA	PIPER PA-24	N5924P
9/18/1974	Colusa, CA	BOEING A75N1	N5050V
8/5/1972	Colusa, CA	AERO COMDR A-9B	N7293V

The following summaries are taken from the 22 documented events in Colusa County occurring over the course of nearly 40 years:

- None appear to have resulted in injuries to individuals on the ground
- ±86 percent (19 events) were nonfatal and about 14 percent (3 events) were fatal
- 22 events is approximately 0.56 events per year (over 39 years)
- Several involved flights with departure points outside of Colusa County
- ±11 were general aviation and ±8 were commercial/aerial application flights

The NTSB data provide brief probable cause descriptions, which are often accompanied by descriptions of any contributing factors. The following table is a general summary of the nature of the probable causes for the 22 events documented within Colusa County:

TABLE 3.8-9: NATURE OF PROBABLE CAUSES FOR 22 EVENTS DOCUMENTED BY NTSB

	Fuel Exhaustion	Pilot Error/ Misjudgment	Mechanical Failure	Stall/ Mush	Maintenance/ Planning
Number of Events	4	6	2	5	5

3.8.2 REGULATORY SETTING

FEDERAL

Environmental Protection Agency

The primary regulator of hazards and hazardous materials is the EPA, whose mission is to protect human health and the environment. Colusa County is located within EPA Region IX, which includes Arizona, California, Hawaii and New Mexico.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. CERCLA deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Aviation Act of 1958

The federal Aviation Act resulted in the creation of the Federal Aviation Administration (FAA). The FAA was charged with the creation and maintenance of a National Airspace System.

Federal Aviation Regulations (CFR, Title 14)

The Federal Aviation Regulations (FAR) establish regulations related to aircraft, aeronautics and inspections and permitting.

FY 2001 Appropriations Act

Title IV of the Appropriations Act required the identification of “Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire” by the US Departments of the Interior and Agriculture.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual

certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

STATE

State Oversight of Hazards and Hazardous Materials

The Department of Toxic Substances Control (DTSC) is chiefly responsible for regulation, handling, use and disposal of toxic materials while the State Water Resources Control Board (SWRCB) regulates discharge of potentially hazardous materials to waterways and aquifers and administers the basin plans for groundwater resources in the various regions of the state. The Central Valley Regional Water Quality Control Board (CVRWQCB) oversees surface and groundwater in Colusa County. Programs intended to protect workers from exposure to hazardous materials and from accidental upset are covered under the Occupational Health and Safety Administration at both the federal level (OSHA) and at the State level through the California Division of Occupational Safety and Health (CAL/OSHA), as well as through the California Department of Health Services (DHS). Air quality is regulated through the California Air Resources Board and Colusa County Air Pollution Control District. The State Fire Marshal is responsible for the protection of life and property through the development and application of fire prevention engineering, education and enforcement; the California Department of Forestry and Fire Protection (CalFIRE) provides fire protection services for California's state- and privately-owned wildlands.

Aeronautics Act (Public Utilities Code §21001)

The Caltrans Division of Aeronautics bases the majority of its aviation policies on the Aeronautics Act. Policies include permits and annual inspections for public airports and hospital heliports and recommendations for schools proposed within two miles of airport runways.

Airport Land Use Commission Law (Public Utilities Code §21670 et seq.)

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect *public health, safety,*

and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses (§21670). Furthermore, each ALUC must prepare an Airport Land Use Compatibility Plan (ALUCP). Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts.

Assembly Bill 337

Per AB 337, local fire prevention authorities and CalFire are required to identify “Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA). Standards related to brush clearance and the use of fire resistant materials in fire hazard severity zones are also established.

CA Code of Regulations

Title 3 of the CCR pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application
- Damage non-target crops or animals or any other public or private property
- Contaminate public or private property or create health hazards on said property

Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport and disposal of hazardous waste.

Title 26 of the CCR is a medley of state regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation and maintenance of the state’s landfills. The title establishes a landfill classification system and

categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special and hazardous).

CA Government Code Section 65302

This section, which establishes standards for developing and updating General Plans, includes fire hazard assessment and Safety Element content requirements.

California Health and Safety Code

Cal-EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

Food and Agriculture Code

Division 6 of the CA Food and Agricultural Code (FAC) establishes pesticide application regulations. The division establishes training standards for pilots conducting aerial applications as well as permitting and certification requirements.

California Fire Code

The California Fire Code (CFC) is Part 9 of Title 24, California Code of Regulations, also referred to as the California Building Standards Code. The CFC incorporates the 2009 International Fire Code of the International Code Council with necessary California amendments. The purpose of the CFC is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.

Public Resources Code

Section 4290 of the Public Resources Code (PRC) covers Fire Safe Regulations, establishing minimum road standards; signing for streets, roads and buildings; private water supply resources; and wildland fuel modification. Section 4291 of the PRC requires annual defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area or land covered with forest, brush, grass, or other flammable material.

Water Code

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (SWRCB). In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

LOCAL

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. In Colusa County, the Department of Health and Human Services is the designated CUPA. Each designated CUPA is responsible for the implementation of six statewide programs within its jurisdiction. These programs include:

- Underground storage of hazardous substances (USTs)
- Hazardous Materials Business Plan (HMP) requirements
- Hazardous Waste Generator requirements
- California Accidental Release Prevention (Cal-ARP) program
- Uniform Fire Code hazardous materials management plan
- Above Ground Storage Tanks (Spill Prevention Control and Countermeasures Plan only)

Implementation of these programs involves:

- Permitting and inspection of regulated facilities
- Providing educational guidance and notice of changing requirements stipulated in State or Federal laws and regulations
- Investigations of complaints regarding spills or unauthorized releases
- Administrative enforcement actions levied against facilities that have violated applicable laws and regulations

Colusa County Code

The Colusa County Code contains numerous measures and policies related to fire prevention and the reduction of fire hazards. Fire reduction and prevention measures are found in the following chapters of the Colusa County Code:

- Chapter 5: Building Code
- Chapter 6: Emergency Services
- Chapter 7: Fire Prevention
- Chapter 7A: Weed Abatement
- Appendix I: Zoning

Colusa County Airport Land Use Commission

The purpose of the Airport Land Use Commission (ALUC) is to:

1. Protect public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excess levels of noise.
2. Prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utility of these airports into the future.

These purposes are implemented through Airport Land Use Commissions, which are allowed in every county with a public use airport or with an airport served by a scheduled airline. The Colusa County Airport Advisory Committee has been designated the ALUC for Colusa County.

Colusa County Airport Comprehensive Land Use Plan (1995)

The Colusa County Airport Comprehensive Land Use Plan (CLUP) establishes land use standards to protect the public from safety hazards and noise impacts and to prevent the encroachment incompatible land uses around the Colusa County Airport.

The CLUP establishes the following land use “Restriction Areas” within the plan boundaries:

CLUP Height Restriction Area: The height restrictions established by the CLUP ensure the protection of the navigable airspace surrounding the airport. The following height restriction areas apply within the CLUP:

- Primary Surface: 200 feet beyond the runway in each direction and 250 feet wide
- Horizontal Surface: 5,000 feet from the primary surface 150 feet above the established airport elevation
- Conical Surface: 4,000 feet outward from the horizontal surface and upward from the horizontal surface at a slope of 20:1
- Approach Surface: Outward and upward 5,000 feet from each end of the primary surface at a slope of 20:1; the width is 250 feet at the Primary Surface and 1,250 feet at the 5,000 foot terminus
- Transitional Surface: Outward and upward from the sides of the primary and approach surfaces at a slope of 7:1

CLUP Noise Restriction Area: The noise restriction area established by the CLUP serves to minimize the number of people exposed to aircraft-generated noise. The CLUP establishes Land Use Compatibility Guidelines to analyze potential land uses relative to community noise equivalency level (CNEL). Proposed land uses within the CLUP can be compared to the Compatibility Guidelines and the CNEL noise contours identified in the plan.

CLUP Safety Restriction Area: Human exposure to aircraft operation hazards is minimized through the establishment of a safety restriction area. The following safety zones are established by the CLUP:

- Clear Zone: From the primary surface, 200 feet beyond the paved runway; extends 1,000 feet outward with an inner width of 250 feet and an outer width of 450 feet
- Approach/Departure Zone: Extends from outer edge of the Clear Zone and centered on the runway centerline; extends 2,000 feet outward with an inner width of 450 feet and an outer width of 850 feet
- Overflight Zone: The general area overflown by aircraft during normal procedures; general area under the horizontal surface that is outside of the Clear and Approach/Departure Zones

The CLUP Height Restriction Areas and the Safety Restriction Areas are shown on Figure 3.8-2.

In addition to the three safety zones, the CLUP designates the following as incompatible in the Clear Zone and Approach/Departure Zone:

- Any use that would direct a steady or flashing light of white, red, green or amber color toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing.
- Any use that would cause sunlight to be reflected toward an aircraft engaged in an initial straight climb following take-off or toward an aircraft engaged in a straight final approach toward a landing.
- Any use that would generate smoke, attract large concentrations of birds or otherwise affect safe air navigation.
- Any use that would generate electrical interference that could be detrimental to the operation of aircraft or airport instrumentation.
- Any hazardous installations such as: above-ground oil, gas or chemical storage facilities, but excluding facilities for non-commercial, private domestic, or private agricultural use.

As such, the restrictions are centered on the promotion of aircraft safety, the minimization of incompatible land uses and the safeguarding of human health and safety within the plan area.

Sonoma-Lake-Napa Fire Plan (2005)

The Sonoma-Lake-Napa Unit (LNU) of the CDF prepared the *Fire Management Plan* as a planning tool to reduce wildfire impacts throughout Sonoma, Lake, Napa, Yolo, Solano and Colusa Counties. The Plan identifies high value, high-risk areas in the six counties comprising the LNU.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Potential hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials (Less than Significant)

Future development, infrastructure, and other projects allowed under the 2030 General Plan may involve the transportation, use, and/or disposal of hazardous materials. Hazardous materials are typically used in industrial, agricultural, and commercial uses, as well as residential uses. Future uses may involve the transport and disposal of such materials from time to time. Future activities may involve equipment or construction activities that use hazardous materials (e.g., coatings, solvents and fuels, diesel-fueled equipment), clean up of sites with known hazardous materials, the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated, or disposal of contaminated materials at an approved disposal site. While hazardous materials may be associated with industrial and agricultural activities, hazardous materials may also be associated with the regular cleaning and maintenance of residential and other less intense uses. Accidental release of hazardous materials that are used in the construction or operation of a project may occur. There is also the potential for accidental release of pre-existing hazardous materials, either associated with previous activities on a site or naturally occurring hazards such as asbestos.

The use, transportation, and disposal of hazardous materials is regulated and monitored by local fire departments, Certified Unified Program Agencies (CUPAs), the State Division of Occupational Safety and Health, and the Department of Toxic Substances Control consistent with the requirements of federal, state, and local regulations and policies. Facilities that store hazardous materials on-site are required to maintain a Hazardous Materials Business Plan in accordance with state regulations. In the event of an accidental release of hazardous materials, the local CUPA, the

Department of Health Services, and emergency management agencies (e.g., Sheriff's Department and applicable fire department) would respond. All future projects allowed under the 2030 General Plan would be required to comply with the provisions of federal, state, and local requirements related to hazardous materials. As future development and infrastructure projects are considered by the County, each project would be evaluated for potential impacts, specific to the project, associated with hazardous materials as required under CEQA.

In addition to the requirements associated with state and federal regulations and the County Code, the 2030 General Plan includes policies and actions to address potential impacts associated with hazardous materials. These policies and actions in the 2030 General Plan would ensure that potential hazards are identified on a project site, that development is located in areas where potential exposure to hazards and hazardous materials can be mitigated to an acceptable level, and to require that businesses and agricultural operations comply with federal and state regulations regarding the use, transport, storage, and disposal of hazardous materials. The 2030 General Plan includes policies and actions to also ensure that the County has adequate emergency response plans and measures to respond in the event of an accidental release of a hazardous substance. Compliance with applicable 2030 General Plan policies and actions, as well as state and federal regulations, would ensure that potential impacts associated with the routine use, transport, storage, or disposal or accidental release of hazardous materials would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy SA 1-2: Update emergency management and response plans regularly to improve emergency response for all areas of the County.

Policy SA 1-3: Keep emergency access routes free of traffic impediments.

Policy SA 1-4: Coordinate with the California Emergency Management Agency to ensure coordinated local and state-level responses in the event of an emergency.

Policy SA 1-5: Ensure that all areas of the County are accessible to emergency response providers.

Policy SA 1-7: Permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level.

Policy SA 1-8: Designate areas with a potential for significant hazardous conditions for low intensity uses that do not attract significant numbers of residents, visitors, or employees.

Policy SA 1-12: Require, where feasible, new road networks (public and private) to provide adequate access for emergency equipment and provide alternate routes for evacuation

Policy SA 1-13: Require site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, fire, and/or flooding.

Policy SA 1-48: Require businesses and agricultural operations to comply with all applicable local, state and federal regulations regarding the use, transport, storage and disposal of hazardous waste and hazardous materials.

Policy SA 1-49: Utilize the development review process to reduce the risk of community exposure to hazardous materials.

Policy SA 1-50: Require proponents of projects that would involve the use, storage, transport or disposal of hazardous materials or hazardous waste to demonstrate full compliance with all applicable local, state and federal regulations related to hazardous materials and waste. Any significant adverse environmental impacts associated with exposure to hazardous materials should be mitigated to a less than significant impact prior to approval of the project.

Policy SA 1-51: Encourage farming practices that utilize non-hazardous materials for fertilizers and pesticides.

Policy SA 1-52: Agricultural crop dusting operations shall not occur during periods of high wind.

Actions

Action SA 1-B: Periodically review, maintain and repair County roadways and emergency access routes and provide signage, where necessary, to clearly identify emergency access routes.

Action SA 1-C: Seek funding from State, Federal, and other sources to assist in emergency management planning, including community education and outreach describing public procedures and evacuation routes in the event of an emergency or natural disaster.

Action SA 1-D: Annually update the emergency contact list and emergency response information on the County's website. The information should include emergency access routes, evacuation center locations, available emergency resources and contact information for emergency responders.

Action SA 1-EE: Require new residential development and development of uses that include sensitive receptors, to be located a safe distance from existing and planned sources of hazardous materials associated with industrial and agricultural operations. Sensitive receptors include schools, hospitals, nursing/convalescent homes, day care centers, and neighborhood parks.

Action SA 1-FF: New development and redevelopment in areas previously used for agricultural, commercial or industrial uses shall be required to demonstrate that soils, groundwater and structures affected by hazardous materials associated with previous land use activities will not pose a threat or health risk to the new development, future land users, or the environment. Project proponents shall be required to complete a Phase I Environmental Site Assessment (ESA) that meets the requirements and standards of the American Society for Testing and Materials (ASTM) prior to project approval on lands where there is a risk of exposure to hazardous materials or substances and to complete a Phase II ESA if necessary.

Action SA 1-GG: Support the creation of a public information program regarding the safe disposal of household hazardous wastes, such as motor oil, used appliances containing mercury or Freon, fluorescent light bulbs, batteries, and medical waste such as used syringes.

Impact 3.8-2: Potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Less than Significant)

The 2030 General Plan would allow land use, including agricultural and industrial, that may result in hazardous emissions or handle hazardous materials, substances, or waste in the vicinity of existing and future schools. All hazardous materials would be handled in accordance with federal, state, and county requirements, as described under Impact 3.8-1, which would limit the potential for a project to expose nearby uses, including schools, to hazardous emissions or an accidental release. Hazardous emissions are monitored by the Colusa County Air Pollution Control District, Regional Water Quality Control Board, and Department of Toxic Substances Control, and the local CUPA. In the event of a hazardous materials spill or release, notification and cleanup operations would be performed in compliance with applicable federal, state, and local regulations and policies, including hazard mitigation plans. Compliance with all existing regulations and hazard mitigation plans as well as 2030 General Plan policies and actions discussed under Impact 3.8-1 would ensure that the impact would be **less than significant**.

Impact 3.8-3: Impact from being included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Less than Significant)

As previously described, there are several sites in the County that are included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. These sites have a history of contamination with hazardous materials and are subject to various State and federal laws and regulators, including the CERCLA, EPA, DTSC, and RWQCB. Development allowed by the 2030 General Plan could create a hazard to the public or the environment through a disturbance or release of contaminated materials if the development occurs on or adjacent to contaminated sites without appropriate measures to contain or mitigate the existing contamination. The 2030 General Plan includes policies and actions to ensure that existing hazards, including those associated with known hazardous materials sites, are addressed prior to development. Compliance with applicable 2030 General Plan policies and actions, as well as state and federal regulations, would ensure that potential impacts associated with the hazardous conditions on sites listed pursuant to Government Code Section 65962.5 would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTSPolicies

Policy SA 1-7: Permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level.

Policy SA 1-13: Require site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, fire, and/or flooding.

Policy SA 1-49: Utilize the development review process to reduce the risk of community exposure to hazardous materials.

Actions

Action SA 1-FF: New development and redevelopment in areas previously used for agricultural, commercial or industrial uses shall be required to demonstrate that soils, groundwater and structures affected by hazardous materials associated with previous land use activities will not pose a threat or health risk to the new development, future land users, or the environment. Project proponents shall be required to complete a Phase I Environmental Site Assessment (ESA) that meets the requirements and standards of the American Society for Testing and Materials (ASTM) prior to project approval on lands where there is a risk of exposure to hazardous materials or substances and to complete a Phase II ESA if necessary.

Impact 3.8-4: Impact to people residing or working within two miles of a public airport, public use airport, or private airstrip (Significant and Unavoidable)

Hazards related to airports are typically grouped into two categories: air hazards and ground hazards. Air hazards jeopardize the safety of an airborne aircraft and expose passengers, pilots and crews to danger. Examples of air hazards include tall structures, glare-producing objects, bird and wildlife attractants, radio waves from communication centers, or other features that have the potential to interfere with take-off or landing procedures, posing a risk to aircraft. Ground hazards jeopardize the safety of current and future residents and/or workers in the vicinity of an airport. The most obvious ground hazard is a crash, which may produce a serious, immediate risk to those residing in or using areas adjacent to the airport. Most accidents occur during take-off and landing. Therefore, the higher the density around an airport, including transportation facilities, the higher the risk associated with this type of hazard.

As discussed in Chapter 3.10, Land Use and Population, the 2030 General Plan designates land uses in the vicinity of the airport that conflict with the uses allowed by the CLUP in the clear and overflight zones. As future development and infrastructure projects are considered by the County, each project would be evaluated for potential impacts, specific to the project, associated with airport safety as required under CEQA. In addition to the requirements associated with state and federal regulations and the County Code, the 2030 General Plan includes policies and actions to address potential impacts associated with airport safety. Policy SA 1-54 of the 2030 General Plan would require all future projects to comply with the provisions of federal, state, and local requirements related to airport safety.

While implementation of the policies and actions in the 2030 General Plan would ensure that new development is reviewed for consistency with setbacks, land use, and height requirements to ensure safety to both users of the airport/airstrips and people living and working in the vicinity of the Colusa County Airport and other airstrips in the County, the conflict in land uses allowed under the 2030 General Plan versus the CLUP presents a potential hazard.. This impact is potentially significant. Since the 2030 General Plan provides policies and actions to address airport safety, the only mitigation to reduce this impact to a less than significant level would be to change land use

designations on the Land Use Map in the vicinity of the airport to be consistent with the CLUP. Without this change in land use, the impact would remain **significant and unavoidable**. Alternative 2, Modified Land Use Map, would reduce this potential impact to a less than significant level and is discussed in Chapter 5, Project Alternatives.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy SA 1-53: Ensure that land uses within the vicinity of airports and airstrips are compatible with airport restrictions and operations.

Policy SA 1-54: Ensure that all development proposals in the vicinity of the Colusa County Airport are consistent with the restrictions and requirements contained in the Colusa Airport Comprehensive Land Use Plan (CLUP).

Policy SA 1-55: The County shall ensure that new development proposals do not result in encroachments into future airport expansion areas and do not result in adverse economic impacts to airport operations.

Policy SA 1-56: Work cooperatively with the Airport Land Use Commission to ensure continued airport operations in a safe and cost-effective manner, consistent with the public's needs and Federal Aviation Authority regulations.

Actions

Action SA 1-HH: As part of the development review process, new development and expansion proposals near the Colusa County airport and public and private airstrips shall be:

- a. Reviewed for consistency with setbacks, land use restrictions, and height as determined by the Federal Aviation Administration (FAA) and the Colusa County Airport Land Use Commission;*
- b. Provided to the Airport Land Use Commission for Review.*

Action SA 1-II: As part of future planning efforts, the Department of Planning and Building shall review and provide input into updates to the Comprehensive Airport Land Use Plan to ensure that new development within the Colusa County Airport Safety Zone is compatible with existing airport operations, and that any changes or improvements to the airport facility or operations are compatible with land uses within this zone.

Impact 3.8-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less than Significant)

The 2030 General Plan would allow a variety of new development, including residential, commercial, industrial, agricultural, and public service projects, which would result in increased jobs and population in the County. Roads and infrastructure improvements would occur to accommodate the new growth. Future projects are not anticipated to remove or impede

evacuation routes and the 2030 General Plan does not include land uses, policies, or other components that conflict with adopted emergency response or evacuation plans.

The 2030 General Plan would improve transportation systems throughout the County and includes policies and actions designed to ensure that the County's emergency response plans are maintained and regularly updated. The 2030 General Plan would also ensure that the County's emergency access routes, emergency contact lists, and public information regarding designated facilities and routes are regularly reviewed to ensure that up to date information is available to the County and the public in the event of an emergency. Important new community safety facilities would be located outside of identified flood, geologic, and fire hazard areas to ensure these facilities are available in the event of a natural disaster. Implementation of the 2030 General Plan would have a **less than significant impact** with regards to this issue.

GENERAL PLAN 2030 POLICIES AND ACTIONS

Policies

Policy SA 1-1: Ensure that during natural catastrophes and emergency situations, the County can continue to provide essential emergency services.

Policy SA 1-2: Update emergency management and response plans regularly to improve emergency response for all areas of the County.

Policy SA 1-3: Keep emergency access routes free of traffic impediments.

Policy SA 1-4: Coordinate with the California Emergency Management Agency to ensure coordinated local and state-level responses in the event of an emergency.

Policy SA 1-5: Ensure that all areas of the County are accessible to emergency response providers.

Policy SA 1-6: Site locations for new emergency response facilities such as sheriff's stations, fire stations in areas that are not subject to high levels of risk from flooding, wildland fires, or seismic effects.

Actions

Action SA 1-A: Every three to five years, review and update coordinated emergency response plans collaboratively with agencies that provide services for police protection, fire, public works, flood control, and other emergency services. Plans should include information regarding emergency access routes for major flood or fire events, measures to ensure adequate access for emergency vehicles on designated emergency routes, and the location of emergency shelters and evacuation areas.

Action SA 1-B: Periodically review, maintain and repair County roadways and emergency access routes and provide signage, where necessary, to clearly identify emergency access routes.

Action SA 1-C: Seek funding from State, Federal, and other sources to assist in emergency management planning, including community education and outreach describing public procedures and evacuation routes in the event of an emergency or natural disaster.

Action SA 1-D: Annually update the emergency contact list and emergency response information on the County's website. The information should include emergency access routes, evacuation center locations, available emergency resources and contact information for emergency responders.

Action SA 1-E: Locate new important community safety facilities, such as hospitals, health care centers, emergency shelters, fire and police stations, and central communication centers outside of identified flood, geologic and fire hazard areas.

Impact 3.8-6: Expose people or structures to a risk of loss, injury or death from wildland fires (Less than Significant)

The western portion of the County faces threats from wildland fires. The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point.

Wild fires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low intensity wild fires have a role in the County's ecosystem, wild fires put human health and safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Colusa County has areas with the appropriate fuel loading and topography for wildfire, particularly in the western region of the County (Figure 3.8-1). When this is combined with the hot and dry summers, the risk of wildfire increases substantially. Most wildland fires are human caused, so areas with easy human access to land with the appropriate fire parameters generally result in an increased risk of fire.

Communities in the western portion of the County, including Stonyford, Century Ranch, and Lodoga, have areas designated to accommodate additional residential and commercial development. The 2030 General Plan would allow less intense development in the western portion of the County outside of these communities, including low intensity development in the Forest Lands, Agriculture Upland, and Agriculture Transition designations. Development allowed under the 2030 General Plan would allow people and structures in areas at risk of wildland fires, although at low densities.

All future projects allowed under the 2030 General Plan would be required to comply with the provisions of federal, state, and local requirements related to wildland fire hazards, including state fire safety regulations associated with wildland-urban interfaces, fire-safe building standards, and

defensible space requirements. As future development and infrastructure projects are considered by the County, each project would be evaluated for potential impacts, specific to the project, associated with wildland fire hazards as required under CEQA. The 2030 General Plan establishes policies and actions to address potential wildland fire hazards.

Implementation of the 2030 General Plan policies and actions would ensure that potential wildland fire hazards are mitigated through requirements for adequate water supply and water flow availability, amending the Zoning Ordinance to address fire protection methods (e.g., fuels management, water supply, fire-resistant materials, etc.), implementing state recommendations for fire prevention, ensuring adequate emergency access, and ensuring public awareness regarding fire safety. Compliance with applicable 2030 General Plan policies and actions as well as state and local requirements would reduce potential wildland fire hazards to **less than significant**.

GENERAL PLAN 2030 POLICIES AND ACTIONS

Policies

Policy SA 1-43: Reduce potential fire hazards through management and conservation of forested lands and fuel management in wildland areas.

Policy SA 1-44: Facilitate clear and organized communication and coordination between County departments and fire protection agencies.

Policy SA 1-45: Require identification of an adequate water source and supply system, including adequate fire flows, prior to development in very high, high or moderate Fire Hazard Severity Zones. Major industrial and other large-scale developments may be required to provide and maintain water storage facilities to ensure adequate water supply.

Policy SA 1-46: Require new residential developments to demonstrate adequate fire flow availability (water pressure and water quantity) prior to project approval.

Policy SA 1-47: Development projects adjacent to significant wildland, forest, or open space areas with high fuel loads shall prepare and implement wildland fire management plans.

Actions

Action SA 1-Z: Revise the Development Standards to require fire protection methods, including fuels management and adequate water supply, for new development and expansion projects in areas of high and very high Fire Hazard Severity Zones, as shown in Figure 4.2-1 of the Background Report. Fire protection methods may consist of the establishment of “defensible space” around structures, using fire resistant ground cover, building with fire-resistant roofing materials, fuel load reductions, and other appropriate measures.

Action SA 1-AA: Revise the County’s road standards to require new roads in high and very high Fire Hazards Severity Zones to be of sufficient grade, radius and width to allow access by fire-fighting vehicles. The applicable fire protection agency shall be consulted as part of the development review process regarding fire protection and the design of new roads in these Fire Hazard Severity Zones.

Action SA 1-BB: Consult with the applicable fire protection agency during the review of development applications for projects within high and very high Fire Hazard Severity Zones.

Action SA 1-CC: Implement state recommendations for fire prevention in Fire Hazard Severity Zones.

Action SA 1-DD: Create a public outreach and awareness program to promote the development of “defensible space” around structures using areas free of fuel loads, fire resistant landscaping and fire resistant building materials.

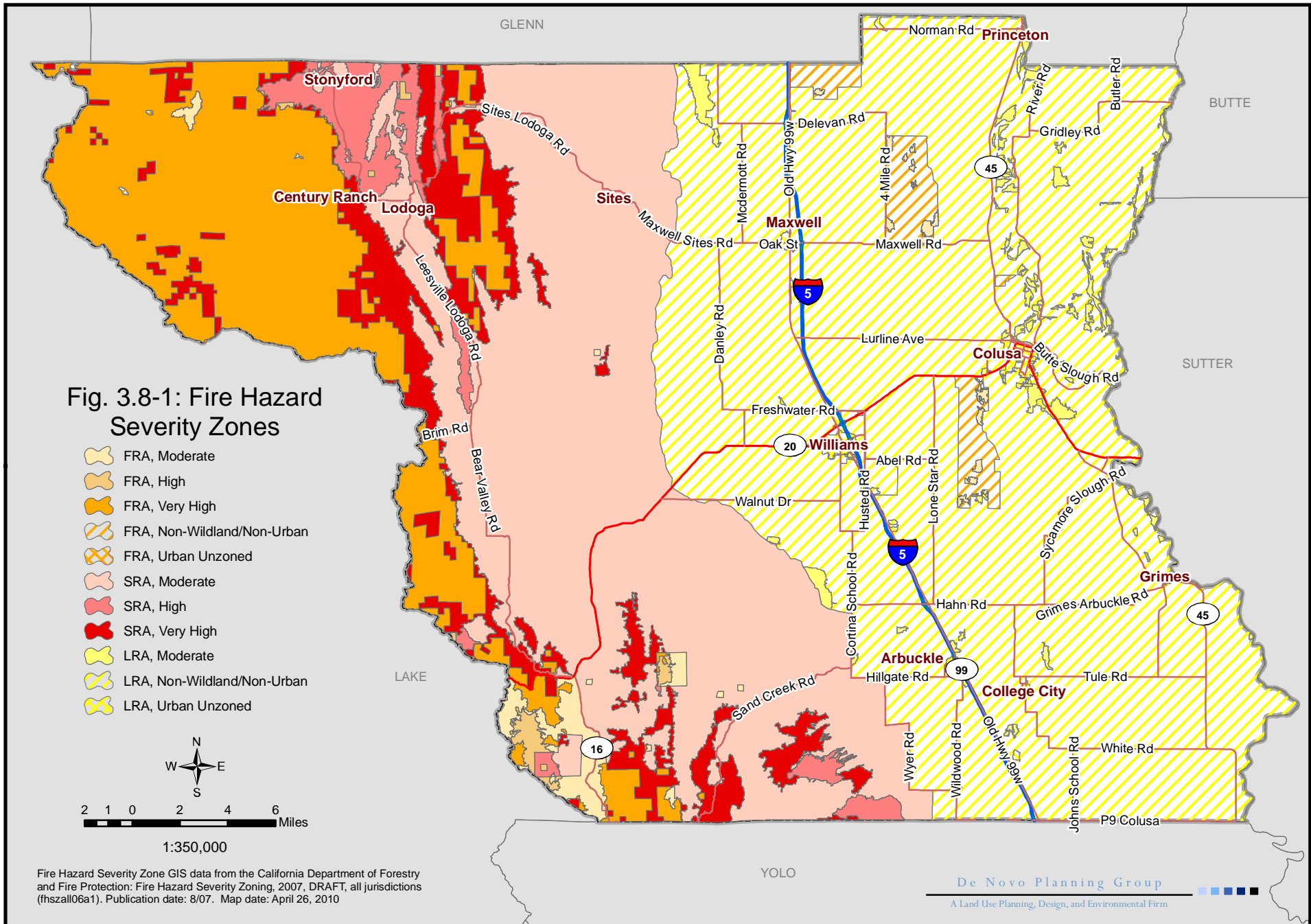













Fig. 3.8-1: Fire Hazard Severity Zones

-  FRA, Moderate
-  FRA, High
-  FRA, Very High
-  FRA, Non-Wildland/Non-Urban
-  FRA, Urban Unzoned
-  SRA, Moderate
-  SRA, High
-  SRA, Very High
-  LRA, Moderate
-  LRA, Non-Wildland/Non-Urban
-  LRA, Urban Unzoned



2 1 0 2 4 6 Miles

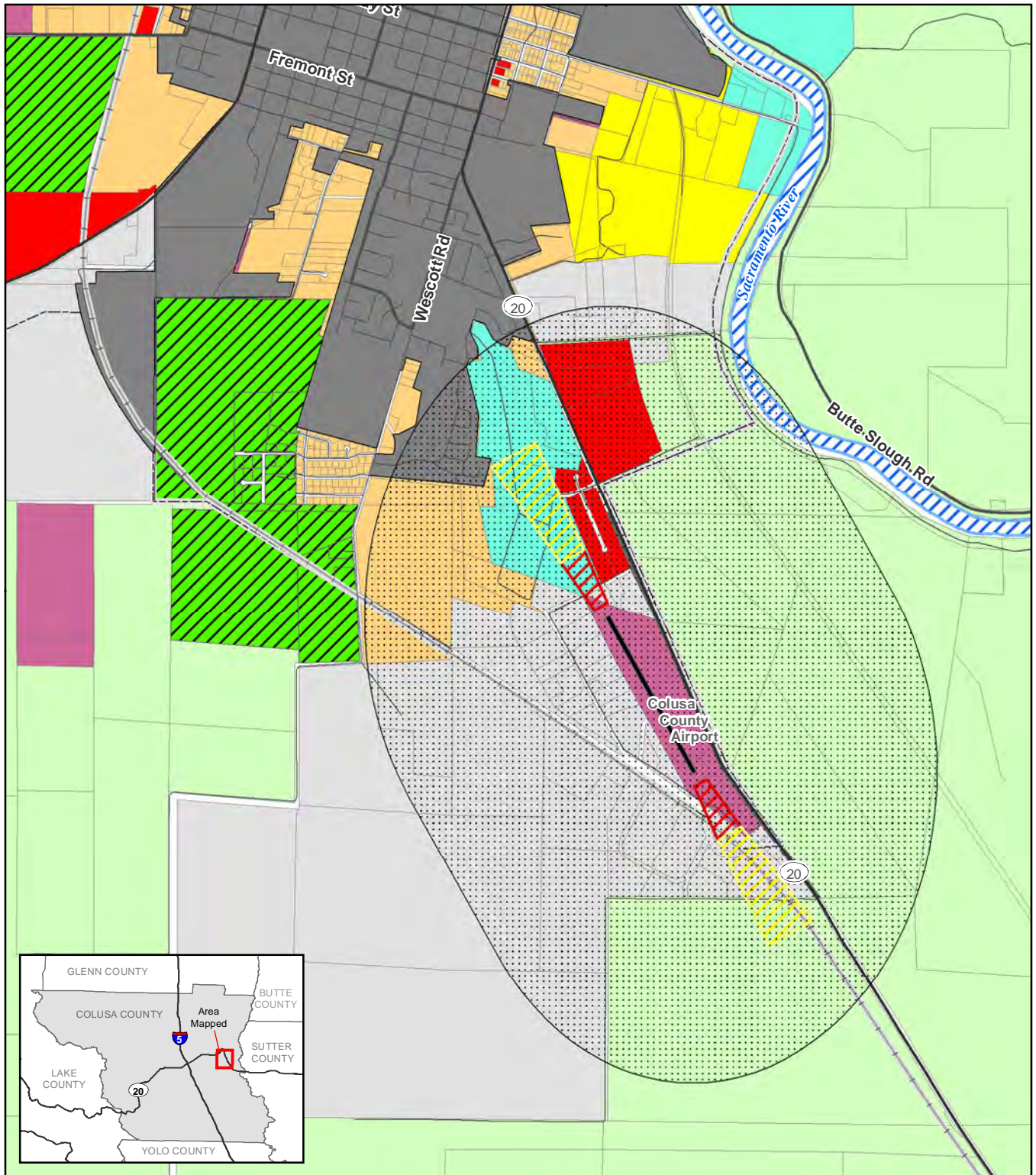
1:350,000

Fire Hazard Severity Zone GIS data from the California Department of Forestry and Fire Protection: Fire Hazard Severity Zoning, 2007, DRAFT, all jurisdictions (fhszall06a1). Publication date: 8/07. Map date: April 26, 2010

De Novo Planning Group

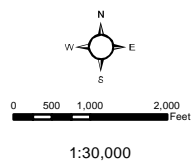
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|---------------------------------|--|
| Safety Restriction Areas | 2011 Draft General Plan Land Use Designations |
| Approach/Departure Zone | URA - Urban Reserve Area |
| Clear Zone | AG - Agricultural General |
| Overflight Zone | PR - Parks & Recreation |
| | PS - Public/Semi-Public Services |
| Planning Boundaries | C - Commercial |
| City of Colusa | I - Industrial |
| Sphere of Influence | RR - Rural Residential |
| | UR - Urban Residential |
| | MU - Mixed Use |

Figure 3.8-2: Airport Safety Zones



Water supplied to Colusa County comes from two sources: groundwater and surface water. All domestic water systems in the County are supplied with groundwater, while most irrigation systems are supplied with surface water from the Tehama-Colusa or Glenn-Colusa Canals, the Colusa Drain, or the Sacramento River.

There are community water systems located in Arbuckle, Maxwell, Princeton, Grimes, Stonyford, and the Cities of Colusa and Williams. There are also numerous private groundwater wells located throughout the County that serve individual parcels throughout the unincorporated areas of the County.

As with most Sacramento Valley counties, Colusa County is subject to flooding problems in its poorly-drained valley floor. Although Colusa County's foothill and upland areas generally do not experience severe flooding, drainage problems can occur in the western portion of the County.

This section provides a background discussion of the regional hydrology, surface water bodies, seasonal and long term hydrology, surface water supply contracts, flooding, drainage, and water quality in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. Two comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic. These comments are provided in Appendix A and are summarized below.

- The California Regional Water Quality Control Board- Central Valley Region submitted a comment letter that provided information regarding construction storm water permits, sewer system permits, industrial storm water permits, Clean Water Act Section 404 and 401 permits, and waste discharge requirements.
- The California Emergency Management Agency submitted a comment letter that provided background information regarding general plan requirements for addressing hazards, including development within the 100-year flood plain.

Key Terms

Acre feet: The volume of one acre of water to a depth of one foot. Each acre-foot of water is equal to approximately 325,851.4 gallons.

BGS: Below ground surface.

GPD: Gallons per day.

GPM: Gallons per minute.

Groundwater: Water that is underground and below the water table, as opposed to surface water, which flows across the ground surface. Water beneath the earth's surface fills the spaces in soil, gravel, or rock formations. Pockets of groundwater are often called "aquifers" and are the source of drinking water for a large percentage of the population in the United States. Groundwater is often extracted using wells which pump the water out of the ground and up to the surface.

3.9 HYDROLOGY AND WATER QUALITY

Groundwater is naturally replenished by surface water from precipitation, streams, and rivers when this recharge reaches the water table.

MG: Million gallons

MGD: Million gallons per day

Surface water: Water collected on the ground or from a stream, river, lake, wetland, or ocean. Surface water is naturally replenished through precipitation, but is naturally lost through evaporation and seepage into soil.

3.9.1 EXISTING SETTING

REGIONAL HYDROLOGY

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.9-1 shows the primary watershed classification levels used by the State of California. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.9-1: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

<i>WATERSHED LEVEL</i>	<i>APPROXIMATE SQUARE MILES (ACRES)</i>	<i>DESCRIPTION</i>
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2009

Hydrologic Regions/Units in Colusa County

The majority of Colusa County is considered part of the Sacramento River Hydrologic Region. However, a small, north-western corner of the County contributes its drainage to the Pacific through the North Coast Hydrologic Region.

Sacramento River Hydrologic Region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties, and small areas of Alpine and Amador counties. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains.

North Coast Hydrologic Region. The North Coast hydrologic region covers approximately 12.46 million acres (19,470 square miles) and includes all or portions of Modoc, Siskiyou, Del Norte, Trinity, Humboldt, Mendocino, Lake, and Sonoma counties, and small areas of Shasta, Tehama, Glenn, Colusa, and Marin counties. Extending from the Oregon border south to Tomales Bay, the region includes portions of four geomorphic provinces.

Hydrologic Units. Within Colusa County there are five hydrologic units. These include the Cache Creek, Cortina, Colusa Basin, Stony Creek, and Upper Elmira.

Hydrologic Areas

For purposes of planning on a County-wide basis, hydrologic areas are generally considered to be the appropriate watershed planning level. As specific projects within the County are developed the hydrologic area level may be too large in terms of scale, and a hydrologic subarea may be considered more appropriate. The remainder of this section is based on the hydrologic area level for watershed planning purposes.

Colusa County is located within 12 hydrologic areas. These include: Bear Creek, Butte Basin, Cortina Creek, East Blue Ridge, Fouts Springs, Glenn Colusa, Logan Creek, Lower Cache Creek, Middle Cache Creek, Stone Corral, Sycamore Sutter, and Whiskey Creek. Table 3.9-2 provides a breakdown of the acreages of each watershed within Colusa County. Figure 3.9-1 provides an illustration of each watershed.

TABLE 3.9-2: WATERSHEDS (HYDROLOGIC AREAS)

COMMUNITY	ACREAGE
Bear Creek	65,746.00
Butte Basin	43,200.20
Cortina Creek	11,327.50
East Blue Ridge	33.72
Fouts Springs	110,769.00
Glenn Colusa	288,804.00
Logan Creek	2,916.90
Lower Cache Creek	48.65
Middle Cache Creek	570.15
Stone Corral Creek	94,779.10
Sycamore-Sutter	103,713.00
Whiskey Hill	18,348.90
Total	740,257.12

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2009

SURFACE WATER BODIES

The Sacramento River is the only major naturally occurring water body in Colusa County. The four major man-made water bodies in the County are the Colusa Basin Drainage Canal, the Tehama Colusa Canal, the Glenn Colusa Canal, and the East Park Reservoir. The following discussion provides information on the location, ownership, infrastructure, and an overview of the operational practices of the major water bodies that relate to or are within Colusa County.

Sacramento River

The Sacramento River is the only major naturally occurring water body in Colusa County. It runs north-south through the eastern part of the County and passes through on its way to the Delta and San Francisco Bay. Many tributary streams flow from the mountains on both sides of the valley into the Sacramento River. According to a 2005 report by the Glenn County Department of Agriculture, flows in the Sacramento River near Grimes in southern Colusa County range from 6,500 cubic feet per second (cfs) to 16,900 cfs for the period of record of 1946-2003 (GMP, 2008).

According to the Colusa County Groundwater Management Plan (GMP), data is not currently available to characterize the stream/aquifer interaction along the Sacramento River through Colusa County. To properly determine groundwater–surface water interaction, it is necessary to have nested monitoring wells located in close proximity to a stream gage. The nested monitoring wells must be completed in the very shallow groundwater zone that is directly connected to a surface water system, and in the deeper zones as well. The existing well locations are not suitable for characterizing the stream/aquifer interaction. The Department of Water Resources (DWR) Northern District has stated that existing data is inadequate to characterize the system (GMP, 2008).

Colusa Basin

The Colusa Basin is a flat lowland on the Sacramento Valley floor and extends from the City of Orland south to Knights Landing, and the Sacramento River and the Coastal Range foothills form its eastern and western boundaries, respectively. The Colusa Basin watershed is approximately 1,620 square miles (over one million acres) and lies within Glenn, Colusa, and northern Yolo Counties.

Most of the land in the Basin is used primarily for agricultural production and also contains three national wildlife refuges: Sacramento, Delevan, and Colusa. Reclamation District No. 2047 (RD 2047) was formed in 1919, prompted by the inadequacy of the existing drainage facilities with the Colusa Basin (GMP, 2008). Increased development of the Colusa Basin caused return flows from irrigation to create flooding problems downstream of the irrigated areas (GMP, 2008). RD 2047 developed a plan to construct physical works to handle the irrigation return flow. The principle feature of the RD 2047 plan was the Colusa Basin Drainage Canal.

Colusa Basin Drainage Canal

The manmade Colusa Basin Drainage Canal conveys stormwater runoff and agricultural return flows from the Colusa Basin watershed and discharges to the Sacramento River at Knights Landing. The canal begins at the junction with Willow Creek and flows southerly to its terminus at the Knights Landing Ridge Outfall Gates. The Colusa Basin Drainage Canal is designed to convey irrigation drainage flows to the Knights Landing Outfall Gates for discharge into the Sacramento River. During high flows, the Knights Landing Outfall Gates are closed and water in the Colusa Basin Drain is often diverted through the Knights Landing Ridge Cut to the Yolo Bypass. The Colusa Basin Drain is the single largest source of agricultural return flows to the Sacramento River (GMP, 2008).

The Colusa Basin Drainage Canal has thirty-two naturally occurring ephemeral creeks, fourteen of which are in Colusa County, that drain flows from the foothill area (USBR, 2000). Those in Colusa County include:

- Cortina Creek
- Freshwater Creek
- Glenn Valley Slough
- Manor Slough
- Salt Creek
- Spring Creek
- Sycamore Slough
- Elk Creek
- Funks Creek
- Lurline Creek
- Petroleum Creek
- Sand Creek
- Stone Corral Creek
- Walters Creek

Runoff in these creeks typically begins in late fall, peaking in mid-winter, and decline to no flow in late spring (GMP, 2008). This runoff generally passes through the Colusa Basin with little impairment for consumptive use and continues to the Sacramento River or Yolo Bypass through the Colusa Basin Drain. There is little to no naturally occurring water supplies in the Colusa Basin in the summer other than groundwater (GMP, 2008). Water from the Sacramento River was initially

diverted and used for irrigation use; however, after the construction of the Colusa Basin Drain, irrigators started reusing the irrigation return flows.

Tehama Colusa Canal

The Tehama Colusa Canal receives water from the settling basin at Red Bluff Diversion Dam. Groundbreaking ceremonies for the canal took place July 31, 1965. The canal is 110.9 miles long. It travels south from Red Bluff Diversion Dam through Tehama, Glenn, Colusa Counties, and into Yolo County, and terminates about two miles south of Dunnigan, California. The initial capacity of the canal is 2,530 cubic feet per second, diminishing to 1,700 cubic feet per second at the terminus.

The Tehama Colusa Canal System diverts water from the Sacramento River for use by various water districts across the region. The canal system is owned by the U.S. Bureau of Reclamation (USBR) and operated by the Tehama Colusa Canal Authority (TCCA). The dam at Red Bluff is owned and operated by the USBR. Within this arrangement exists a network of release structures and pumps that frequently result in complex flow conditions in the canals and pipes that deliver water to the districts. The TCCA's mission statement is: *"... to secure, protect, and develop dependable and affordable sources of water and to operate, maintain, and improve the works essential to deliver such water."* Operating two canal systems for the USBR (the Tehama Colusa Canal, 110 miles long and the Corning Canal, 15 miles long), the combined system serves 17 water districts.

Glenn Colusa Canal

The Glenn Colusa Canal is operated by the Glenn Colusa Irrigation District (GCID). GCID is the largest water district in the Sacramento Valley. Located approximately eighty miles north of Sacramento, California, the district boundaries cover approximately 175,000 acres; of which 153,000 acres are deeded property and 138,800 are irrigable. There are 1,076 landowners in the District and an additional 300 tenant water users. There are an additional 5,000 acres of private habitat land, and winter water supplied by GCID to thousands of acres of rice land provides valuable habitat for migrating waterfowl during the winter months.

GCID's main pump station, its only diversion from the Sacramento River, is located near Hamilton City. The District's 65-mile long Main Canal conveys water into a complex system of nearly 1,000 miles of canals, laterals and drains, much of it constructed in the early 1900s.

From its first diversions until 1964, GCID relied upon its historic water rights and adequate water supply from the Sacramento River hydrologic system which, receives rainfall and snowmelt from a 27,246 square mile watershed with average runoff of 22,389,000 acre-feet, providing nearly one-third of the state's total natural runoff. In 1964, after nearly two decades of negotiations with the United States, GCID along with other Sacramento River water rights diverters entered into "Settlement Water Contracts" with the USBR. These Settlement Contracts were necessary at that time to allow the USBR to construct, operate, and divert water for the newly constructed Central Valley Project. The contract provided GCID with water supply for the months of April through October for 720,000 acre-feet of base supply, and 105,000 acre-feet of Central Valley Project water that is purchased during the months of July and August. During a designated critical year

when natural inflow to Shasta Reservoir is less than 3.2 million acre-feet, GCID's total supply is reduced by 25 percent, to a total of 618,000 acre-feet.

Additionally, the District has rights under a SWRCB permit to "winter water" from November 1 through March 31 at a 1,200 cfs diversion rate. This water supply is used for rice straw decomposition and waterfowl habitat. The permit provides 150,000 acre-feet for rice straw decomposition and 32,900 acre-feet for crop consumption.

Groundwater can be used to supplement GCID's supplies, with 5,000 acre-feet available from District wells, and approximately 45,000 acre-feet from privately owned landowner wells. The GCID also has pre 1914 water rights totaling approximately 150,00 acre-feet.

East Park Reservoir

East Park Dam, which forms East Park Reservoir, is part of the Orland Project. Completed in 1910, the dam was authorized under the Reclamation Act of June 17, 1902 and stores irrigation waters diverted and impounded from Stony Creek, Little Stony Creek, Squaw Creek, and Little Indian Creek. East Park Reservoir measures 2.7 miles in length and encompasses an area of 1,820 acres. The reservoir has a total capacity of 52,000 acre-feet. There are 25 miles of shoreline, ten miles of which are available for recreation. East Park Reservoir is located approximately 20 miles west of the town of Maxwell. The small town of Stonyford lies a few miles northwest of the reservoir, and the smaller community of Lodoga is near the southeastern corner.

Total land area around the reservoir is 2,468 acres. Approximately 1,630 acres at the reservoir is used by the public for recreation, including boating, fishing, and bird watching. There are approximately 200 acres of wetlands and 1,200 acres of upland wildlife areas. Cattle graze on approximately 1,900 acres during the off-season. Currently, the reservoir is open to the public approximately April through the end of September.

Proposed Sites Reservoir

The proposed Sites reservoir has been identified by the DWR and the CALFED Bay-Delta Program (CALFED) as one of the most cost-effective and environmentally beneficial new surface storage facilities under consideration in California (Northern California Water Association {NCWA}, 2010). The California legislature first recognized the potential for a project at Sites in 1993 (AB 2315, Chapter 415, Statutes of 1993). The CALFED Record of Decision (ROD) provides that "CALFED will join local partners in Stage 1 (seven years) to evaluate" Sites reservoir. A joint planning Memorandum of Understanding for the reservoir between federal and state agencies and local interests in the Sacramento Valley was signed in November 2000.

The CALFED ROD also states that the project, if ultimately constructed, could enhance water supply reliability for environmental, urban and agricultural uses throughout the state. Sites would provide water supplies in average and dry years for urban, agricultural and environmental purposes, increase Delta outflows during critical times, improve flood control, enhance groundwater recharge, contribute to the Environmental Water Account (EWA), and improve flexibility for existing projects, such as Shasta Reservoir (NCWA, 2010).

The proposed location of the Sites off-stream storage project is approximately 10 miles west of Maxwell in Antelope Valley. The reservoir would have a storage capacity of 1.9 million acre-feet (possibly larger) and would enhance water management flexibility throughout the state. Sites reservoir can greatly increase reliability of water supplies in the Sacramento Valley and other areas of the state by reducing water diversions on the Sacramento River during critical fish migration periods. In addition, by providing additional storage and operational benefits, Sites reservoir would be a critical component of an integrated water management and water development program for the Sacramento Valley.

Sites reservoir, as an off-stream project, would be filled primarily by pumped diversions from the Sacramento River. Water would be diverted into the reservoir during peak flow periods in winter months (for example, during flood years like 1997 and 1998). To minimize potential impacts of existing diversions on Sacramento River fisheries, Sites would release water back into valley conveyance systems (such as the Glenn Colusa Irrigation District Canal and Tehama Colusa Canal) in exchange for water that would otherwise have been diverted from the Sacramento River. This undiverted summer water could become available for other downstream uses in the Bay-Delta.

SEASONAL AND LONG TERM HYDROLOGY

Climate has a direct impact upon the availability of water in Colusa County. According to the data collected by the Western Regional Climate Center, the average annual precipitation is 15.64 inches per year and average snowfall is 0.5 inches per year (GMP, 2008). The annual average temperature is approximately 61°F, with an average high of 96.6°F in July and 36.1°F in January.

Rainfall in the Sierra Nevada, Coast Range, and Cascade Mountains contribute to surface water flow and groundwater recharge in the Sacramento River Basin. The general direction of surface water flow is toward the center of the valley, flowing south. Water diversions, evaporation, and groundwater recharge reduce flows as the Sacramento River approaches the Delta. Peak flow typically occurs in the months January through March and minimum flows typically occur September through November (GMP, 2008).

SURFACE WATER SUPPLY CONTRACTS

Settlement Contracts

USBR currently contracts with approximately 145 water districts, water purveyors, or private users for water rights to the Sacramento River. The total amount of water under the settlement contracts is approximately 2.2 million acre-feet and cover a total of almost 440,000 acres of land bordering the Sacramento River and its tributaries between Redding and Sacramento. The Settlement Contracts were originally executed in 1964 with a term not to exceed 40 years. New contracts have been executed with approximately 145 existing Sacramento River Settlement Contracts.

The Settlement Contracts include a Base Supply and Project Water. The Base Supply is the amount that reflects the agreed-upon water right of the respective entity. This is generally regarded as pre-

1914 water rights and reflects water that would be available to the respective entities under “natural” conditions.

Project Water represents the amount of water the USBR agrees to provide from its Central Valley Project yield. Altogether, there are 42 contractors in Colusa County, representing an estimated total contract amount of 763,000 acre-feet, with approximately 84 percent Base Supply and 16 percent Project Supply. Approximately eight percent or 60,000 acre-feet is within contracts with entities within the non-organized areas. The balance, or 92 percent of the contract amount, is managed by water purveyors, some of which serve land in both Colusa County and Glenn or Yolo Counties (GMP, 2008). Under the provisions of the Settlement Contracts both the Base Supply and Project Supply could be reduced by 25 percent of the total contract amount.

Long Term Renewal Contracts

In accordance with the Central Valley Project Improvement Act (CVPIA), the USBR negotiated long-term water service contracts in 2007. According to Section 3404c of the CVPIA, Renewal of Existing Long-Term Contracts requires the USBR to renew any existing long-term repayment or water service contract for the delivery of water from the Central Valley Project for a period of 25 years and may renew such contracts for successive periods of up to 25 years each. It is anticipated that as many as 113 CVP (Central Valley Project) water service contracts, located within the Central Valley of California, may be renewed during this negotiation process (GMP, 2008). There are seven water service contracts within the County, including with Colusa County. The total contract amount is 224,586 acre-feet, of which 20,000 acre-feet is with Colusa County. Colusa County has subcontracted the 20,000 acre-feet to seven water purveyors, but retains one acre-foot from each subcontract.

The long-term renewal contracts, unlike the Settlement Contracts, have no specified reduction in delivery; during critically dry or water-short years, the water supply available from the Project will be allocated among the contractors. There is no minimum allocation, thus it is conceivable that no water would be delivered.

Also, the long-term renewal contracts contain a tiered pricing provision. The Base Supply is 80 percent of the total contract amount, and Tier 1 and Tier 2 supplies represent 10 percent each of the remaining contract amount. Each tier has an incrementally higher water cost. The Tier 1 and Tier 2 water, which is available in most years, is not used due to the incremental higher cost of water. To illustrate the use of contract water in relation to the contract amount, in 2003, 137,302 acre-feet was delivered by the USBR, representing 76 percent of the total 179,668 acre-feet of Base Supply (GMP, 2008).

FLOODING

In the northwestern area of the county, one-hundred year floodplains are delineated along Stony Creek northwest of Stonyford and around the East Park Reservoir, Little Stony Creek and Little Indian Creek near Lodoga. Near Delevan and Maxwell, delineated floodplains are identified along several streams, such as Hunters Creek, Funks Creek, Stone Coral Creek and the Glenn-Colusa Canal. Moving south, delineated floodplains coincide with several drainages, such as Lurline Creek,

3.9 HYDROLOGY AND WATER QUALITY

Freshwater Creek and Salt Creek, while floodplains near Arbuckle have been delineated along Cortina Creek, Sand Creek, Whiskey Creek and Elk Creek.

The lands to the east of Interstate 5 are crisscrossed with levees, canals and natural drainages. In addition, the Colusa Basin and Butte Sink frame the Sacramento River near the northeastern corner of the county. The flood control and water delivery facilities within the county's Planning Area are the product of a complex history of agencies, districts, plans, programs, and regulations.

FEMA Flood Zones

FEMA mapping provides important guidance for the County in planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage State and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRMs). The Countywide FEMA Firm Map is shown on Figure 3.9-2. The California Department of Water Resources has recently completed work to map the 200-year floodplain for many areas of California. Areas within the 200-year floodplain are shown in Figure 3.9-3.

Areas that are subject to flooding are indicated by a series of alphabetical symbols, indicating anticipated exposure to flood events:

- **ZONE A:** Subject to 100-year flooding with no base flood elevation determined. Identified as an area that has a one percent chance of being flooded in any given year.
- **ZONE AE:** Subject to 100-year flooding with base flood elevations determined.
- **ZONE AH:** Subject to 100-year flooding with flood depths between one and three feet being areas of ponding with base flood elevations determined.
- **ZONE AO:** Subject to 100-year flooding with flood depths between one and three feet being subject to sheet flow on sloping terrain with average depths determined.
- **"SHADED ZONE X":** Subject to 500-year flooding. Identified as an area that has a 0.2 percent chance of being flooded in a given year.
- **ZONE D:** Areas where flood hazards are yet to be determined.

Approximately one-quarter (25 percent) of the county is located within an area with an "A" prefix on the corresponding FIRM. Slightly more than 11 percent of the county is located within FIRM flood hazard areas or areas in which flood hazards have yet to be determined (Zone D). Nearly 57 percent of the county is located in areas of low flood hazards (Zone X).

TABLE 3.9-3: FEMA FLOOD ZONE SURFACE AREAS IN COLUSA COUNTY

Zone	Acres	% of County
0.2%	56,477	7.6%
A	162,928	22%
AE	13,533	1.8%
AH	1,060	0.14%
AO	1,389	0.2%
X	420,261	56.7%
D	85,543	11.5%

The FIRM panels identified by FEMA within Colusa County bear the 06011C prefix. The Colusa County FIRM data have an effective date of May 15, 2003 (not including revisions and amendments). The Map Description that accompanies the FIRM panels is *Colusa County Uninc & Inc Area*.

Per Senate Bill 5 (2007), DWR has produced Best Available Maps identifying the 100-year and 500-year floodplains within the Sacramento and San Joaquin Valleys. The Preliminary Best Available Maps for the County of Colusa were produced in August of 2008. The maps use letters to identify rows and numbers to identify columns, which divide each county into alphanumeric regions based on a Cartesian plane. Colusa County is divided into 21 alphanumeric regions comprised of Rows A through E and Columns 1 through 5. Thus, Panel A1 covers the most northwestern portion of the county while Panel E5 covers the most southeastern portion.

CVFPB Floodways

The CVFPB identifies the Colusa Drain as a designated floodway. The Colusa Drain Floodway bisects the county longitudinally, generally paralleling Interstate 5 to the west and SR 45 to the east. The Floodway traverses the eastern portions of the Delevan and Colusa National Wildlife Refuges.

Per the CVFPB, as a Designated Floodway, the Colusa Drain is considered to be the area that is “reasonably required providing for the passage of a design flood.” Uses within the Colusa Drain Floodway are regulated by the provisions of CCR Title 23, Article 5, §107.

Central Valley Project

The following facilities, constructed under the Central Valley Project and under the jurisdiction of the Bureau of Reclamation, are located within Colusa County:

TABLE 3.9-4: CENTRAL VALLEY PROJECT FACILITIES

Dams	Canals	Diversions
East Park Dam	Tehama-Colusa Canal	Rainbow Diversion Dam
Funks Dam	East Park Feed Canal	

Dams

Five dams which retain water from tributaries of the Sacramento River could cause damage in Colusa County if their dams were to fail: Lake Oroville, Lake Shasta, Whiskeytown Lake, Black Butte Lake and East Park Reservoir. In the event of a major dam failure, much of eastern Colusa County could become inundated. A major earthquake centered close to a dam would be the most likely cause of failure.

Per DWR publications *Dams Owned and Operated by a Federal Agency* and *Dams within the Jurisdiction of the State of California*, the following dams are located within Colusa County:

TABLE 3.9-5: DAMS OPERATED BY A FEDERAL AGENCY

Dam Name	CA Number	National ID
East Park	--	CA10145
Funks	--	CA10245
Upper Letts	--	CA10302

TABLE 3.9-6: DAMS WITHIN THE JURISDICTION OF THE STATE OF CALIFORNIA

Name	CA Number	Federal ID
Rancho Rubini	361-000	CA00555
York Hill	360-000	CA00554

Dam Inundation maps have been required in California since 1972, following the 1971 San Fernando Earthquake and near failure of the Lower Van Norman Dam. Inundation maps show areas that lie within the potential dam failure inundation zone, as shown in Figure 3.9-4.

Lake Oroville, which is located in Butte County, would represent the most immediate threat to Colusa County in the event of a dam failure, as flood waters could reach the County within eight hours. Lake Shasta, in Shasta County, could cause the most extensive inundation, reaching as far as Maxwell and College City in a period of 42 hours. Inundation from Whiskeytown Lake, located in Trinity County, would take over three days to reach Colusa County. Failure of the dam of Black Butte Lake, which is on the border of Glenn and Tehama Counties, could result in some inundation within a period of about 35 hours. The inundation from a failure of this dam would be less extensive than if the other above-referenced dams were to fail.

Failure of the dam at East Park Reservoir could cause minor inundation at the reservoir's outlet. The flood waters would flow into Glenn County; thus, its failure would not likely impact areas of Colusa County. In Glenn County, the flooding could extend up to one-quarter mile on either side of Stony Creek at its widest point. The water could cause an overflow of Stony Gorge Reservoir, which is located on Stony Creek. Black Butte Reservoir would retain the excess inundation.

DWR Levee Maintenance Areas

In the Central Valley, state flood control levees are typically maintained under one of three circumstances:

- Local agencies maintain more than 1,500 miles of levees in the Central Valley
- DWR maintains specific levee sections described in the Water Code (§8361)
- DWR maintains levees where no local agencies can carry out the maintenance

The latter of these circumstances results in the formation of Maintenance Areas. Two maintenance areas are located within Colusa County along the Sacramento River. Maintenance Area 1 (MA1), which extends from Colusa County's northern boundary south towards the City of Colusa, traverses approximately 17 linear miles of the county. Further south, Maintenance Area 12 (MA12) traverses approximately 12 linear miles of the county.

Levee maintaining agencies are responsible for natural disaster emergency preparations, including training and stockpiling of flood fight supplies. Cities and counties are available to assist with flood fighting if the levee maintaining agency exhausts and cannot obtain necessary materials to continue the flood fight.

During severe storms or other potential flooding conditions, the DWR Chief of Flood Operations is responsible for declaring a flood alert. When a flood alert warning is issued, the Flood Operations Center is activated in accordance with the Standardized Emergency Management System (SEMS). The DWR can upon request, provide technical flood fighting assistance to levee maintaining agencies.

WATER QUALITY

Stormwater Runoff

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water streams.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminants in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban storm water runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980's. However, since then, the Federal Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now

affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

Impaired Water Bodies

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish Water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

Five watersheds within Colusa County have Section 303(d) listed impaired water bodies. The impaired water bodies are located within the Butte Basin, Glenn Colusa, Sycamore-Sutter, East Blue Ridge, and Bear Creek hydrologic areas. These hydrologic areas extend beyond the county boundary so not all impaired water body segments are located within Colusa County. The pollution source is predominantly agricultural and crop related, although mercury, and resource extraction is also a pollution source. There are a few pollution sources that are not currently known.

Seasonal and Long Term Water Quality

Under the USGS National Water Quality Assessment Program, the USGS conducted an intensive study of the Sacramento River Basin and collected data between 1995 and 1998. Through the sampling process, indicator streams were determined based upon the characterization that they drain small to intermediate sized watersheds with relatively homogeneous land use and geology. The Colusa Basin Drain basin is located entirely in the Sacramento Valley and was chosen as an indicator stream to determine the impacts of agriculture on stream-water quality (GMP, 2008). At the indicator water quality station, Colusa Basin Drain at Road 99E near Knights Landing, it was determined that pH levels were generally on the higher end, with declining suspended sediment concentrations over the two-year sampling period. The higher concentrations of mercury correlate with suspended sediment because much of the load of total mercury is transported with the suspended material.

The findings of the USGS study also indicated that the water of the Sacramento River and its major tributaries is generally of good quality; the amount of dissolved solids in the Sacramento River and its major tributaries (Yuba, Feather, and American rivers) was low at all of the sampled locations. Higher median concentrations of dissolved solids occurred at agricultural sites such as the Sacramento Slough and Colusa Basin Drain, but those are diluted upon mixing with Sacramento

River water (GMP, 2008). Nutrient concentrations such as nitrate also were low throughout the Sacramento River Basin (GMP, 2008), and drinking-water standards for nitrate were not exceeded during the course of this study. The concentrations of molinate and other pesticides (used in rice farming) measured during this study in the Colusa Basin Drain or in the Sacramento River, represent a significant improvement over concentrations measured in previous years (GMP, 2008).

GROUNDWATER BASINS

There are seven groundwater basins within Colusa County: the Stonyford Town Area, Bear Valley, Little Indian Valley, Funks Creek, Antelope Valley, Blanchard Valley, and Sacramento Valley Groundwater Basins. Of these, all except the Sacramento Valley Groundwater Basin are small (less than 15 square miles) isolated basins located in the Coast Ranges in the central to western portions of the County. These small basins have not been divided into subbasins. The Stonyford Town Area and Funks Creek Groundwater Basins also extend into Glenn County.

The Sacramento Valley Groundwater Basin, in contrast to the smaller basins described above, covers over 5,900 square miles and 10 counties, and has been divided into 18 subbasins. The California Department of Water Resources defines the following:

“A groundwater basin is defined as an alluvial aquifer or a stacked series of alluvial aquifers with reasonably well-defined features that significantly impede groundwater flow such as rock or sediments with very low permeability or a geologic structure such as a fault.”

“A subbasin is created by dividing a groundwater basin into smaller units using geologic and hydrologic barriers or, more commonly, institutional boundaries. These subbasins are created for the purpose of collecting and analyzing data, managing water resources, and managing adjudicated basins.”

Colusa County overlies portions of two subbasins of the Sacramento Valley Groundwater Basin: the Colusa and West Butte Subbasins. The Colusa Subbasin underlies the entire valley portion of the County west of the Sacramento River, and also extends into Yolo, Glenn, and Tehama Counties. The West Butte Subbasin underlies the portion of the County east of the Sacramento River, and also extends into Glenn and Butte Counties. Groundwater basins in Colusa County are shown in Figure 3.9-5.

Geology

Overview of Groundwater and Geology. Groundwater is water that is underground and below the water table, as opposed to surface water, which flows across the ground surface. There are three main types of subsurface geology where groundwater can exist:

- Hard rock – Groundwater can be present in cracks or fractures in the rocks.
- Underground caverns – Groundwater can fill these underground voids.
- Porous sediments – Groundwater can fill the pore spaces between grains of sand and gravel.

3.9 HYDROLOGY AND WATER QUALITY

In Colusa County, groundwater can be found in both hard rock and porous sediments. In the mountainous portions of the County, groundwater exists primarily in hard rock aquifers; in the valley portions of the County, groundwater exists primarily in porous sediments, or alluvial aquifers.

In the western portion of the County, the surface and subsurface are made up of igneous and metasedimentary rocks. In these areas, groundwater is present in the cracks and fractures in the rocks. In order for groundwater in this material to be replenished after it is removed by pumping, the fractures must receive recharge from precipitation or a renewable water source such as a river or stream, which must have an available supply of water to recharge the fractures. The fractures in hard rock can be irregular and disconnected, which can explain why two wells in a hard-rock setting can be very close together, but may have very different yields and water quality. Additionally, the groundwater available to supply and recharge wells in hard rock aquifers can vary significantly with seasonal and year-to-year variations in rainfall.

In the central-western portion of the County, the surface and subsurface are made up of marine sediments. Marine sediments are not typically as hard as the igneous and metasedimentary rocks, but function much like hard rock aquifers. The marine sediments were deposited under a salt-water environment, so water quality can be poor and often deteriorates with depth. Groundwater aquifers in marine sediments can be irregular and disconnected so nearby wells can have very different yields and water quality.

In the valley portions of the County, both in the small valleys in the Coast Ranges and in the Sacramento Valley, the subsurface consists of layers of gravel, sand, clay, and in some cases volcanic ash. Groundwater is present in the pore spaces between the particles that make up the alluvial aquifers. The characteristics of different aquifers, as well as the zones within each aquifer, are related to the materials that comprise the aquifer (sands, gravels, clays, etc.). Within a single aquifer zone, nearby wells with similar construction can have very similar yields and water quality. It should be noted that many of the geologic formations that contain alluvial aquifers are continuous units which extend to adjacent counties.

Smaller valleys often contain a very limited amount of sediment and thus have less capacity to store groundwater. For this reason, changes in the balance of recharge and pumping can quickly cause significant changes in groundwater conditions in small valleys. It is possible for small valleys to experience a significant decrease in water level during a single year if pumping exceeds recharge. In contrast, the larger storage capacity in larger valleys can in many cases accommodate fluctuations in the recharge/pumping balance over a number of years, with smaller variations in water levels.

It is difficult to characterize groundwater in the igneous and metasedimentary rocks and marine sediments over large areas. Groundwater in these areas is generally limited, and data on water levels and water quality have not been collected. Additionally, the nature of hard rock aquifers makes them difficult to study. Groundwater is not continuous over large areas, so data from one area may be completely unrelated to data in another area. In the small alluvial valleys in the Coast Ranges, there is very limited data available to characterize their groundwater systems; however, if

data were collected and analyzed, these valleys could likely be well-characterized because groundwater is probably continuous within these valleys. Due to the large amount of data which has been recorded and studied regarding the Sacramento Valley, it is generally understood that groundwater is continuous within specific aquifer zones (although discontinuous between different aquifer zones) over large areas within the Sacramento Valley.

Status of Understanding of Regional and Local Geology. The geology of the Sacramento Valley has been studied for at least 95 years, and much has been learned over this time. However, there are still many areas of active study and debate. In Colusa County, areas that are not well-understood include:

- The nature and extent (location and depth) of the deposits that eroded from the Sutter Buttes.
- The interaction between the Coast Range-sourced Tehama Formation and analogous Sierra Nevada-sourced deposits, and where this interaction occurs.
- The possible existence of subsurface barriers to groundwater flow within the County.
- The nature and extent of different aquifer units within the Tehama Formation.

Regional Geology and Structure. The Sacramento Valley Groundwater Basin acts as a trough that is filled with layers of different sediments. The deepest portions of the Basin generally consist of marine sedimentary rocks, ranging in age from Late Jurassic to early Miocene. These marine units are overlain by younger alluvial and locally prominent volcanic rocks of early Miocene to Holocene age. Within the Basin, these deposits are disrupted by deformational stresses derived from east-west compressional forces associated with regional uplift along the western margin of the valley and extensional forces within the Basin and Range Provenance. Over time, these forces have applied great stresses and strain on valley deposits, creating complex and diversely-oriented fold and fault structures.

Recent Alluvial Deposits. Recent alluvial deposits include stream channel deposits, basin deposits, the Modesto Formation, and the Riverbank Formation. These deposits were created by moving stream channels that meandered, cutting through existing sediments within the valley and creating an interconnected relationship. As such, it is likely that many channels or pathways exist that allow groundwater to move among all of the recent alluvial deposits. There is limited data in well logs to allow for differentiation among the different recent alluvial deposits.

Stream channel deposits are Holocene in age and were deposited between 11,000 years ago and present day. The stream channel deposits occur along the current and ancestral paths of streams and rivers in Colusa County. Where present, the stream channel deposits extend from ground surface to a depth of one to 200 feet below ground surface (bgs). The stream channel deposits consist of unconsolidated gravels, sand, silt, and clay, derived from the erosion and reworking of the Quaternary stream terrace deposits (Modesto and Riverbank Formations) and the Tehama Formation. This unit is moderately to highly permeable, but because of its shallow depth and limited thickness, it possesses limited water-bearing capacity.

3.9 HYDROLOGY AND WATER QUALITY

Basin deposits are Holocene in age and, like stream channel deposits, were deposited between 11,000 years ago and present day. Basin deposits occur where sediment-laden floodwaters breached natural stream and river levees and spread across lower-lying topography. Where present, the basin deposits extend from ground surface to a depth of 1 to 200 feet bgs. The basin deposits consist mainly of silt and clays. These units have low permeability and generally yield small quantities of water to wells.

The Modesto Formation is Pleistocene in age and was deposited between 2 million and 500,000 years ago. The Modesto Formation is a stream terrace deposit consisting of gravels, sands, and clays derived from the reworking and deposition of the Riverbank Formation. The Modesto Formation was probably deposited by the same stream and river systems that flow today, because it generally borders existing channels (Blake et. al., 1999). Where present, the Modesto Formation begins between ground surface and 100 feet bgs and extends to a depth of approximately 200 feet bgs. The units of the Modesto Formation are moderately to highly permeable and can yield limited quantities of water to wells.

The Riverbank Formation is Pleistocene in age and was deposited between 2 million and 500,000 years ago. The Riverbank Formation consists of pebbles and small cobble gravels, inter-layered with reddish clay, sands, and silts. Like the Modesto Formation, the Riverbank Formation is a stream terrace deposit; however, the Riverbank Formation is older than the Modesto Formation. The Riverbank Formation has two units. The lower unit of the Riverbank Formation is lithologically similar to the Red Bluff Formation (which occurs further north in the Sacramento Valley) and has a similar brick-red color. It occurs on the higher of two terraces that have been cut and filled into the surface of the Red Bluff and/or Tehama Formations. The upper unit of the Riverbank Formation consists of extensive flat stream terraces along major creeks in the valley (Helley and Harwood, 1985). The Riverbank Formation begins between ground surface and 150 feet bgs and extends to a depth of approximately 200 feet bgs. The Riverbank Formation is moderately to highly permeable and can yield moderate quantities of water to wells.

Sutter Buttes Alluvium. The Sutter Buttes Alluvium is an alluvial fan deposit observed in the subsurface, which may range in thickness up to 600 feet thick (DWR, 2000). These fan deposits consist largely of gravels, sands, silts, and clays, and may extend up to 15 miles north of the Sutter Buttes and west beyond the Sacramento River. Certain zones within this unit yield large quantities of water (DWR, 2004).

Tehama Formation. The Tehama Formation is Pliocene in age and was deposited between four million and one million years ago. The Tehama Formation was deposited by coalescing alluvial fan deposits from the Coast Ranges, and consists of interbraided gravel, sand, silt, and clay. The Tehama Formation outcrops in the low foothills of the Coast Ranges at the western edge of the Sacramento Valley. Throughout the flat areas of the western Sacramento Valley, the Tehama Formation is overlain by one or more of the younger deposits described above. Toward the center of the Sacramento Valley, near the Sacramento River, the Tehama Formation interfingers with the Sierra Nevada - and Cascade Mountains - sourced Tuscan and Laguna Formations. Within the Tehama Formation, the gravel, sand, and silt materials are separated into distinct zones by impermeable and semipermeable layers of clay and other fine-grained materials. The gravel and

sand zones are generally less than 50 feet thick, and may lack lateral continuity. Although the Tehama Formation is the principal water-bearing formation in the western half of the Sacramento Valley, the units of the Tehama Formation have not been studied in detail in Colusa County. The Tehama Formation begins between ground surface (in the outcrop areas) to 200 feet bgs and becomes thicker toward the center of the Sacramento Valley, extending to a depth of up to 1700 feet bgs. The units of the Tehama Formation are moderately permeable, but because of its extent and thickness, the Tehama Formation can yield moderate to high volumes of water to wells.

Tuscan Formation. The Tuscan Formation has been the subject of much interest in recent years, but records from gas wells indicate that it is likely only present in the very northeastern corner of Colusa County and consequently is not a major water source for the County.

Groundwater Levels

The California Department of Water Resources (DWR) maintains a publicly available on-line database, which includes groundwater level data for the County. DWR's Water Data Library Website can be found at <http://www.wdl.water.ca.gov/>. Wells monitored by DWR and cooperating agencies are identified by the State Well Numbering System. Data can be obtained for specific wells by means of a map interface, by groundwater basin, or by the assigned State Well Numbering System.

The 77-year period of record for water level measurements in Colusa County depicts a groundwater system that has experienced changing conditions over time. In areas of high groundwater use and differing water conditions, water levels fluctuate, sometimes dramatically, in response to changes in groundwater use and hydrologic conditions. In areas of lower groundwater use and more stable water conditions, water levels have not exhibited significant fluctuations over times. In areas where agricultural water needs are met with surface water, wells generally exhibit more stable conditions.

Groundwater levels decreased during the 1975 to 1977 drought then increased slightly until 1982. At that point, surface water from the Tehama Colusa Canal became available, and groundwater levels increased quickly from 1982 through 1986. Seasonal water level fluctuations decreased during this period from about 20 feet to less than 10 feet, indicating a reduction in groundwater pumping. Groundwater levels declined from 1988 through 1994, when deliveries from the TCC were only 25-65 percent of normal, and have generally increased from 1994 through present. Groundwater levels in this well are currently about 50 feet higher than they were in 1970.

The direction of spring groundwater flow within the County has not changed from 1977 to 2006. It generally follows the topography of the County, flowing from the Coast Ranges toward the Sacramento Valley (west to east), and north to south within the Valley. Spring groundwater elevations were about five to 30 feet higher in 2006 than in 1977, depending upon the area.

Data from the two nested monitoring wells at the extensometer sites in the County shows that for the four years of available data, the spring groundwater elevations in the monitored aquifer zones have been very similar, within three feet of one another.

Groundwater Quality

DWR maintains a database for groundwater quality that can be obtained from the Water Data Library for specific well sites within Colusa County, identified by the assigned State Well Numbering System. Data can also be obtained by groupings of wells.

For the purpose of evaluating overall water quality, there are multiple approaches that can be used. The most common are specific conductance or total dissolved solids, which are indicators of the total concentration of minerals in the water. Lower specific conductance or concentrations of total dissolved solids generally indicate better water quality, while higher specific conductance or concentrations of total dissolved solids generally indicate poorer water quality. For Colusa County, specific conductance was selected as an indicator of overall water quality, because there were more records for specific conductance than for total dissolved solids.

Specific conductance within the County is generally acceptable for agricultural and domestic use, with the exception of two areas. In the marine sediments in the foothills of the Coast Ranges, specific conductance is marginally acceptable for domestic use and can reduce the yield of a number of crops grown in the County. An area of anomalously high specific conductance is located north of SR 20 between Colusa and Williams. Specific conductance in this area is generally unacceptable for domestic use and can reduce the yield of many crops grown in the County.

Boron concentrations in the County are generally acceptable except for an area southwest of Arbuckle, where concentrations of boron can be problematic for several crops grown in the County. Nitrate concentrations typically meet drinking water standards. Where present, elevated concentrations of nitrate are likely a result of inadequate sanitary seals or point sources (i.e. septic systems). Manganese concentrations are elevated in the eastern portion of the County, at levels that may cause aesthetic problems (odor or staining) for domestic and municipal uses, but generally below levels that could represent a health risk.

Surface Water Flow and Quality

Historic data for Colusa County are inadequate to evaluate the changes in surface flow or quality that directly affect groundwater levels or quality, or are caused by groundwater pumping. To make these determinations, it is necessary to have clustered monitoring wells located immediately adjacent to a surface water body, with a stage gauge located in the immediate vicinity. Even with these grouped monitoring locations (which do not currently exist in Colusa County), the flow in a stream or river may be so great that any interactions among groundwater and surface water are smaller than the measurement error.

GROUNDWATER INFRASTRUCTURE

Wells

According to DWR records dating to 1912, Well Completion Reports have been filed for 2,902 wells in Colusa County, and records of well destruction have been filed for 44 wells. Well Completion Reports are not always filed with DWR, even though they are now required, so these figures likely underrepresent the actual totals for the County. Of the wells for which Well Completion Reports

have been filed, 1,211 are domestic wells, 767 are irrigation wells, 485 have unknown or other uses, 152 are test wells, 149 are monitoring wells, 50 are stock-watering wells, 48 are municipal wells, and 40 are industrial wells.

Domestic wells were constructed at a rate of approximately 16 per year from 1950 through 1989, but have been constructed at a rate of approximately 31 per year since then, likely as a result of the increasing population in the County. Irrigation wells tend to be constructed more frequently during drought periods, in the mid- 1970's and early 1990's. On average, 13 irrigation wells are constructed per year; on average, 20 to 30 wells per year are constructed during droughts. Municipal well construction has been sporadic and has been one to four per year.

The average depth of domestic wells has fluctuated since the 1930's, but has generally been about 200 feet deep. The average depth of irrigation wells has fluctuated significantly, but has been about 200 feet deeper than the average depth of domestic wells in any give year, or an average of about 400 feet deep. Municipal well depths are inconsistent and vary widely, from about 150 to 850 feet deep; combined with the small number constructed annually, calculation of an average depth of new municipal wells would not be meaningful.

DOMESTIC WATER SYSTEMS

Arbuckle Public Utility District

The Arbuckle Public Utility District provides domestic water service to 820 connections, or a population of approximately 2,500. Arbuckle has four groundwater wells, but generally only runs one or two at a time. The most recent well was drilled in 2008. The average amount of water pumped each day is approximately one MG, with a yearly total of approximately 350 MG. Total pumping capacity is 3.6 MGD. Most of the original pipes have been replaced with AC pipes, though some small ductile iron pipes remain in use. The distribution system consists of mostly 6-inch, 8-inch, and 10-inch pipes. Water is treated with chlorine at the wellheads as it is pumped out of the ground. There are no major problems with the system and there are no planned upgrades or changes. The most recent change in the system was the addition of the new well in 2008 (Scheimer, 2009).

The current system has the capacity to pump an additional 2.6 MGD above existing pumping levels. This additional pumping capacity is adequate to serve approximately 2,132 additional connections without making any significant upgrades to the system. The existing water distribution infrastructure is in good working order (Scheimer, 2009).

Colusa County Waterworks District #1

The Colusa County Waterworks District #1 provides potable water to 100 residential connections, five commercial connections, and one agricultural connection in the community of Grimes. The District has one primary well 223 feet deep, and one back-up well. The District provides approximately 36 MG of water annually. July is the peak flow month with five MG. The water supply infrastructure in the District is comprised of pipes ranging in size from 2-inch to 8-inch diameter. While the 2-inch pipes are generally PVC or metal, the larger pipes are generally AC.

Water is treated with sodium hypochlorite for Coliform bacteria. The Colusa County Waterworks District #1 also provides water to 10 fire hydrants as part of an agreement with the Sacramento River Fire Protection District. However, this water is not sufficient to maintain fire flows and the Sacramento River Fire Protection District must also rely on water tenders to help achieve adequate supply.

Maxwell Public Utilities District

The Maxwell Public Utilities District receives all water for municipal purposes from groundwater sources. The District pumps with a total of three wells, Well 1, Well 4 and Well 5 (Well 5 came online in 1997). The District has an elevated steel storage tank with a 100,000-gallon storage capacity.

The District's three wells have the following capacities (1998 Department of Health Services Annual Inspection):

- Well 1 @ 250 GPM
- Well 4 @ 550 GPM (has limitations for drinking water)
- Well 5 @ 425 GPM

Total: 1,225 GPM maximum pumping capacity although the District cannot run Well 4 which is 550 GPM capacity in series with running Well 5.

The District's sources produce 1,225 GPM (of which 550 GPM meets drinking water standards but has an undesirable odor), well above the District's annual, monthly and peak day demand of 119.17 MG, 17.05 MG, and .64 MGD respectively. The District serves 402 connections (residential, commercial, and agricultural) for a total service population of approximately 1,000 people. Peak water usage is 1,384 GPD per Equivalent Dwelling Unit (GPD/EDU). Maximum daily pumping capacity is 2,016,000 GPD compared to an average daily pumping demand of 326,493 GPD. Demand is well below the District's source capacity.

The District's distribution system is set in a grid pattern with approximately seven dead-ends (1998 Department of Health Services Annual Inspection Report). The District's water system was upgraded in 1983. The system is composed entirely of C-900 PVC pipe ranging from 4-inch up to 8-inch installed (C-900 PVC) with cast-iron valves, new hydrants, and metering equipment. The District has a main pressure zone with approximately 52 to 54 pounds per square inch (psi) at all times. The District has four backflow prevention devices on the system. The distribution system is properly maintained and is in good working order.

In order to meet the increased demand that would be generated through development of the residential parcels identified in the existing 1989 General Plan land use map, the District would need to add one or two new wells to the system. Additionally, new development sites would need to extend conveyance infrastructure to the site. The District has already begun engineering work and studies to establish a new well (Well #6). It is feasible that this new well could be online and operational within 1-2 years.

Princeton Water Works District

The Princeton Water Works District provides water service to approximately 110 residential and commercial customers. The District extracts groundwater from two different wells, drilled in 1984. The South Well is the principal well (utilized 90 percent of the time) and is equipped with a 20-horse power motor. This well was drilled to 307 feet below ground surface (bgs), with a 12-inch casing and a pumping capacity of 200 GPM. The North Well is predominantly used as an emergency well when the South Well is at or near capacity. The North Well has a pumping capacity of 120 GPM. Each well is equipped with an 1,800-gallon hydro-pneumatic pressure storage tank and auto-chlorination system (LAFCO, 2007).

The District pumps 50,000 GPD in winter months and between 250,000 and 280,000 GPD in the summer months. The District is able to meet peak water usage of up to 300,000 GPD during high demand periods. The average peak water usage is 2,545 GPD (LAFCO, 2007).

The initial distribution system infrastructure consisted of 4-inch welded Steel Pipe. The entire distribution system was reconstructed in 1984 with a combination of 4-inch (3,320 feet), 6-inch (6,050 feet) and 8-inch (2,100 feet) AC pipe. The distribution system is currently in good working order (LAFCO, 2007). Each well has a 1600-gallon pressure tank and chlorination system for a total combined storage of 3,200 gallons. The District's water pressure usually fluctuates between 45 to 65 psi (LAFCO, 2007).

The District has adequate water capacity from two wells to serve the 110 existing connections (residential, schools and commercial) with average demands of 50,000 to 60,000 GPD in winter months, and 250,000 to 280,000 GPD in the summer months. According to the District, it can meet peak demands of up to 300,000 GPD, which is below the District's capacity of 320 GPM. At 320 GPM, at peak flows, the District can pump up to 460,800 gallons per day (LAFCO, 2007).

With respect to the number of additional connections, during peak summer usage days, a remaining pumping capacity of 180,800 GPD ($460,800 - 280,000 = 180,800$) could support up to 71 more water connections (assuming current water usage of 2545 GPD, which is based on a peak usage of 280,000 divided by the number of connections being 110) (LAFCO, 2007). If more than 71 additional connections were required, the District would need to explore the possibility of adding new wells to the system. Groundwater levels in the area would support additional pumping from new wells.

Stonyford Water District

The Stonyford Water District is a County Service Area (CSA #2), formed in 1983, and serves the community of Stonyford. CSA #2 was formed in response to water supply shortages and concerns over groundwater contamination in the existing groundwater system. The water system was upgraded in 2007-2008 to include a \$1.1 million water infiltration system. There are approximately 60 municipal hookups on the Stonyford system, 55 of which are private residences and five are allocated to the U.S. Forest Service. Water is drawn from two local wells, one of which serves as a backup to the primary well. The main well has a pumping capacity of 20 GPM, and both the main well and the backup well are in generally good condition. A 75,000 gallon containment tank is

located adjacent to the main well, and a 300,000 gallon storage tank is located south of Stonyford, near the landfill. Water from the 300,000 gallon storage tank is conveyed from the tank to the municipal distribution system via a system of 8-inch and 10-inch lines that feed into the 3-inch and 4-inch lines that connect directly to users. The larger distribution lines are relatively new and are in good condition, however, the smaller municipal conveyance lines are aging and in need of repair and upgrade.

Although water for the Stonyford system is pumped from the ground via wells, it has been determined by DWR and the federal government that the water pumped from the ground is hydrogeologically connected to Stony Creek, and is therefore, classified as a surface water source. The Stonyford water system is allocated up to 40 acre-feet/year of water from this source. The allocation between October 1 and May 31 is 30 acre-feet and the allocation between June 1 and September 31 is 10 acre-feet. The system has historically exceeded this allocation. However, once a tiered pricing system for water use was implemented there have not been exceedences of this allocation. The allocation of water to the Stonyford system is administered by the Federal Water Master, based in Orland, CA. New municipal hookups and the drilling of new wells require approval from the Federal Water Master and a review committee, and applications are reviewed on a case-by-case basis. In general, the current hookups use the majority of the annual water allocation, and growth in the area is constrained by the 40 acre-feet/year annual allocation (Hackney, 2009).

Century Ranch

The Century Ranch Subdivision, developed in the mid-1960's, is located in northwest Colusa County, south of the East Park Reservoir. Groundwater supplies in this portion of the County are very limited. Wells drilled in this area typically encounter hard rock formations without significant water storage or availability. Certain wells at Century Ranch are placed in, or near, the creek bed of Little Stony Creek, and collect underflow from the Creek.

From the outset, water source capacity has been a critical problem for the Century Ranch Subdivision. Water shortages during peak summer and early fall demand periods have been an annual concern, and have necessitated severe water restrictions and water conservation mandates in dry years (i.e., a ban on all outdoor water use during these critical months). Despite these concerns, the already critical source capacity situation worsened through the early 1990's as the Century Water Company continued to add new service connections. In response to the Company's noncompliance with California Health and Safety Code requirements to provide a reliable and adequate supply of potable drinking water, the California Department of Health Services issued a compliance order in 1994, which imposed a service connection moratorium on the Century Ranch Water Company and its successors and assignees.

In 1996 Colusa County acquired ownership of the Century Ranch water system, and designated it County Service Area No. 1 (CSA #1). The County has taken steps to try to solve the critical water shortage problems faced by this water system, however, these actions have been largely unsuccessful. In 1998, with funding from the State's Safe Drinking Water Bond Law program, certain improvements were made to the Century Ranch water system. These improvements included a new 250,000 gallon bolted steel tank and the construction of Well No. 7, which is

equipped with a 50 GPM pump. However, like other wells at Century Ranch, its ability to provide adequate water during the late summer and early fall months is very limited, and it has added no significant source capacity to the water system. The County has a 20-year contract with the USBR for approximately 90 afy, but only uses approximately 24 afy due to the lack of adequate available supply for the area.

In the summer months of 2001, with funding assistance from the California Emergency Clean Water Grant program, the County added an 80 GPM bag and cartridge system and made disinfection improvements to allow the use of surface water, collected as underflow from Little Stony Creek. While the use of this surface water has provided an additional approved source for the Century Ranch water system, the ability to capture underflow decreases significantly in late summer and early fall. In very dry years the underflow has reportedly decreased to the point that no significant quantities of water can be taken from Little Stony Creek. During drought condition years both the underflow in Little Stony Creek and the groundwater supplies are known to approach failure simultaneously. Thus, while the operation of the surface water treatment facilities does allow reduced usage of well sources, its net effect on the overall supply capacity is insufficient to ensure an adequate, reliable water supply. New residential units cannot be constructed in Century Ranch until new, long-term, and reliable supplies of water are found to serve the area.

City of Colusa

The City of Colusa provides potable water within the city limits, as well as the following areas outside of its boundaries: the Lurline Avenue area, the area east of Bridge Street, and restrooms at Moon Bend Road. The Walnut Ranch development, which is located in the City's SOI, currently receives water from the Del Oro Water Company. However, the analysis in the City's 2009 Water Master Plan assumes that this area will eventually receive treated water from the City. As described in the City's 2009 Water Master Plan (Eco:Logic, 2009), the City's well network has been gradually expanded over the years and now consists of five wells and a distribution system. The City relies on three of its wells to meet day-to-day demands and utilizes the two other wells as back-up supply. Two elevated tanks provide 0.25 MG of storage which supplements peak demands and maintains system pressure.

As of 2006, there were 2,126 active water service connections within the City. Of these connections, 1,914 were for residential customers, 195 were for commercial/institutional customers, and the remainder for industrial and other users. All water used by the City comes from five wells. The depth of these wells exceeds 200 feet bgs, and each well is encased with a deep-water sanitary seal for a minimum of 50 feet to prevent infiltration. Water is treated with chlorine after it is pumped out of the ground and before it is conveyed to users.

The current well capacity with all wells operating simultaneously is approximately 7.0 MGD; however, the reliable well capacity is 4.9 MGD which is based on the largest well being out of service. The storage tanks provide about 1.2 MGD, and increase the total reliable system capacity to 6.1 MGD. As described in the 2009 Water Master Plan, the current peak hour demand for existing customers is approximately 5.8 MGD. The peak hour demand of 5.8 MGD can be reliably

3.9 HYDROLOGY AND WATER QUALITY

supplied with the capacity from the storage tank and four wells (6.1 MGD), with the largest well out of service.

The 2009 Water Master Plan includes an analysis of water demand associated with full buildout of the City's SOI. The Water Master Plan estimates that full buildout of the SOI will require an average of 6.8 MGD and a maximum day demand of 18.6 MGD.

Water supply, treatment, storage, pumping and distribution improvements have been identified in the Water Master Plan to meet future water demands and to correct existing deficiencies within the current system.

Remedies to eliminate existing deficiencies include providing additional source capacity through construction of two new wells with treatment, adding sequestering to Wells 4, 5, and 6 if needed, and eliminating the small diameter pipelines in the downtown area. Improvements to increase system capacity to serve future growth include provision of additional wells with treatment and extension of the distribution system. Additional storage and a booster pump stations may also be necessary depending on the capacity of future wells.

Distribution system improvements were developed to serve future growth. The most prominent feature of the future distribution system expansion is the construction of an outer loop around the City comprised of 12-inch diameter pipelines. The outer loop interconnects with existing pipelines to create further looping within the system, which increases operational flexibility and fire flows. The pipelines have been sized so that future wells or tanks/booster pumps can be anywhere on the perimeter and maintain flows, which will allow flexibility as future improvements are sited.

Future source capacity will be provided from new wells throughout the system. Future wells are expected to provide at least 1,300 GPM, but capacities could be higher. Seven new wells will be needed to serve future growth. If future wells have higher capacity, then fewer wells will be needed. New storage and pumping facilities may be included at some point in the future to reduce the number of new wells and treatment systems needed, but should be delayed until the capacity of new wells is determined. The Colusa Water Master Plan identifies the location of new conveyance infrastructure and well locations that would adequately serve full buildout of the SOI.

The Water Master Plan includes a proposed water serve connection charge for new development within the City's water service area.

In summary, the City of Colusa has adequate water supplies and distribution infrastructure to meet existing demand for potable water. The Water Master Plan includes specific and detailed measures to increase water supplies to meet full buildout of the SOI. The Water Master Plan includes specific measures to amend the current water fee program and increase connection charges in order to fund the identified improvements to meet water demand for full buildout of the SOI. The City's water distribution system has been designed to provide for maximum flexibility regarding the location of new wells and connections to the water distribution system that runs around the perimeter of the City. New residential growth in the SOI would occur in close proximity to existing water conveyance infrastructure. New residential development would be able to connect to the existing distribution system along the boundary of the city limits without the need to construct

significant new conveyance infrastructure. By implementing the improvements identified in the Water Master Plan, the City of Colusa would ensure adequate supplies are available to meet new residential growth within the SOI.

City of Williams

The City of Williams provides water service to 1,245 connections. The majority of these connections are residential. Only eight connections are outside of the city boundaries, in the unincorporated area of Colusa County. In 2008, water usage totaled 2,085,711 gallons. The City of Williams Public Works Department operates and maintains the water system. The system includes five wells, three of which are active while the other two wells are for stand-by only. The total capacity of all five wells totals 3,050 GPM. The system includes one 100,000 gallon water storage tank, but more storage capacity is needed. The average water usage is 13.5 MG per month. Peak usage in the summer is .814 MGD and 20.7 MG per month. Using Well 5 exclusively, the City could pump 1.7 MGD or .9 MG more than the current day usage (LAFCO, 2007). Two additional wells at the Plank Industrial Park can each produce 2000 GPM, equivalent to 5.7 MGD.

The City's water distribution system consists of approximately 69,000 linear feet of 6-inch to 12-inch diameter pipeline. Approximately 15 percent of the distribution system was replaced in 1996, which eliminated undersized and failing pipeline. The existing water distribution system provides sufficient domestic and fire flows to the City. The City continues to upgrade the water distribution system as funding becomes available.

3.9.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that are applicable to the proposed project.

FEDERAL REGULATIONS

Clean Water Act of 1977

The CWA, which amended the WPCA of 1972, sets forth the §404 program to regulate the discharge of dredged and fill material into Waters of the US and the §402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the US. The §401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of federal permits and approvals (including CWA §404, CWA §402, FERC Hydropower and §10 Rivers and Harbors).

Federal Emergency Management Agency (FEMA)

FEMA operates the National Flood Insurance Program (NFIP). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected

from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Flood Control Act

The Flood Control Act (1917) established survey and cost estimate requirements for flood hazards in the Sacramento Valley. All levees and structures constructed per the Act were to be maintained locally but controlled federally. All rights of way necessary for the construction of flood control infrastructure were to be provided to the federal government at no cost.

Federal involvement in the construction of flood control infrastructure, primarily dams and levees, became more pronounced upon passage of the Flood Control Act of 1936.

Flood Disaster Protection Act (FDPA)

The FDPA of 1973 was a response to the shortcomings of the NFIP, which were experienced during the flood season of 1972. The FDPA prohibited federal assistance, including acquisition, construction and financial assistance, within delineated floodplains in non-participating NFIP communities. Furthermore, all federal agencies and/or federally insured and federally regulated lenders must require flood insurance for all acquisitions or developments in designated Special Flood Hazard Areas (SFHAs) in communities that participate in the NFIP.

Improvements, construction and developments within SPHAs are generally subject to the following standards:

- All new construction and substantial improvements of residential buildings must have the lowest floor (including basement) elevated to or above the BFE.
- All new construction and substantial improvements of non-residential buildings must either have the lowest floor (including basement) elevated to or above the BFE or dry-floodproofed to the BFE
- Buildings can be elevated to or above the BFE using fill, or they can be elevated on extended foundation walls or other enclosure walls, on piles, or on columns
- Extended foundation or other enclosure walls must be designed and constructed to withstand hydrostatic pressure and be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. Any enclosed area below the BFE can only be used for the parking of vehicles, building access, or storage.

National Flood Insurance Program (NFIP)

Per the National Flood Insurance Act of 1968, the NFIP has three fundamental purposes: *Better indemnify individuals for flood losses through insurance; Reduce future flood damages through State and community floodplain management regulations; and Reduce Federal expenditures for disaster assistance and flood control.*

While the Act provided for subsidized flood insurance for existing structures, the provision of flood insurance by FEMA became contingent on the adoption of floodplain regulations at the local level.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the EPA Regional Administrator (EPA Region 9). The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti-degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWC.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issues general permits for stormwater runoff from construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Rivers and Harbors Appropriation Act of 1899

One of the country's first environmental laws, this Act established a regulatory program to address activities that could affect navigation in Waters of the United States.

STATE REGULATIONS

California Code of Regulations

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by

regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

California Department of Health Services

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides subsidized funding for water system improvements under the State Revolving Fund (“SRF”) and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects, permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for MTBE and other oxygenates.

California Government Code

The California Government Code requires the incorporation of Central Valley Flood Protection Program (CVFPP) data, policies, and implementation measures into general plan updates within the Central Valley. If necessary, zoning ordinances must be amended to ensure CVFPP consistency. Revised safety elements must include maps of any 200-year flood plains and levee protection zones within the Planning Area. In addition, adopted or amended general plans must be referred to the Central Valley Flood Protection Board and any relevant local agencies for planning areas within the boundaries of the Sacramento and San Joaquin Drainage District. Any land having inadequate flood protection, as determined by FEMA or DWR, must be excluded from land identified as suitable for urban development within the planning area. Within the Central Valley, Lead Agencies are prohibited from entering into development agreements or approving permits, entitlements and subdivision maps for developments within flood hazard zones unless protected by an urban level of flood protection or compliant with FEMA standards.

California Water Code

California’s primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the Regional Water Quality Control Boards (RWQCBs) power to protect water quality, and is the primary vehicle for implementation of California’s responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a Water Quality Control Plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a

RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Central Valley Flood Protection Plan

The Central Valley Flood Protection Plan (CVFPP), which must be prepared by January 1, 2012, will describe a system-wide program of flood protection within areas of the Central Valley that are protected by SPFC facilities. The plan must be sustainable, while providing integrated flood management.

FloodSAFE California

FloodSAFE is a statewide program launched in 2006 by DWR in order to achieve the following goals: reduce the chance of flooding, reduce the consequences of flooding, sustain economic growth, protect and enhance ecosystems, and promote sustainability. Initial funding was provided by Propositions 1E and 84.

FloodSAFE is responsible for the Central Valley Flood Management Planning Program (CVFMP). The CVFMP is intended to integrate and improve flood management within the Central Valley. Three documents, the State Plan of Flood Control, the Flood Control System Status Report and the Central Valley Flood Protection Plan are the responsibility of the CVFMP.

PL84-99 Rehabilitation Assistance

The federal Rehabilitation Assistance Program helps repair levees that are damaged during declared flood emergencies (*PL84-99* is Public Law 84-99 – the federal Flood and Coastal Storm Emergencies Act). The program promotes risk reduction within the Central Valley through evaluating and repairing qualifying levees. Technical support, permitting, rights of way and borrow material are provided by DWR.

Sacramento River Bank Protection Project

As authorized by the Flood Control Act of 1970, the Sacramento River Bank Protection Project (SRBPP) is an ongoing construction and maintenance project. The SRBPP provides protection for existing flood control infrastructure, including levees, of the Sacramento River Flood Control Project. The Sacramento River Flood Control Project consists of approximately 980 miles of levees plus overflow weirs, pumping plants, and bypass channels that protect communities and agricultural lands in the Sacramento Valley and Sacramento–San Joaquin Delta.

Sacramento River Flood Control Project

The Sacramento River Flood Control Project (SRFCP) is actually six, interrelated projects undertaken by the USACE, including reservoirs constructed on major rivers, which constitute the largest flood control system in the state. Project facilities extend from north of Colusa County southward to the Sacramento-San Joaquin Delta, about 230 miles along the Sacramento River corridor. Levees and associated facilities of the SRFCP have been constructed along five rivers, 15 creeks and 13 sloughs. In addition, human-made or human-modified facilities include 6 bypasses and 11 channels.

Sacramento-San Joaquin River Basin Comprehensive Study

The Comprehensive Study, which has been undertaken as a collaborative effort between the US Army Corps of Engineers (USACE) and DWR, released the first interim report in late 2002. The Central Valley Flood Protection Board (formerly the Reclamation Board) will provide the administrative structure of the plan developed per the Comprehensive Study.

Senate Bill (SB) 610 and Assembly Bill (AB) 901

The State Legislature passed SB 610 and AB 901 in 2001. Both measures modified the Urban Water Management Planning Act.

SB 610 requires additional information in an urban water management plan if groundwater is identified as a source of water available to an urban water supplier. It also requires that the plan include a description of all water supply projects and programs that may be undertaken to meet total projected water use. SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water to the project and to request identified public water systems to prepare a specified water supply assessment. The assessment must include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and water received in prior years pursuant to these entitlements, rights and contracts.

AB 901 requires an urban water management plan to include information, to the extent practicable, relating to the quality of existing sources of water available to an urban water supplier over given time periods. AB 901 also requires information on the manner in which water quality affects water management strategies and supply reliability. The bill requires a plan to describe plans to supplement a water source that may not be available at a consistent level of use, to the extent practicable. Additional findings and declarations relating to water quality are required.

Senate Bill (SB) 221

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds Government Code Section 66473.7, establishing detailed requirements for establishing whether a “sufficient water supply” exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring availability of a sufficient water supply. The applicable public water system must provide proof of availability. If there is no public water system, the city or county must undertake the analysis described in Government Code Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

State Plan of Flood Control

The State Plan of Flood Control (SPFC) for the Central Valley will analyze flood management facilities, lands, programs, conditions, and operations and maintenance for all state/federal flood

protection systems within the Central Valley. The SPFC for the Central Valley is anticipated prior to Year 2010.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term “water quality standards,” as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region’s ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

Urban Water Management Planning Act

The Urban Water Management Planning Act has as its objectives the management of urban water demands and the efficient use of urban water. Under its provisions, every urban water supplier is required to prepare and adopt an urban water management plan. An “urban water supplier” is a public or private water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The plan must identify and quantify the existing and planned sources of water available to the supplier, quantify the projected water use for a period of 20 years, and describe the supplier’s water demand management measures. The urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Department of Water Resources must receive a copy of an adopted urban water management plan.

LOCAL REGULATIONS

1989 Colusa County General Plan

The existing (1989) Colusa County General Plan contains multiple policies that seek to protect water quality and hydrologic resources. These policies include requirements to control and treat surface water runoff prior to discharge into surface water bodies, the conservation of water

resources, coordination with state and federal water regulators to monitor water quality, and to protect from floods.

Colusa County Code, Chapter 33: Flood Damage Prevention

It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (a) Protect human life and health;
- (b) Minimize expenditure of public money for costly flood control projects;
- (c) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (d) Minimize prolonged business interruptions;
- (e) Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in areas of special flood hazard;
- (f) Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future blighted areas caused by flood damage,
- (g) Ensure that potential buyers are notified that property is in an area of special flood hazard; and
- (h) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

In order to accomplish its purposes, this chapter includes methods and provisions to:

- (a) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- (d) Control filling, grading, dredging, and other development which may increase flood damage; and
- (b) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (c) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- (e) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

A development permit shall be obtained before any construction or other development begins within any area of special flood hazard established in section 33-3.2. Application for a development permit shall be made on forms furnished by the floodplain administrator and may include, but not be limited to: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevation of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required:

- (a) Proposed elevation in relation to mean sea level, of the lowest floor (including basement) of all structures--in zone A, elevation of highest adjacent grade and proposed elevation of lowest floor of all structures; or
- (b) Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed, if required in subsection 33-5.1(C)(3); and
- (c) All appropriate certifications listed in subsection 33.4.3(d) of this chapter; and
- (d) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

Colusa County Code, Chapter 43: Groundwater Management Ordinance

The Colusa County Groundwater Management Ordinance states that it is essential for the protection of the health, welfare, and safety of the residents of the county, and the public benefit of the state, that groundwater resource of Colusa County be protected from harm resulting from the extraction of groundwater for use on lands outside the county, until such time as needed additional surface water supplies are obtained for use on lands of the county, or over-drafting is alleviated, to the satisfaction of the board. The county seeks to foster prudent water management practices to avoid significant adverse overdraft-related environmental, social, and economic impacts. It is therefore essential for the protection of the county's important groundwater resources that the county require a permit to extract groundwater for use outside the county. This chapter requires a permit for the export of groundwater outside the county and is not intended to regulate groundwater in any other way.

Colusa County Code, Chapter 35: Well Standards

Chapter 35 of the Colusa County Code contains minimum requirements for the construction, reconstruction, repair, and destruction of water wells, cathodic protection wells, and monitoring wells. This section requires states that No person shall dig, bore, drill, deepen, modify, repair, or destroy a water well, cathodic protection well, observation well, monitoring well or any other excavation that may intersect ground water without first applying for and receiving a permit as provided in this ordinance unless exempted by law. Except as otherwise specified, the standards for the construction, repair, reconstruction, or destruction of wells shall be as set forth in the California Department of Water Resources Bulletin 74-81 "Water Well Standards, State of California" except as modified by subsequent revisions.

Colusa County Flood Control and Conservation District

The Colusa County Flood Control and Conservation District is headed by the Board of Supervisors. The purpose of the District is to plan and obtain funding for flood control activities, measures and projects within the county.

Colusa County Groundwater Management Plan

The Groundwater Management Plan (GMP), which was completed in 2008, covers the entirety of Colusa County and contains various groundwater management goals; Basin Management Objectives, which are measurable parameters or criteria related to data that can be scientifically collected; an Action Program, which includes specific actions that will be implemented to manage groundwater resources and to develop a better understanding of the groundwater resources; and a Groundwater Management Process, which should be followed in order to achieve the goals stated in the GMP. The GMP does not regulate the actions of procedures of water districts and non-County water providers within Colusa County.

Colusa County's groundwater management goals represent the overarching intent of the County with regard to groundwater management. Basin Management Objectives and Management Actions must be consistent with these Groundwater Management Goals, and must contribute to achievement of the goals. Colusa County's goals for groundwater management (as developed with input from the public through Plan Advisory Committee meetings, workshops, and surveys) are to:

- Ensure a Reliable Water Supply
- Ensure Long-Term Groundwater Sustainability
- Optimize Conjunctive Use of Surface Water and Groundwater
- Protect Water Rights
- Maintain Local Control
- Prevent Unnecessary Restrictions on Groundwater Use

Colusa County Resource Conservation District (CCRCD) Long Range Plan

The CCRCD Long Range Plan (2008-2013) provides a foundation whereby resource concerns within Colusa County may be identified, studied, and addressed. The Long Range Plan will be reviewed annually and remain effective for a period of five years. The CCRCD anticipates that water quality and quantity will remain a priority resource concern well into the timeframe of the Long Range Plan. The CCRCD will engage in the following activities to address this vital natural resource:

- Provide technical support and educational outreach to promote practices that limit sediment, nutrient, and pesticide discharges
- Support programs that decrease or remove illegal waste dumped in waterways and eradicate and manage invasive species
- Seek grant funding to assist landowners implement conservation practices that address water quality issues

- Promote irrigation practices that reduce irrigation runoff and increase water use efficiency
- Promote conservation practices that address water use efficiency in urban areas
- Survey riparian habitat and plan restoration needs with interested landowners
- Work with all agencies of authority to reduce and control flooding
- Integrate the Colusa County Groundwater Management Plan
- Strengthen partnerships with local irrigation districts, reclamation districts, and other stakeholders in addressing water quality and conservation to insure a reliable supply for all beneficial purposes

Colusa County Zoning Regulations

Sec. 4.13. Floodway or F-W zone. The floodway or F-W zone is intended to be applied to lands which lie within stream or tidal channels and to adjacent areas which are periodically inundated, or which will be inundated by a "design flood" and to provide reasonable measures for the protection of life and property in floodway areas..

Principal permitted uses:

- (1) General agriculture, but not including building or structures.
- (2) Recreational uses on open land, including public and private parks and golf courses.

Uses permitted with a use permit:

- (1) Private recreation facilities.
- (2) Boat docks and launching facilities.
- (3) Water, sewer, roadway, bridge and other such facilities necessary for public health and safety.
- (4) Minor or temporary structures incidental to agricultural or recreational uses which will not impede flood flow and are of flood-proof design.
- (5) Excavation of natural materials or construction of earthworks or water flow control devices.

Sec. 4.14. Floodplain or F-P zone. The floodplain or F-P zone is intended to be applied to areas other than floodway areas which have been inundated by overflow floodwaters in the past and which may reasonably be expected to be inundated by such floodwaters in the future. The floodplain zone is intended to limit the use of areas subject to such inundation and flooding to protect lives and property from loss, destruction and damage due to floodwaters and to the transportation by water of wreckage and debris.

Principal permitted uses:

3.9 HYDROLOGY AND WATER QUALITY

(1) General agriculture, nurseries and greenhouses, and animal sales and feed yards, except as provided in subsection (b) hereof.

(2) Recreational uses, including public stables, docks, boathouses, golf courses and shooting ranges.

Uses permitted with a use permit:

(1) Residential uses, including farm dwellings.

(2) Trailer camps and mobile home parks.

(3) Recreational uses requiring enclosed buildings.

Sacramento Valley Integrated Regional Water Management Plan

Northern California water suppliers in partnership with local governments, environmental representatives and state and federal agencies continue to refine an "Integrated Regional Water Management Plan for the Sacramento Valley" (Regional Plan). The Regional Plan is designed to protect Northern California water rights and supplies and it will serve as a roadmap for present and future generations to provide water for farms, cities, birds, fish and recreation.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting 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, in a manner that would result in substantial erosion, siltation, run-off or flooding on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Result in inundation by seiche, tsunami or mudflow.

IMPACTS AND MITIGATION

Impact 3.9-1: General Plan Implementation Could Result in a Violation of Water Quality Standards or Waste Discharge Requirements (less than significant)

Construction-Related Water Quality Impacts: Grading, excavation, removal of vegetation cover, and loading activities associated with future construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

As required by the Clean Water Act, each subsequent development project or improvement project will require an approved Storm Water Pollution Prevention Plan (SWPPP) that includes best management practices for grading, and preservation of topsoil. A SWPPP is not required if the project will disturb less than one acre. SWPPPs are designed to control storm water quality degradation to the extent practicable using best management practices during and after construction.

Future development project applicants must submit the SWPPP with a Notice of Intent to the Regional Water Quality Control Board (RWQCB) to obtain a General Permit. The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of storm water during construction activities. The RWQCB accepts General Permit applications (with the SWPPP and Notice of Intent) after specific projects have been approved by the lead agency. The lead agency for each specific project that is larger than one acre is required to obtain a General Permit for discharge of storm water during construction activities prior to commencing construction (per the Clean Water Act).

Based upon the general planning nature of the General Plan, development of detailed, site-specific information on this impact at this planning level is not feasible. However, each future project must include detailed project specific drainage plans that control storm water runoff and erosion, both during and after construction. The Regional Water Quality Control Board will require a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each future project that disturbs an area one acre or larger. The SWPPPs will include project specific best management measures that are designed to control drainage and erosion.

New Development-Related Water Quality Impacts: New development under the proposed 2030 General Plan would introduce constituents into the storm water that are typically associated with urban runoff. These constituents include sediments, petroleum hydrocarbons, pesticides, fertilizers, and heavy metals such as lead, zinc, and copper. These pollutants tend to build up during the dry months of the year. Precipitation during the early portion of the wet season (generally from November to April) washes away most of these pollutants, resulting in high pollutant concentrations in the initial wet weather runoff. This initial runoff is referred to as the “first flush” of storm events. Subsequent periods of rain would result in less concentrated pollutant levels in the runoff.

The amount and type of runoff generated by the various future projects would be greater than under existing conditions, due to increases in impervious surfaces. There would be a corresponding increase in urban runoff pollutants and first flush roadway contaminants, as well as an increase in nutrients and other chemicals from landscaped areas. These constituents would result in water quality impacts to onsite and offsite drainage flows to area waterways. The Sacramento River is included in the Section 303(d) list of impaired water bodies. Discharges of urban runoff into the Sacramento River may contribute to the existing impairment.

Subsequent development, infrastructure, and planning projects would be required to comply with 2030 General Plan policies and actions, as well as applicable state and local regulations. Colusa County has developed the 2030 General Plan to include numerous policies and action items aimed at protecting water quality from construction activities and from new development projects. Policies CON 1-16, 1-22, 1-23, 1-24, and 1-26 provide policy requirements for the protection of surface waters throughout the County. Protection measures include required minimum setbacks from water bodies, site design measures to reduce runoff or impacts to surface waters, and maintaining surface waters in their natural condition to maximize natural pollutant elimination. Policies CON 1-27 and AG 2-16 encourage and promote the use of environmentally sensitive agricultural practices to protect water quality through the application of best management practices to reduce pollutants in agricultural runoff. These policies are further supported by Action AG 2-F, which requires coordination with irrigation districts to identify cost-effective and feasible best management practices for the application and use of water resources on agricultural lands.

Policies PSF 1-22 and 1-27 include requirements to protect water resources from impacts associated with septic systems and septic leach fields. These policies are supported by Action Items PSF 1-L, 1-O, 1-P, and 1-R, which require amendments to the County Code to strengthen water quality protection standards associated with onsite septic systems. These changes would include increased setbacks from waterways, limitations on septic installations in areas with high groundwater tables, and new performance standards to ensure that proposed systems do not result in water quality violations. In addition to these policies and action items, Action Items SA 1-M and 1-N require the creation and implementation of a Drainage Master Plan and a Flood Master Plan, respectively. The plans must include measures to address storm water quality, and identify areas for flood water detention and water quality preservation.

Compliance with the Clean Water Act and regulations enforced by the Regional Water Quality Control Board would ensure that construction-related impacts to water quality are minimized and

that future projects comply with all applicable laws and regulations. Implementation of the various policies and action items listed above would further ensure that future development projects under the General Plan do not result in significant adverse effects to water quality. Therefore, this impact **is less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CON 1-16: Require new development projects to incorporate measures that eliminate or avoid direct impacts to lakes, reservoirs, rivers, creeks, streams, wetlands, and other waterways. Measures may include, but are not limited to, appropriate setbacks or the implementation of best management practices approved by the Department of Planning and Building.

Policy CON 1-22: Maintain lakes, rivers, streams, creeks, and waterways in a natural state whenever possible. These water features may be actively managed and/or improved or modified in order to function as natural flood protection and storm water management features during storms and flooding events.

Policy CON 1-23: Protect and enhance streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools through sound land use planning, community design, and site planning.

Policy CON 1-24: If a proposed project may result in impacts to wetlands or other Waters of the U.S., require the project proponent to consult with the appropriate regulatory agency and implement all applicable permit requirements as a condition of project approval.

Policy CON 1-26: Discourage development within 50 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams unless County-approved best management practices have been incorporated into the project's design in order to protect water quality and shoreline resources. Appropriate uses within the setback areas may include, but are not necessarily limited to:

- a. Fire and flood protection areas*
- b. Maintenance of riparian habitat*
- c. Recreational trails*
- d. Vegetated landscaping*
- e. Boat launch facilities*
- f. Levees*
- g. Docks*
- h. Irrigation pumps*

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Policy CON 1-27: Encourage agricultural land owners to improve on-site storm water retention features and implement feasible Best Management Practices (BMPs) to reduce site runoff and provide for natural removal of water pollutants.

Policy PSF 1-22: For projects that will rely on on-site wastewater systems, applicants shall provide detailed plans demonstrating that the system will be adequate to serve the project and will meet or exceed all applicable water quality standards.

Policy PSF 1-27: Ensure future septic systems are designed and located to protect waterways and agricultural lands.

Policy AG 2-16: Promote wildlife-friendly farm practices, such as tailwater ponds, native species/grasslands restoration in field margins, hedgerows, ditch management for riparian habitat, restoration of riparian areas in a manner consistent with ongoing water delivery systems, reduction of pesticides, and other appropriate measures.

Policy SA 1-29: Require new development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process. Project applicants shall demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities.

Policy SA 1-30: Ensure that construction activities will not result in adverse impacts to existing flood control and drainage structures.

Actions

Action CON 1-F: Continue to require implementation of the County's Grading Ordinance. Review projects to ensure that BMPs are implemented during construction and site grading activities as well as in project design to reduce pollutant runoff into water bodies.

Action PSF 1-L: Amend the County Code to include septic and leach field setbacks from natural waterways. This setback should be a minimum 100 feet from perennial and intermittent streams, seasonal water bodies and natural bodies of standing water. Exceptions may be made if the project involves the repair of an existing system or the system is properly engineered and approved by the Public Health Director.

Action PSF 1-O: Monitor ongoing changes and updates to State regulations for septic systems developed by the State Regional Water Quality Control Board, as required by AB 885, and periodically update the County Code to reflect applicable changes in regulations.

Action PSF 1-P: Update the County Code to create a new septic system permit process that includes site specific evaluation criteria and construction performance standards. At the preliminary review stage, projects shall demonstrate to the satisfaction of the County Department of Environmental Health, feasibility to accommodate a septic system that meets all applicable water quality standards.

Action PSF 1-Q: Restrict the development of new septic systems in areas that are prone to flooding or that have a seasonal high water table and/or water seepage problems.

Action AG 2-F: Coordinate with irrigation districts to identify cost-effective and feasible Best Management Practices for the application and use of water resources that address the range of agricultural activities in Colusa County. Work with entities such as the irrigation districts, Agricultural Commissioner, and UC Extension Office to distribute Best Management Practices information to agricultural operations in the County.

Action SA 1-M: Develop a Drainage Master Plan that addresses the following, at a minimum:

- a. Storm water and drainage improvements for each community that are needed to accommodate planned growth;*
- b. Standards for agricultural operations to ensure that on-site activities do not result in adverse off-site flooding and drainage impacts;*
- c. Standards for on- and off-site stormwater and flooding improvements to ensure no adverse impacts to adjacent or nearby properties;*
- d. Coordination with irrigation districts, cities and other flood control agencies throughout the County to develop uniform standards for irrigation and storm water conveyance infrastructure; and,*
- e. Standard measures to be used by new development to address localized flooding impacts.*

Action SA 1-N: Develop a Flood Master Plan that addresses the following, at a minimum:

- a. Identification of areas for stream channel or flood control conveyance system enlargement and/or stabilization;*
- b. Areas for floodwater detention and water quality preservation;*
- c. Crossing improvements;*
- d. Operation, maintenance and funding of flood control facilities; and*
- e. Emergency preparedness for flooding events.*

Impact 3.9.2: General Plan Implementation Could Result in the Depletion of Groundwater Supplies or Interfere Substantially with Groundwater Recharge (less than significant)

Subsequent development projects under the General Plan, such as residential, commercial, industrial, and roadway projects would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant

3.9 HYDROLOGY AND WATER QUALITY

amounts of ground water recharge; clay soils tend to have lower percolation potentials; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff. The amount of new pavement and the extent to which it affects infiltration depends on the site-specific soil type. Projects located in urban areas would have less of an impact than projects converting open lands and spaces.

The 2030 General Plan Land Use Map identifies significant areas of the County that are to be preserved as open space. Open space includes lands for resource conservation, agricultural lands, and areas to be preserved for the retention of flood waters and groundwater percolation. New development in Colusa County would occur primarily around the existing established communities, and implementation of the General Plan would not result in the significant loss of open space lands that currently provide beneficial areas for groundwater recharge. Implementation of the General Plan would result in **less than significant** impacts associated with groundwater recharge.

As described in the environmental setting section above, most of the municipal water providers in Colusa County utilize groundwater as their primary supply source. New development under the 2030 General Plan would increase the demand for groundwater. The California Department of Water Resources (DWR) maintains a publicly available on-line database, which includes groundwater level data for the County. The 77-year period of record for water level measurements in Colusa County depicts a groundwater system that has experienced changing conditions over time. In areas of high groundwater use and differing water conditions, water levels fluctuate, sometimes dramatically, in response to changes in groundwater use and hydrologic conditions. In areas of lower groundwater use and more stable water conditions, water levels have not exhibited significant fluctuations over times. In areas where agricultural water needs are met with surface water, wells generally exhibit more stable conditions.

Groundwater levels decreased during the 1975 to 1977 drought then increased slightly until 1982. At that point, surface water from the Tehama Colusa Canal became available, and groundwater levels increased quickly from 1982 through 1986. Seasonal water level fluctuations decreased during this period from about 20 feet to less than 10 feet, indicating a reduction in groundwater pumping. Groundwater levels declined from 1988 through 1994, when deliveries from the TCC were only 25-65 percent of normal, and have generally increased from 1994 through present. Groundwater levels in this well are currently about 50 feet higher than they were in 1970.

The direction of spring groundwater flow within the County has not changed from 1977 to 2006. It generally follows the topography of the County, flowing from the Coast Ranges toward the Sacramento Valley (west to east), and north to south within the Valley. Spring groundwater elevations were about five to 30 feet higher in 2006 than in 1977, depending upon the area.

Data from the two nested monitoring wells at the extensometer sites in the County shows that for the four years of available data, the spring groundwater elevations in the monitored aquifer zones have been very similar, within three feet of one another.

Municipal water providers have not historically experienced problems meeting existing or projected water demand as a result of groundwater shortages. Any water delivery problems

experienced by municipal water providers in recent years has been related to infrastructure deficiencies such as the need for additional wells or the need for additional conveyance infrastructure, rather than actual shortages in groundwater availability.

Subsequent development, infrastructure, and planning projects would be required to comply with 2030 General plan policies and actions. Colusa County has developed the 2030 General Plan to include policies and action items that would protect against impacts from groundwater overdraft and ensure a long-term and sustainable supply of groundwater.

The policies and actions identified below require new development to identify adequate sources of water supply prior to project approval. Additionally, Policy PSF 1-2 requires projects to address potentially cumulative impacts to water users and the environment. If project water demands would be met by groundwater supplies, a project must demonstrate that adequate groundwater supplies are available to meet project needs, without resulting in water shortages or groundwater overdraft that could impact existing water users. The policies and actions listed below also include numerous measures and steps the County will implement to conserve water and decrease water usage, which would assist in alleviating demand for groundwater supplies. Given the recent measured increases in groundwater levels within Colusa County and the implementation of the policies and actions listed above, this is a **less than significant** impact.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy PSF 1-2: Prior to the approval of development, infrastructure, Specific Plans, or other projects that would result in increased demand for public water conveyance and treatment, projects must demonstrate proof of adequate water supply (e.g., that existing services are adequate to accommodate the increased demand, or improvements to the capacity of the system to meet increased demand will be made prior to project implementation), and that potential cumulative impacts to water users and the environment will be addressed.

Policy PSF 1-3: Coordinate with water providers throughout the County to manage water supplies in a way that ensures adequate supplies for existing residents, agricultural uses, and businesses, and for projected growth, and avoids groundwater overdraft, water quality degradation and other adverse environmental impacts.

Policy PSF 1-5: Facilitate, and to the extent feasible, assist with the development of new and reliable sources of water, consistent with County land use plans and regional water needs.

Policy PSF 1-8: Require proof of an adequate (as defined by the County Environmental Health Division) potable water supply to serve the entire project prior to approval of any division of land or use permit.

Policy CON 1-31: Encourage municipal water purveyors to install water meters and abandon flat-fee water use rate structures where feasible.

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Policy CON 1-32: Demonstrate leadership in water conservation by including water-efficient plumbing and landscaping at all new County facilities, and by reducing the County's own water use to the extent possible.

Policy CON 1-33: Require new development and expansion of existing uses to incorporate best management practices for water use and include water conservation measures.

Policy CON 1-34: Encourage the use of water conservation measures for agriculture and in existing residences and businesses.

Policy CON 1-35: Encourage the use of water conservation measures, including low flow plumbing that exceeds state requirements; reclaimed wastewater for non-potable uses; dual plumbing that allows grey water from showers, sinks, and washers to be reused for landscape irrigation in new developments; and native and drought-tolerant landscaping.

Actions

Action PSF 1-C: Coordinate with municipal domestic water providers in the County to address state Water Conservation Act requirements to adopt water management plans and water use targets by July 2011.

Action PSF 1-D: Coordinate with agricultural water suppliers in the County to address state Water Conservation Act requirements to price water based on the quantity delivered and implement efficient management practices by July 31, 2012 and to adopt agricultural water management plans by December 31, 2012.

Action PSF 1-E: Coordinate with water districts, municipal water providers, agricultural water purveyors, and industrial water purveyors to implement consistent water conservation policies and measures Countywide, including the application and enforcement of the Water Efficient Landscaping Ordinance (Action CON 1-G).

Action CON 1-G: Adopt a Water Efficient Landscaping Ordinance for residential, park, recreational, and commercial uses, based on the state model ordinance as amended to address local concerns. The ordinance should address:

- 1. Water-efficient landscape designs using low water-use plants.*
- 2. Efficient irrigation systems.*
- 3. Minimized turf areas.*
- 4. Soil improvements and mulch.*
- 5. Regular maintenance and adjustment of irrigation systems.*
- 6. Scheduling irrigation during early or late hours.*
- 7. Water budgeting, when necessary.*

8. *Education of residents, customers and employees regarding the importance of efficient water use.*

Action CON 1-H: Continue to implement the policies, actions, and Basin Management Objectives (BMOs) contained in the Colusa County Groundwater Management Plan.

Action CON 1-I: Continue to cooperate with Butte, Glenn, Tehama, Shasta and Sutter Counties through the Northern Sacramento Valley Integrated Regional Water Management Group, and continue to foster regional cooperation with other counties and water purveyors

Impact 3.9-3: General Plan Implementation Could Alter the Existing Drainage Pattern in a Manner which Would Result in Substantial Erosion, Siltation, Flooding, or Polluted Runoff (less than significant)

Individual future projects developed after adoption of the General Plan would create new impervious surfaces. This would result in an incremental reduction in the amount of natural soil surfaces available for infiltration of rainfall and runoff, potentially generating additional runoff during storm events. In addition, the increase in impervious surfaces, along with the increase in surface water runoff, could increase the non-point source discharge of pollutants. Anticipated runoff contaminants include sediment, pesticides, oil and grease, nutrients, metals, bacteria, and trash. Contributions of these contaminants to stormwater and non-stormwater runoff would degrade the quality of receiving waters. During the dry season, vehicles and other urban activities release contaminants onto the impervious surfaces, where they can accumulate until the first storm event. During this initial storm event, or first flush, the concentrated pollutants would be transported via runoff to stormwater drainage systems. Contaminated runoff waters could flow into the stormwater drainage systems that discharge into rivers, agricultural ditches, sloughs, and channels and ultimately could degrade the water quality of any of these water bodies.

Additionally, individual future projects developed after adoption of the General Plan could potentially alter surface drainage patterns as a result of directly altering flow patterns, or placing structures in a floodway, all of which could yield increased amounts of stormwater runoff. The construction activities associated with future projects, such as commercial, residential and industrial developments, as well as road widenings, and other infrastructure projects that convert permeable surfaces or install permanent structures would require stormwater drainage management measures to avoid flooding impacts. The existing storm drainage network in Colusa County may not have sufficient capacity to convey the additional runoff from individual future projects. If the storm drainage network is not appropriately designed it could be overwhelmed during a large storm event and result in flooding.

Based upon the general planning nature of the General Plan, development of detailed, site-specific information on this impact at the program level is not feasible. As previously discussed, a future project applicant would be also be required to obtain permits from the Army Corps of Engineers and the Department of Fish and Game if any work is performed within a waterway. Each future development project must also include detailed project specific floodplain and drainage studies that assess the drainage characteristics and flood risks so that an appropriate storm drainage plan

can be prepared to control storm water runoff, both during and after construction. The drainage plan will ultimately include project specific best management measures that are designed to allow for natural recharge and infiltration of stormwater. Construction of storm drainage improvements would occur as part of an overall development project and is considered in the environmental impacts associated with project construction and implementation as addressed in Chapters 3.1 through 3.14 and 4.0 of this EIR.

Colusa County has developed the 2030 General Plan to include policies and action items that, when implemented, will reduce flooding from new development, reduce storm water pollution from new development, and protect and enhance natural storm drainage and water quality features, which will water quality impacts. The policies and action items identified below include numerous requirements that would reduce the potential for General Plan implementation to result in increased flooding or result in water quality impacts associated with increased runoff, siltation or erosion. Policies CON 1-22 and 1-23 require the protection and enhancement of natural drainage and flood control features such as lakes, rivers, streams, creeks and other waterways. Natural drainage features can be effective in removing silt and other surface water pollutants.

Policy SA 1-29 requires new development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process. Project applicants must demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities. Implementation of this policy will help ensure that new development does not result in significant adverse impacts to the existing storm water conveyance, detention and drainage infrastructure in the County.

Additionally, as described above, Actions SA 1-M and SA 1-N call for the development and implementation of a Countywide Drainage Master Plan and Flood Master Plan. These documents must include measures and conditions applicable to new development that would reduce siltation, runoff, erosion and the risk of flooding. The implementation of these policies and action items would ensure that implementation of the 2030 General Plan would have a **less than significant** impact from these issues.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy SA 1-22: Maintain designated floodways as open space and limit uses to low intensity uses such as agriculture, passive recreation, preservation of vegetation and wildlife habitat, and scenery; provided such uses do not impede floodwaters or pose a threat to public safety.

Policy SA 1-23: Support and participate in planning efforts undertaken at the regional, state and federal level to improve flood management facilities throughout the County, particularly along the western banks of the Sacramento River.

Policy SA 1-24: Monitor and participate in efforts currently underway by the Central Valley Flood Protection Board for preparation of the Central Valley Flood Protection Plan (CVFPP).

Policy SA 1-25: Support and encourage the efforts of public agencies and private landowners to maintain and improve existing flood management facilities.

Policy SA 1-26: Provide ongoing maintenance of bridges, culverts, railroad trestle structures, and other flood control and storm water conveyance infrastructure to provide for adequate storm water flows.

Policy SA 1-27: Maintain adequate lands that can be used for groundwater recharge and storm water management. These lands may include parcels designated Agriculture General (AG), Designated Floodway (DF), and Resource Conservation (RC).

Policy SA 1-29: Require new development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process. Project applicants shall demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities.

Policy SA 1-30: Ensure that construction activities will not result in adverse impacts to existing flood control and drainage structures.

Policy SA 1-31: Require project proponents to pay their fair share for construction of off-site drainage or flood control infrastructure improvements necessitated by their projects.

Policy SA 1-32: For properties located within a flood hazard zone, as identified on the most recent FEMA 100-year floodplain map or identified by the California Department of Water Resources, the County shall not enter into a development agreement, approve any discretionary entitlement, tentative parcel map, parcel map, final map or any ministerial permit that would result in the construction of a new residence unless flood protection findings consistent with the requirements of California Government Code Sections 65865.5, 65962, 66474.5 can be made and documented.

Policy SA 1-35: Encourage and accommodate multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the County's streams, creeks and lakes. Where appropriate and feasible, the County shall also encourage the use of flood and/or stormwater retention facilities for use as groundwater recharge facilities.

Policy SA 1-36: Encourage flood control measures that respect natural drainage features, vegetation and natural waterways, while still providing for adequate flood control and protection.

Policy CON 1-22: Maintain lakes, rivers, streams, creeks, and waterways in a natural state whenever possible. These water features may be actively managed and/or improved or modified in order to function as natural flood protection and storm water management features during storms and flooding events.

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Policy CON 1-23: Protect and enhance streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools through sound land use planning, community design, and site planning.

Action

Action SA 1-M: Develop a Drainage Master Plan that addresses the following, at a minimum:

- a. Storm water and drainage improvements for each community that are needed to accommodate planned growth;*
- b. Standards for agricultural operations to ensure that on-site activities do not result in adverse off-site flooding and drainage impacts;*
- c. Standards for on- and off-site stormwater and flooding improvements to ensure no adverse impacts to adjacent or nearby properties;*
- d. Coordination with irrigation districts, cities and other flood control agencies throughout the County to develop uniform standards for irrigation and storm water conveyance infrastructure; and,*
- e. Standard measures to be used by new development to address localized flooding impacts.*

Action SA 1-N: Develop a Flood Master Plan that addresses the following, at a minimum:

- a. Identification of areas for stream channel or flood control conveyance system enlargement and/or stabilization;*
- b. Areas for floodwater detention and water quality preservation;*
- c. Crossing improvements;*
- d. Operation, maintenance and funding of flood control facilities; and*
- e. Emergency preparedness for flooding events.*

Action SA 1-S: Seek State and Federal funding for improvements to existing flood control and drainage infrastructure.

Action CON 1-F: Continue to require implementation of the County's Grading Ordinance. Review projects to ensure that BMPs are implemented during construction and site grading activities as well as in project design to reduce pollutant runoff into water bodies.

Impact 3.9.4 General Plan Implementation Could Otherwise Substantially Degrade Water Quality (less than significant)

Water Quality Impacts from Discharges to 303(d) Listed Water Bodies: Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality

standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

Five watersheds within Colusa County have Section 303(d) listed impaired water bodies. The impaired water bodies are located within the Butte Basin, Glenn Colusa, Sycamore-Sutter, East Blue Ridge, and Bear Creek hydrologic areas. These hydrologic areas extend beyond the county boundary so not all impaired water body segments are located within Colusa County. These constituents originate from a variety of sources, but generally include agricultural activities, such as irrigation runoff, and urban non-point sources of runoff from landscaping, rooftops, trash, and illicit dumping.

Water quality in the Sacramento River has been identified by the State of California as impaired by copper, mercury, toxicity and more than 15 pesticides including diazinon chlorpyrifos and lindane. Under the CWA listing, impaired water bodies have no remaining assimilative capacity or ability to accommodate additional quantities of these contaminants, irrespective of concentration. Projects are required to comply with requirements of approved TMDLs, as regulated in the region by the Central Valley RWQCB through issuance of Waste Discharge Requirements and NPDES permit amendments.

Based upon the general planning nature of the General Plan, development of detailed, site-specific information on this impact at this planning level is not feasible. However, previously listed policies and action items include the requirement of each future development project to include a detailed project specific drainage plan and a Storm Water Pollution Prevention Plan (SWPPP) that will control storm water runoff and erosion, both during and after construction. If the project involves the discharge of dewatering into surface waters the project proponent will need to acquire a Dewatering Permit, NPDES permit and Waste Discharge permit from the RWQCB. Implementation of the policies and action items that were presented previously under Impacts 3.9-1 and 3.9-3 would ensure that the General Plan would have a **less than significant** impact from these issues.

Impact 3.9.5 General Plan Implementation Could Place Housing and Structures 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 (significant and unavoidable)

Approximately 25% of the lands within Colusa County are located in the 100-year floodplain. The County has historically experienced flooding problems, and the majority of the County's population centers are located within the 100-year floodplain. Figure 3.9-2 depicts the FEMA flood zones mapped for Colusa County. As shown on this figure, most of the land immediately west of the Sacramento River, in the eastern portion of the County is within the 100-year flood plain. Additionally, areas surrounding and within the communities of Arbuckle, Maxwell, and Princeton are largely within the 100-year flood plain. The areas of the County most prone to flooding and damage from floods are immediately adjacent to the Sacramento River and the Colusa Basin

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Drainage Canal. Many parcels along these two waterways have been designated as Designated Floodway on the Land Use Map. The Designated Floodway designation is applied to lands that have been designated as floodways by the State Reclamation Board. Areas between the Sacramento River and the levees are included, as well as the Colusa Bypass between the Sacramento River and Butte Creek. Residential and commercial development is not permitted within this land use designation.

The Colusa County 2030 General Plan includes a Land Use Map that and policies that prioritize the placing new development in and around existing communities in order to maintain the County's rural character, avoid sprawl, and protect agricultural and open space uses. Implementation of the General Plan will allow development of new housing and structures within the 100-year flood plain, subject to compliance with federal, state, and local requirements related to flooding. The construction of housing and structures in the floodway could obstruct floodwaters at some locations. Placement of structures within a floodplain can displace floodwaters and alter the base flood elevations in the surrounding areas. Structures can form a backwater effect, resulting in increases in the flood elevation level upstream and in neighboring areas. Likewise, floodwater can cause scour effects, resulting in erosion and sedimentation problems downstream from structures.

As described in the setting section, numerous federal, state, and local agencies are responsible for maintaining flood protection features in Colusa County, including US Army Corps of Engineers (USACE), Department of Water Resources (DWR), Central Valley Flood Protection Board (CVFPB), and Department of Fish and Game (CDFG) at the federal and state level, as well as local reclamation districts and flood control agencies. A floodplain risk assessment would be prepared for any project that is located within a 100-year floodplain.

The policies and actions identified below include two primary mechanisms to protect County residents and property from flood damage and hazards associated with flooding. The first approach is to take steps to reduce the risks associated with flooding, and the second approach is to improve the flooding prevention, levee system, and drainage infrastructure within the County.

Policy SA 1-34 requires new structures to be located outside of the 100-year flood plain to the greatest extent feasible. However, given the extent and location of County areas within the 100-year flood plain, full avoidance by new development is not feasible, and new development will occur within the 100-year flood plain., Policy SA 1-30 requires that new construction activities will not result in adverse impacts to existing flood control and drainage structures. Policy SA 1-29 requires new development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process. Project applicants shall demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities. Action SA 1-Q requires the County to review the conditions of bridges, culverts, railroad trellis structures, and other flood control and storm water conveyance infrastructure during the preparation of the Capital Improvement Program (CIP), and to include necessary improvements in the CIP to ensure adequate conveyance of flood waters.

Policy SA 1-37 requires a minimum of 100-year flood protection for new construction, and strives to achieve 200-year flood protection for new development within the unincorporated communities. This policy is further supported by Action SA 1-T, which requires the County to review and update Chapter 33 (Flood Damage Prevention) of the County Code to include standards for new structures located within the 100-year flood plain. These standards include requirements to elevate structures at least one (1) foot above the 100-year flood elevation and one foot above the 200-year flood plain in urbanized areas. Requirements also include ensuring that new construction does not contribute to cumulative flooding problems or pose hazards to surrounding land owners or the public.

The Central Valley Flood Protection Board is in the process of developing the Central Valley Flood Protection Plan (CVFPP). The CVFPP is scheduled for completion and adoption in 2012. Guidance documents related to the preparation of General Plan updates to be consistent with the CVFPP are available, and were utilized extensively during the preparation of the General Plan Safety Element. The County has prepared the Safety Element to be consistent with the guidance provided by the Central Valley Flood Protection Board, and Policy SA 1-24 requires the County to monitor and participate in CVFPP efforts. Additionally, Action SA 1-R requires the County to review, and if necessary amend, the General Plan Safety Element on the CVFPP has been adopted, in accordance with California Government Code Sections 65302.9 and 65860.1.

Actions SA 1-M and SA 1-N require the development of a County Drainage Master Plan and County Flood Master Plan. These plans will identify stormwater and drainage improvements for each community that are needed to accommodate planned growth, standard measures to be used by new development to address localized flooding impacts, and identify various infrastructure improvements needed to improve flooding conditions throughout the County.

Subsequent development, infrastructure, and planning projects would be subject to the 2030 General Plan policies and actions. The policies and actions contained in the Safety Element of the 2030 General Plan represent a comprehensive and holistic approach by the County to reduce the risks of flooding to County residents and properties. Furthermore, as described in the setting section, numerous federal, state, and local agencies are responsible for maintaining flood protection features in Colusa County, including US Army Corps of Engineers (USACE), Department of Water Resources (DWR), Central Valley Flood Protection Board (CVFPB), and Department of Fish and Game (CDFG) at the federal and state level, as well as local reclamation districts and flood control agencies. A floodplain risk assessment would be prepared for any project that is located within a 100-year floodplain. While these measures would reduce potential impacts, avoidance of the 100-year flood plain and associated effects by new development is infeasible given that much of the land within eastern Colusa County, which contains the highest population concentrations and existing communities, is planned for growth as identified by the Land Use Map,. Therefore, this impact is **significant and unavoidable**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTSPolicies

Policy SA 1-22: Maintain designated floodways as open space and limit uses to low intensity uses such as agriculture, passive recreation, preservation of vegetation and wildlife habitat, and scenery; provided such uses do not impede floodwaters or pose a threat to public safety.

Policy SA 1-23: Support and participate in planning efforts undertaken at the regional, state and federal level to improve flood management facilities throughout the County, particularly along the western banks of the Sacramento River.

Policy SA 1-24: Monitor and participate in efforts currently underway by the Central Valley Flood Protection Board for preparation of the Central Valley Flood Protection Plan (CVFPP).

Policy SA 1-25: Support and encourage the efforts of public agencies and private landowners to maintain and improve existing flood management facilities.

Policy SA 1-26: Provide ongoing maintenance of bridges, culverts, railroad trestle structures, and other flood control and storm water conveyance infrastructure to provide for adequate storm water flows.

Policy SA 1-27: Maintain adequate lands that can be used for groundwater recharge and storm water management. These lands may include parcels designated Agriculture General (AG), Designated Floodway (DF), and Resource Conservation (RC).

Policy SA 1-28: Coordinate with the Cities of Colusa and Williams to develop a Flood Emergency Plan. This may be included as a subcomponent of a County-wide Emergency Management Plan.

Policy SA 1-29: Require new development projects to demonstrate how storm water runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process. Project applicants shall demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities.

Policy SA 1-30: Ensure that construction activities will not result in adverse impacts to existing flood control and drainage structures.

Policy SA 1-31: Require project proponents to pay their fair share for construction of off-site drainage or flood control infrastructure improvements necessitated by their projects.

Policy SA 1-32: For properties located within a flood hazard zone, as identified on the most recent FEMA 100-year floodplain map or identified by the California Department of Water Resources, the County shall not enter into a development agreement, approve any discretionary entitlement, tentative parcel map, parcel map, final map or any ministerial permit that would result in the construction of a new residence unless flood protection findings consistent with the requirements of California Government Code Sections 65865.5, 65962, 66474.5 can be made and documented.

Policy SA 1-33: Monitor ongoing efforts by FEMA and the California Department of Water Resources to update flood hazard maps within Colusa County.

Policy SA 1-34: Require new structures to be located outside of the 100-year floodplain to the greatest extent feasible.

Policy SA 1-35: Encourage and accommodate multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the County's streams, creeks and lakes. Where appropriate and feasible, the County shall also encourage the use of flood and/or stormwater retention facilities for use as groundwater recharge facilities.

Policy SA 1-36: Encourage flood control measures that respect natural drainage features, vegetation and natural waterways, while still providing for adequate flood control and protection.

Policy SA 1-37: Require a minimum of 100-year flood protection for new construction, and strive to achieve 200-year flood protection for unincorporated communities.

Policy SA 1-38: Require adequate all-weather access to new development located within a flood zone.

Policy SA 1-39: Support coordinated efforts to maintain levees along the Sacramento River and adjacent to canals and waterways throughout the County.

Policy SA 1-40: Support the efforts of levee owners and agencies to redesign and repair levees that do not meet flood protection standards in compliance with adopted State and/or Federal standards.

Policy SA 1-41: Require new development proposals in levee inundation areas to conduct an analysis of risk from failure of levees.

Actions

Action SA 1-M: Develop a Drainage Master Plan that addresses the following, at a minimum:

- a. Storm water and drainage improvements for each community that are needed to accommodate planned growth;*
- b. Standards for agricultural operations to ensure that on-site activities do not result in adverse off-site flooding and drainage impacts;*
- c. Standards for on- and off-site stormwater and flooding improvements to ensure no adverse impacts to adjacent or nearby properties;*
- d. Coordination with irrigation districts, cities and other flood control agencies throughout the County to develop uniform standards for irrigation and storm water conveyance infrastructure; and,*

3.9 HYDROLOGY AND WATER QUALITY

- e. *Standard measures to be used by new development to address localized flooding impacts.*

Action SA 1-N: Develop a Flood Master Plan that addresses the following, at a minimum:

- a. *Identification of areas for stream channel or flood control conveyance system enlargement and/or stabilization;*
- b. *Areas for floodwater detention and water quality preservation;*
- c. *Crossing improvements;*
- d. *Operation, maintenance and funding of flood control facilities; and*
- e. *Emergency preparedness for flooding events.*

Action SA 1-O: Develop a public flooding awareness program that:

- a. *Informs the public about the specific risks of living in areas at risk of flooding;*
- b. *Notifies landowners and tenants of their property's flood designation status;*
- c. *Provides information on steps that property owners can take to reduce their exposure to flood damages;*
- d. *Encourages landowners within the 100- and 200- year floodplain, and/or within areas protected by levees, to purchase and maintain flood insurance;*
- e. *Provides information regarding evacuation plans, flood protection programs, local flood protection agencies, and other relevant information; and*
- f. *Informs property owners of potential changes in flood insurance requirements and rates as a result of future changes to designated flood hazard areas.*

Action SA 1-P: Annually review areas subject to flooding, levee failure, and dam inundation, including any relevant information developed by FEMA, the California Department of Water Resources, and other agencies, and update County-wide flood risk maps accordingly in compliance with AB 162.

Action SA 1-Q: During preparation of the Capital Improvement Program, review the conditions of bridges, culverts, railroad trestle structures, and other flood control and storm water conveyance infrastructure and include necessary improvements on the CIP to ensure safety of persons in the County and adequate conveyance of flood waters.

Action SA 1-R: In accordance with California Government Code Sections 65302.9 and 65860.1, once the Central Valley Flood Protection Plan (CVFPP) has been adopted, the County shall review, and if necessary, amend the Safety Element of the General Plan and the Zoning Ordinance, to

ensure that these documents are consistent with the requirements of the CVFPP. Adoption of the CVFPP is anticipated to occur in July 2012.

Action SA 1-S: Seek State and Federal funding for improvements to existing flood control and drainage infrastructure.

Action SA 1-T: Review the County Code, including Chapter 33- Flood Damage Prevention, and revise as necessary to ensure that development standards are consistent with the requirements of state law, including Government Code Section 65007. Development and building standards shall require the following:

- a. New structures proposed for location within the 100-year floodplain shall be elevated one (1) foot or more above the 100-year flood elevation.*
- b. Within urban, or urbanizing areas, as defined in California Government Code Section 65007, the lowest floor of any new construction or substantial improvements to existing structures shall be elevated a minimum of one (1) foot above the 200-year flood elevation.*
- c. New construction in the 100-year floodplain shall be designed and constructed so that they do not contribute to cumulative flooding problems that could pose a hazard to surrounding landowners or the public.*
- d. Discourage extensive areas of impermeable surfaces and promote the use of permeable materials for surfaces such as driveways and parking lots.*
- e. Ensure new development within areas prone to flooding include all-weather access roads or other measures to ensure access during a flood event.*

Action SA 1-U: Review the Safety Element concurrently with the periodically updated Housing Element to update any new information regarding floodplain mapping and/or regulations to ensure consistency with Federal and State requirements.

Action SA 1-V: Ensure that the construction of new levees or improvements made to existing levees will not adversely divert flood waters or increase flooding in other sensitive locations.

Action SA 1-W: Ensure that the construction of new levees or improvements made to existing levees do not impede the delivery of water supplies used for domestic or agricultural purposes.

Action SA 1-X: Support the efforts of levee maintenance districts with efforts to secure State and Federal funding for geotechnical studies of levees and implementation of associated improvements.

ADDITIONAL MITIGATION MEASURES

The only feasible mitigation approach to this impact would be to fully prohibit new development within the 100-year flood plain. Colusa County has taken a “Smart Growth” approach to the

development of the Land Use Map. This approach focuses on concentrating new development around existing established communities in order to reduce the conversion of agricultural lands, reduce the loss of open space, reduce impacts to infrastructure, reduce the generation of new vehicle trips, and to avoid sprawl and “leap-frog” development. The majority of new growth in the County over the life of the 2030 General Plan is anticipated to occur in and around Maxwell, Arbuckle, and the spheres of influence of Williams and Colusa. The majority of these areas are located within the 100-year flood plain. Full avoidance of future development in these areas would result in a sprawling land use pattern that places new development in previously undeveloped areas of the County, in locations where infrastructure and public services are not adequate to meet new growth and development demands. Therefore, it is neither feasible nor desirable to fully prohibit new development within the 100-year flood plain. There is no feasible mitigation for this impact, and this impact would remain **significant and unavoidable**.

Impact 3.9-6: General Plan Implementation Could Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding as a Result of the Failure of a Levee or Dam, Seiche, Tsunami, or Mudflow. (less than significant)

Several areas of Colusa County are protected from flooding by a system of levees and other flood control infrastructure. Levees in Colusa County are shown on Figure 3.9-3. While it would be difficult to predict or determine when and where a levee may fail, inundation of buildings, structures, and roadways could occur. Levee failures could result in the loss of property, injury and death.

Five dams which retain water from tributaries of the Sacramento River could cause damage in Colusa County if their dams were to fail: Lake Oroville, Lake Shasta, Whiskeytown Lake, Black Butte Lake and East Park Reservoir. In the event of a major dam failure, much of eastern Colusa County could become inundated. A major earthquake centered close to a dam would be the most likely cause of failure.

Dam Inundation maps have been required in California since 1972, following the 1971 San Fernando Earthquake and near failure of the Lower Van Norman Dam. Inundation maps show areas that lie within the potential dam failure inundation zone, as shown in Figure 3.9-4.

Lake Oroville, which is located in Butte County, would represent the most immediate threat to Colusa County in the event of a dam failure, as flood waters could reach the County within eight hours. Lake Shasta, in Shasta County, could cause the most extensive inundation, reaching as far west as Maxwell and College City in a period of 42 hours. Inundation from Whiskeytown Lake, located in Trinity County, would take over three days to reach Colusa County. Failure of the dam of Black Butte Lake, which is on the border of Glenn and Tehama Counties, could result in some inundation within a period of about 35 hours. The inundation from a failure of this dam would be less extensive than if the other above-referenced dams were to fail.

Failure of the dam at East Park Reservoir could cause minor inundation at the reservoir’s outlet. The flood waters would flow into Glenn County; thus, its failure would not likely impact areas of

Colusa County. In Glenn County, the flooding could extend up to one-quarter mile on either side of Stony Creek at its widest point. The water could cause an overflow of Stony Gorge Reservoir, which is located on Stony Creek. Black Butte Reservoir would retain the excess inundation.

Mudflows could occur in the western portions of Colusa County, in the mountainous and hilly areas with steep enough slopes to facilitate mudflows. Slopes that are void of vegetation or have recently experienced forest fires are at the greatest risk for mudflows. The areas of the County most susceptible to mudflows are also the least populated areas of the County. The County's population centers are located in central and eastern Colusa County, where the terrain is relatively flat, and the risks for mudflows are minimal.

Given the County's distance from the Pacific Ocean, and the intervening mountain ranges, the County is not at risk from tsunamis. A seiche could theoretically occur on East Park Reservoir, however, given the relatively low level of seismic activity in Colusa County, and the lack of major population centers surrounding the reservoir, the risks associated with seiches would be minimal. Risks associated with seiches and tsunamis are considered to be **less than significant**.

Future development under the 2030 General Plan may be in areas associated with risks associated with levee failures, dam failures and mudflows. Subsequent development under the General Plan may place structures in potential create structures or obstructions to flood flows from levee or dam failures. However, future projects constructed within areas subject to flooding due to dam failure, as mapped by the California Emergency Management Agency would be built following standard building codes and federal, state, and local regulations; all of which would be adequate to protect against further personal injury or death.

Colusa County has developed the 2030 General Plan to include policies and action items to protect residents and businesses from the risks described above. The policies and action items listed below would require new development proposals to include an analysis of risks associated with levee and/or dam failure, and include measures or design features that would reduce or mitigate these risks. The policies also require the County to support efforts to improve levees throughout the County, which would further reduce risks from levee failure. The implementation of these policies and actions would ensure that subsequent development projects are sited and designed in a manner that would reduce or avoid risks from these impacts. Impacts from these environmental factors would be **less than significant**.

2030 General Plan Policies and Actions that Mitigate Potential Impacts

Policies

Policy SA 1-7: Permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level.

Policy SA 1-8: Designate areas with a potential for significant hazardous conditions for low intensity uses that do not attract significant numbers of residents, visitors, or employees.

Policy SA 1-9: Except as otherwise allowed by Federal or State law, require new buildings intended for human use to be designed in compliance with the latest edition of the California

3.9 HYDROLOGY AND WATER QUALITY

Building Standards Code, California Fire Code, and other adopted standards based on potential risks.

Policy SA 1-16: No development shall take place on or immediately adjacent to an existing landslide unless a geotechnical investigation has been performed and mitigation measures to reduce risks have been implemented. This investigation shall define slide activity and slide limits, and contain specific recommendations regarding avoidance, removal or repair.

Policy SA 1-17: Limit construction and grading on slopes in excess of 30 percent.

Policy SA 1-18: Permit development on soils sensitive to seismic activity only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity.

Policy SA 1-19: Address seismic standards of dam safety, including those promulgated by the State Division of Safety of Dams, for all new and existing dam structures.

Policy SA 1-39: Support coordinated efforts to maintain levees along the Sacramento River and adjacent to canals and waterways throughout the County.

Policy SA 1-40: Support the efforts of levee owners and agencies to redesign and repair levees that do not meet flood protection standards in compliance with adopted State and/or Federal standards.

Policy SA 1-41: Require new development proposals in levee inundation areas to conduct an analysis of risk from failure of levees.

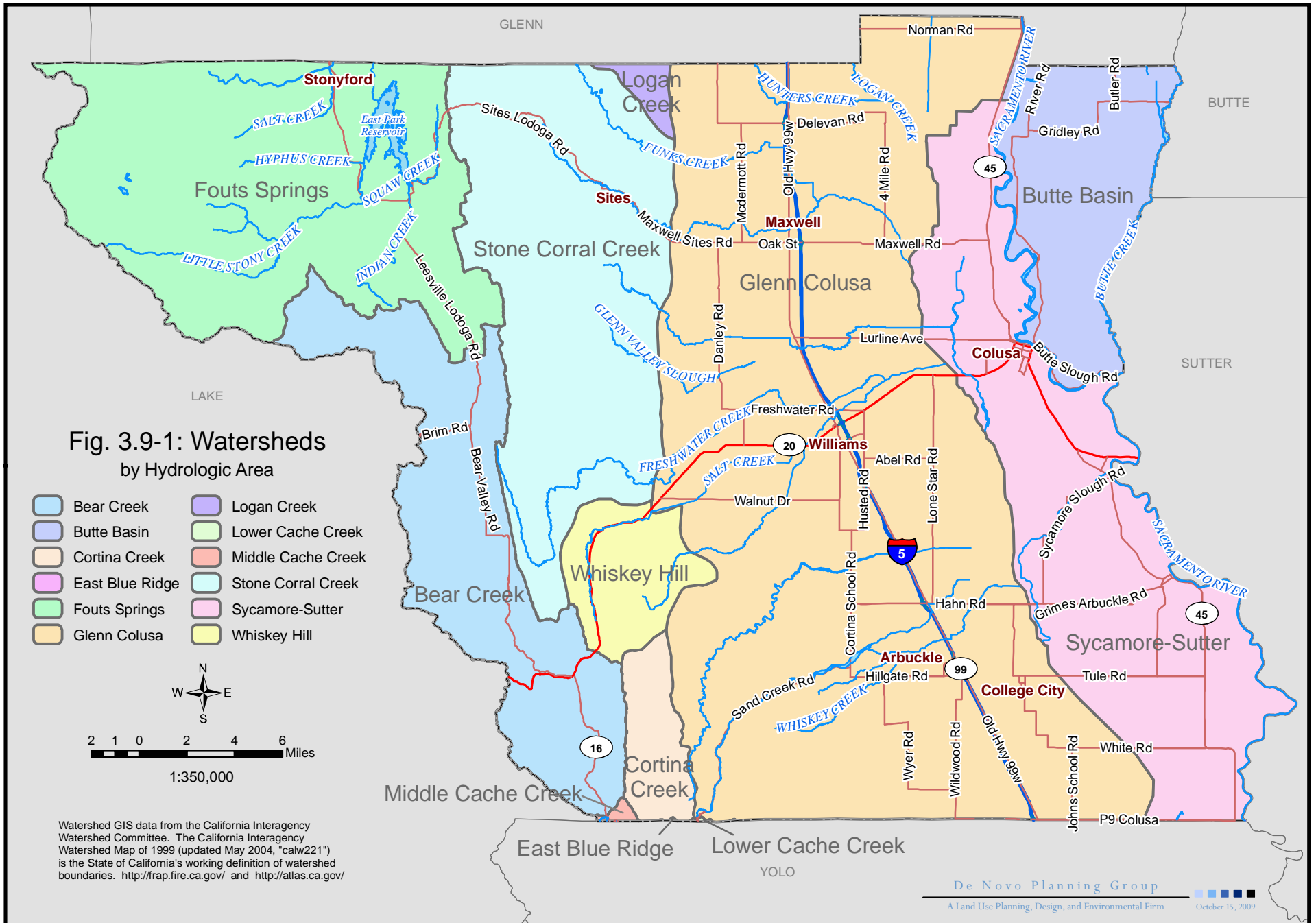
Policy SA 1-42: Require new development proposals in dam inundation areas, as identified in Background Report Figure 4.3-2 or the most current available mapping, to consider risks from failure of these dams.

Actions

Action SA 1-V: Ensure that the construction of new levees or improvements made to existing levees will not adversely divert flood waters or increase flooding in other sensitive locations.

Action SA 1-W: Ensure that the construction of new levees or improvements made to existing levees do not impede the delivery of water supplies used for domestic or agricultural purposes.

Action SA 1-X: Support the efforts of levee maintenance districts with efforts to secure State and Federal funding for geotechnical studies of levees and implementation of associated improvements.



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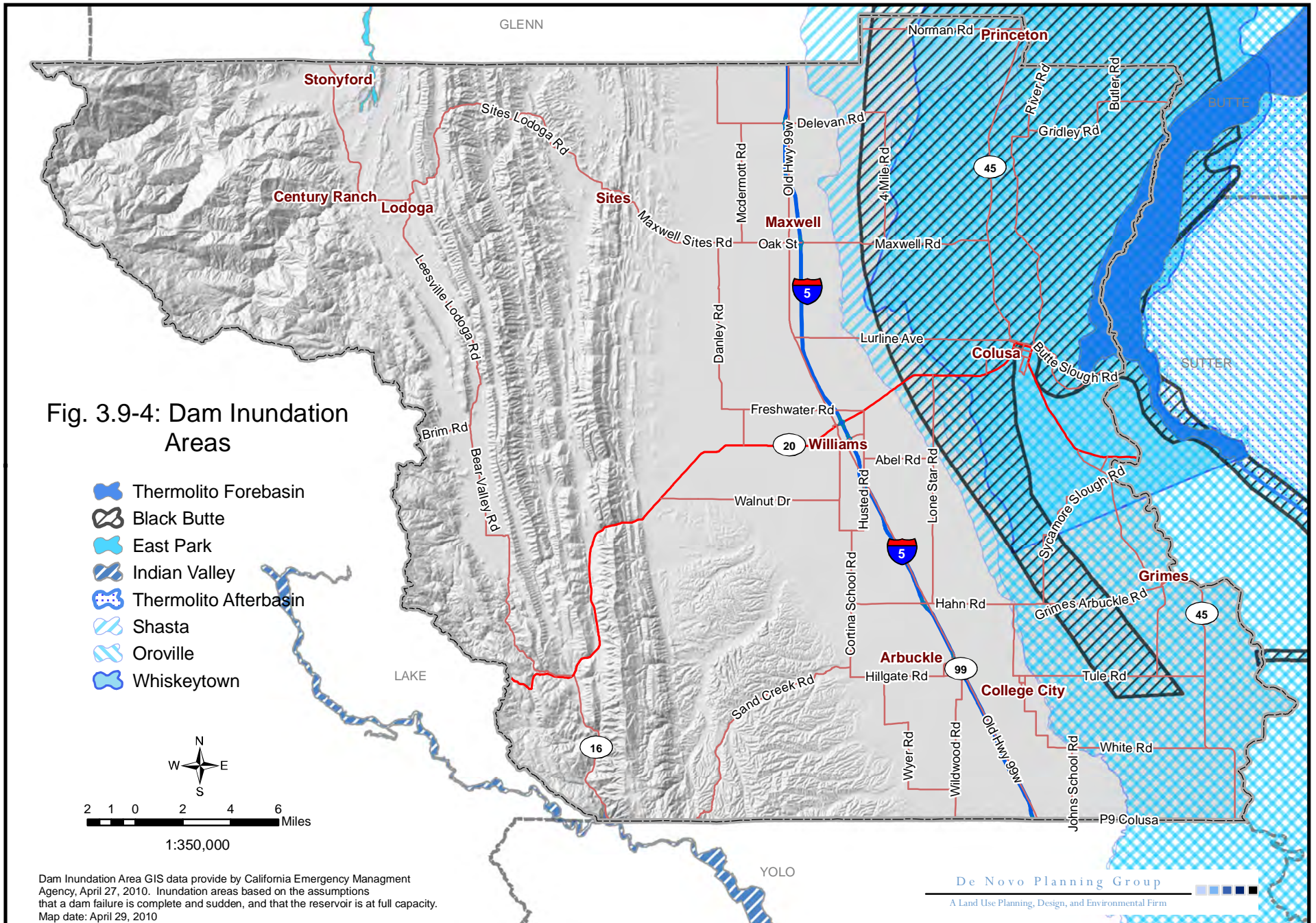


Fig. 3.9-4: Dam Inundation Areas

-  Thermolito Forebasin
-  Black Butte
-  East Park
-  Indian Valley
-  Thermolito Afterbasin
-  Shasta
-  Oroville
-  Whiskeytown



2 1 0 2 4 6 Miles

1:350,000

Dam Inundation Area GIS data provide by California Emergency Management Agency, April 27, 2010. Inundation areas based on the assumptions that a dam failure is complete and sudden, and that the reservoir is at full capacity. Map date: April 29, 2010

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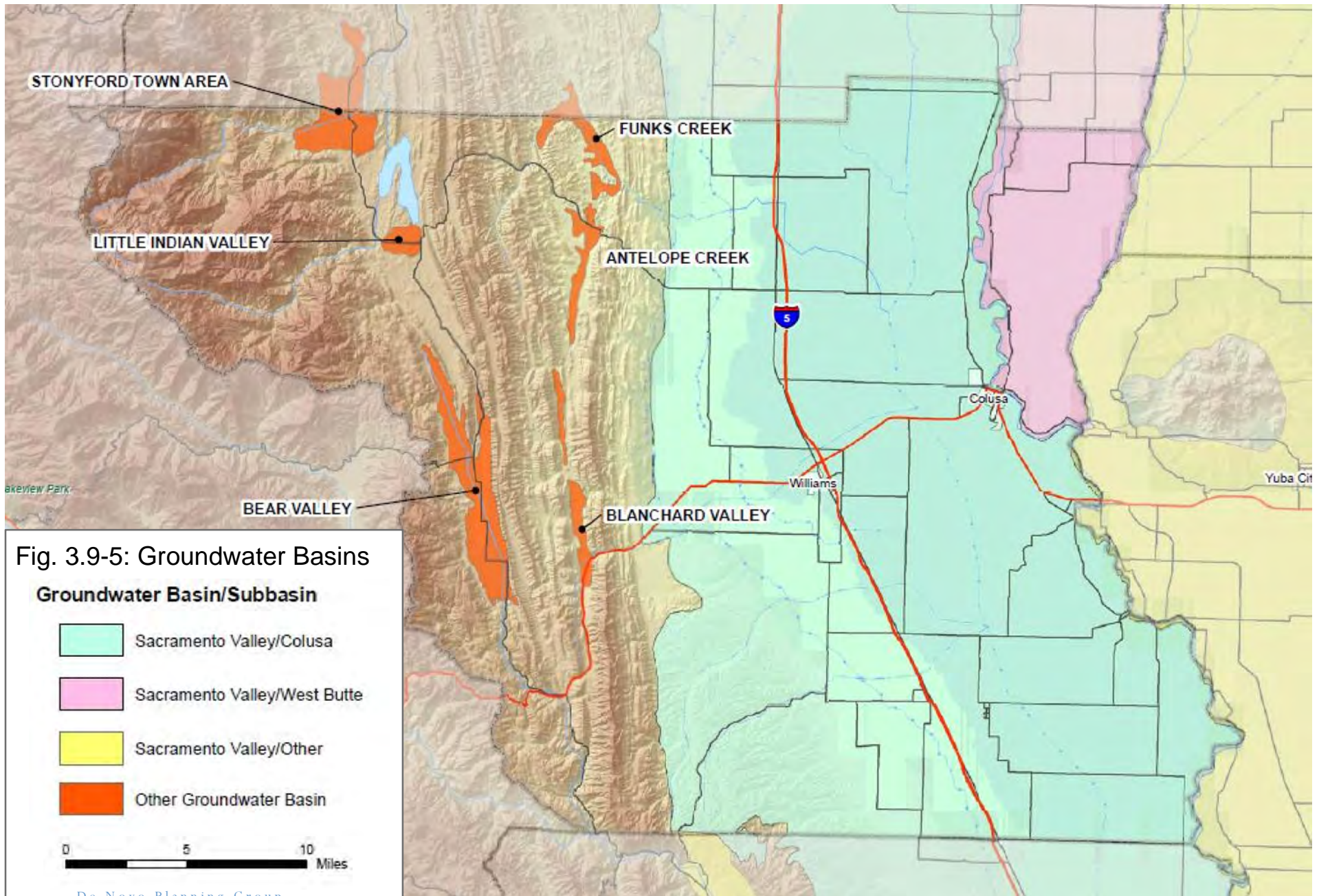


Fig. 3.9-5: Groundwater Basins

Groundwater basins data from California Department of Water Resources, as represented by Wood Rogers' Colusa County Groundwater Management Plan. Map date: April 27, 2010

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Land use plans are adopted to guide development and population growth. This section discusses land use planning, population, and housing in Colusa County and evaluates the potential for significant environmental impacts associated with these topics. No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.10.1 ENVIRONMENTAL SETTING

EXISTING SETTING

Existing land uses in Colusa County are primarily agricultural. The land use pattern is typical of rural counties of the Sacramento Valley. A checkerboard of large acreage farms dominates the eastern half of the County, with land ownership and road alignments following square mile section lines. The land is generally flat and is covered by fields of rice, orchards, and row crops. Views are expansive, framed only by the rolling foothills of the Coast Range on the west and jagged peaks of the Sutter Buttes on the east. As one moves west through the county, large farms give way to much larger cattle and sheep ranches, cultivated fields give way to arid rangeland, and the flat terrain transitions into rolling hills and spectacular upland valleys. Further west, the land becomes yet more rugged and wild, until finally reaching the summit of Snow Mountain in the wilderness area at 7,000 feet above the valley floor.

Urban patterns reflect the County's long-time reliance on agriculture and its ties to the river and railroad for shipping agricultural goods. The first towns to develop in the County—Colusa, Grimes and Princeton—were loading points for barges carrying wheat down-river and overnight stops for stages making their way along the river road. Twenty years later, the next group of towns—Arbuckle, Colledge City and Williams, developed as the Northern Railway made its way up the valley from Sacramento. Meanwhile, in the foothills and mountains, several short lived settlements thrived around mines and hot spring resorts in the late 1800s and early 1900s. By virtue of its designation as County seat, Colusa emerged early as the largest city in the County.

Population and Housing

Colusa County's population has steadily grown over the last several decades as shown by Table 3.10-1. Countywide, the population has increased by 77 percent since 1970 with the unincorporated area increasing by 54 percent from 7,017 to 10,790 persons. Both cities have grown during this period, with Williams showing a significant increase of 236 percent while Colusa's growth rate has been comparable to the unincorporated area. Over the past decade, the population in the unincorporated increased from 9,732 to 10,790 persons, an increase of 11 percent. The average annual change in the unincorporated area from 1970 to 2009 is 1.1 percent.

The County's population grew by about 5,722 or by 35 percent over the last twenty years, while housing grew generally at proportional levels. The largest population growth period occurred between 2000 and 2005 when the County grew by more than 11 percent. Interestingly enough,

3.10 LAND USE AND POPULATION

housing units grew by about the same amount during this four year period after 2005, but due to the 2007-10 economic decline, population growth declined from 11.5 percent to about 5.3 percent. Due to this recent economic decline, growth over the next few years is anticipated to slow, but then increase again. The California Department of Finance has projected that Colusa County will grow by 35 percent to 41,662 by the year 2050. This projected estimate is much more conservative compared to Colusa's adjoining Counties of Sutter (176 percent) to the east, Glen (105 percent) to the north, Lake (58 percent) to the west, and Yolo (58 percent) to the south.

TABLE 3.10-1: POPULATION GROWTH – COLUSA COUNTY AND CITIES

	1970	1980	1990	2000	2009	1970-2009 CHANGE	2000-2009 CHANGE	AVG. ANNUAL CHANGE
Colusa	3,842	4,075	4,934	5,402	5,889	53%	9%	1.1%
Williams	1,571	1,655	2,297	3,607	5,276	236%	46%	4.8%
Unincorporated	7,017	7,061	9,044	9,732	10,790	54%	11%	1.1%
Total County	12,430	12,791	16,275	18,741	21,955	77%	17%	1.6%

SOURCE: DEPARTMENT OF FINANCE, 2009

Over the past decade, growth in the unincorporated area has been spread throughout the County, with significant amounts of growth occurring in Arbuckle, the rural area south of Arbuckle and west of I-5, and to the north and west of Colusa. Growth in individual communities is described below under Community Character.

There are 7,864 housing units in the County, with 4,230 in the unincorporated area. The majority of housing units in the unincorporated area are single family, with mobile homes comprising the second largest type of housing unit.

The vacancy rate in the unincorporated area is 13.6 percent, which means 3,656 of the housing units are occupied. The 3,656 households in the unincorporated area have an average household size of 2.93 persons.

Detailed demographical information discussing the characteristics of the County's population, households, and housing units is provided in the Housing Element Update Background Report.

Land Use Patterns

When discussing land use, it is important to distinguish between planned land uses and existing land uses. The General Plan land use designations identify the long-term planned use of land but do not present a complete picture of existing land uses. Land uses in Colusa County have been historically categorized a number of different ways. Existing land uses can be characterized in broad terms of agricultural cropland, rangeland, national forest and wildlife refuges, rural settlements, developed communities, and cities. As shown in Table 3.10-2, approximately 76 percent of the County's total land area is devoted to cropland or underdeveloped rangeland based on the information from the California Department of Conservation. Twelve percent is in the

national forest and national wildlife refuges. Approximately 85,187 acres are considered other lands, which include roadways, parkland, governmental/semi-public uses, industrial, commercial, and agricultural processing facilities located outside of developed communities and not included in the other categories. Less than one percent is devoted to urban and rural communities.

TABLE 3.10-2: EXISTING LAND USES (2008)

LAND USE CATEGORY	ACREAGE	PERCENT
Cropland	558,591	75%
Grazing Lands *	9,030	1%
National Forest	72,000	10%
National Wildlife Refuge	12,000	2%
Incorporated Cities	2,574	0.3%
Communities*	2,750	0.4%
Rural Subdivisions and Settlements **	1,200	0.2%
Other Lands	85,187	11%
Water Areas	2,000	0.3%
Total	740,932	100%

SOURCE: COLUSA COUNTY DEPARTMENT AGRICULTURAL

*Lands within the communities of Arbuckle, Maxwell, Princeton, Grimes, Stonyford, and in the unincorporated areas adjacent Colusa and Williams

**Includes vacant lots within Century Ranch and East Park Lake View Areas

The Colusa County Assessor’s office categorizes lands at a more detailed level than the Department of Agriculture based on actual land use. The Assessor’s land use and related improvements provides the basis for tax assessments. While this data is not complete for the County (approximately 14 percent of lands are unclassified and an additional 1.6 percent is classified as miscellaneous), this data is useful for determining land use at a greater level of detail than the information from the Department of Agriculture. Table 3.10-3 summarizes land uses based on the County Assessor’s data. Almost 80 percent of the land in Colusa County is used for agricultural purposes, based on Colusa County Assessor’s data. Government lands, which include the wildlife refuges, account for 4.5 percent land uses. Residential, commercial, industrial, and other urbanized/rural settlement uses account for less than 1 percent of the land area in the unincorporated County. Lands categorized vacant 2,526 acres (0.3 percent).

Focusing on the developed categories of residential, commercial, and industrial, which together comprise 0.8 percent of the total land in the County, residential uses comprise the majority of these developed land uses with 4,120 acres. Commercial and industrial uses each account for 0.1 percent of total lands, with 775 and 419 acres, respectively.

3.10 LAND USE AND POPULATION

TABLE 3.10-3: ASSESSED LAND USES – UNINCORPORATED COUNTY

USE DESCRIPTION	PARCELS	ACRES	% OF ACRES	DWELLING UNITS	NON-RESIDENTIAL SQ. FT.
Agriculture					
Agricultural	4,349	312,859	43.2%	420	2,341
Agricultural Preserve	1,710	258,336	35.6%	39	194,980
<i>Subtotal - Agricultural</i>	<i>6,059</i>	<i>571,195</i>	<i>78.8%</i>	<i>459</i>	<i>197,321</i>
Commercial					
Bank	2	0.7	< 0.1%	0	8,578
Commercial	125	734	0.1%	14	318,242
Medical/Dental/Labs	6	3	< 0.1%	0	6,629
Office	6	5	< 0.1%	0	0
Hotel, Motel, Resorts	1	4	< 0.1%	0	4,022
Restaurant	19	19	< 0.1%	0	60,190
Retail Sales	38	8	< 0.1%	0	95,008
<i>Subtotal - Commercial</i>	<i>197</i>	<i>775</i>	<i>0.1%</i>	<i>14</i>	<i>492,669</i>
Industrial					
Automotive Uses	27	21	< 0.1%	0	62,347
Industrial	40	398	0.1%	0	117,356
<i>Subtotal - Industrial</i>	<i>67</i>	<i>419</i>	<i>0.1%</i>	<i>0</i>	<i>179,703</i>
Residential					
Mobile/Manufactured Home Park	7	12	< 0.1%	68	0
Mobile/Manufactured Homes	55	89	< 0.1%	86	0
Multiple Family	125	435	0.1%	423	0
Single Family	2,268	3,276	0.5%	2,268	0
Residential	75	308	< 0.1%	61	30,455
<i>Subtotal - Residential</i>	<i>2,530</i>	<i>4,120</i>	<i>0.6%</i>	<i>2,906</i>	<i>30,455</i>
Government					
Government	437	32,841	4.5%	0	20,250
Recreation					
Recreational	4	143	< 0.1%	0	21,896
Other Categories					
Miscellaneous	214	11,258	1.6%	0	56,471
No Category Assigned	614	101,602	14.0%	0	0
Vacant					
Vacant	1,773	2,526	0.3%	6	0
TOTAL	11,895	724,878	100.0%	3,385	998,765

SOURCE: COLUSA COUNTY ASSESSOR, 2009; DE NOVO PLANNING GROUP, 2010

URBAN AND RURAL COMMUNITIES

The county’s two incorporated cities—Colusa and Williams—encompass about 2,574 acres. The largest unincorporated town and third largest community in the County, Arbutle, is somewhat smaller than Williams. There are five other unincorporated communities in the County, each originally laid out with narrow rectangular lots along a grid of right-angled streets. Maxwell is the largest of these communities, followed by Princeton, Grimes, Stonyford and College City. Together, these established incorporated and unincorporated towns cover a total area in “urban” uses of about 5,451 acres with a population that exceeds 17,000. This urbanized area has more than doubled in size over the last twenty years by 2,900 acres. The majority of urbanized and potentially urbanized areas in the County consist of residential use. Table 3.10-4 provides a distribution of land use between the various communities.

TABLE 3.10-4: DESIGNATED LAND USES BY COMMUNITY (UNINCORPORATED AREA)

LAND USE	ARBUCKLE		COLLEGE CITY		COLUSA		GRIMES	
	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS
Commercial	33.5	74	4.8	15	90.9	17	9.8	26
Industrial	61.8	30	139.5	9	799.8	19	7.6	12
No Label ¹	46.0	7	-	-	27.4	4	-	-
Parks & Recreation	24.8	3	7.9	2	252.4	10	-	-
Public/Semi-Public	77.5	8	-	-	159.9	3	6.3	2
Rural Residential	140.8	83	57.7	123	580.6	124	20.2	14
Urban Residential	319.1	928	-	-	529.2	399	39.6	102
Total	703.5	1,133	209.9	149	2,440.2	572	83.5	156
LAND USE	MAXWELL		PRINCETON		STONYFORD		WILLIAMS	
	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS
Commercial	285.5	105	4.8	20	7.9	25	76.0	17
Industrial	749.5	32	-	-	-	-	277.4	18
No Label ¹	122.2	13	-	-	-	-	92.8	6
Parks & Recreation	-	-	-	-	-	-	10.6	1
Public/Semi-Public	19.6	3	30.7	11	141.3	10	11.8	1
Rural Residential	1,002.0	25	-	-	76	100.8	402.8	30
Urban Residential	278.3	403	78.0	131	-	-	513.2	138
Total	2,457.1	581	113.5	162	225.2	135.8	1,384.6	211

SOURCE: COLUSA COUNTY ASSESSOR DATA, 2009; DE NOVO PLANNING GROUP, 2010

¹No Label: This category includes all federal, state, and other agency lands that do not have a General Plan land use designation.

Approximately 60 percent of the population in the unincorporated County resides within the eight identified primary communities. Table 3.10-5 provides estimates of population within the various

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communities. About 73 percent of all residents living within the primary unincorporated areas are located in the three largest communities of Arbuckle, Colusa, and Maxwell. Arbuckle and the unincorporated areas of Colusa and Maxwell have experienced the greatest rates of growth over the last decade. More specific details of these urban communities are discussed later in this chapter under Community Character.

TABLE 3.10-5: COMMUNITY POPULATION, HOUSING UNITS, AND COMMERCIAL/INDUSTRIAL USES

COMMUNITY	POPULATION		POP. INCREASE	GROWTH RATE	HOUSING UNITS ¹	COMMERCIAL/ INDUSTRIAL SQ. FT. ²
	2000	2009				
Arbuckle	1,968	2,472	504	25.6%	962	104,892
College City	211	226	15	7.0%	88	7,818
Colusa Area	1,117	1,239	122	10.9%	482	127,387
Grimes	334	339	5	1.6%	132	21,113
Maxwell	999	1,015	16	1.6%	395	132,793
Princeton	379	398	19	5.0%	155	13,346
Stonyford/ Lodoga	464	501	38	7.9%	195	9,704
Williams Area	479	257	26	11.1%	100	21,771
Total	5,738	6,483	745	14.0%	2,464	438,824

SOURCE: U.S. CENSUS BUREAU 2000, CALIFORNIA DEPARTMENT OF FINANCE 2009, AND COLUSA COUNTY PLANNING AND BUILDING DEPARTMENT ESTIMATES BASED ON BUILDING PERMITS ISSUED.

¹Housing Units: Housing unit numbers are approximated based on Colusa County Assessor Data, which was extrapolated to the 2009 Department of Finance estimate of 4,230 units in the unincorporated area. These numbers include occupied housing units as well as seasonal residences, second units, and unoccupied housing units.

²Commercial and Industrial Square Feet (sq. ft.)

RURAL SETTLEMENTS

The remaining 4,265 people (41 percent) in unincorporated Colusa County live in isolated rural homesites, in small settlements with permanent populations of under 100 people, and on scattered farms. Only about three percent live in small rural communities. Some of the rural homesites are located on pockets of private land within the boundaries of the Mendocino National Forest. Others are scattered in the almond orchards southwest of Arbuckle, while still others are located in the Century Ranch area and in rural subdivisions near Stonyford.

The small settlements include Sites, Delevan, Leesville, Sycamore, Lambertville-Clarksville, Lodoga, and Millers Landing. Some of these communities were once considerably larger than they are today. With the growth of “agri-business”, the decline of the railroad, and the tremendous savings in travel time brought on by the automobile, the smaller farm towns have not been able to keep pace with the larger communities. For example, once a populated and prosperous community, Delevan now consists of a rice dryer and grain warehouse and less than one dozen homes. Leesville was once a stage stop on the steep road between Williams and the resorts of western

Colusa County. The Leesville Hotel, built in 1878 and now a private residence, is all that remains of the town. Wilbur Springs, a historic hot springs resort on a 1,800 acre preserve, is active and maintains a permanent community of about 40 residents with guest accommodations. In this western part of the County where there were a number of active hot springs resorts, Wilbur is the last remaining in the County. The community of Sites was initially developed to serve a nearby stone quarry and was the terminus of a rail line from Colusa between 1886 and 1916. The railroad was never completed to Clear Lake as planned, and the hotel and school in Sites were eventually abandoned. Today, the community consists of about five homes and an abandoned park. Table 3.10-6 provides rough estimates of population and acres for these rural communities.

Lambertville was established as a duck hunting club and most of its 85 bungalows and trailers are occupied on a seasonal basis only. The dozen homes in adjoining Clarksville, also a duck hunting center, are occupied on a more permanent basis. Lodoga was initially developed as a strip of vacation cabins along the banks of Indian Creek. Sycamore was one of the County’s first settlements but today is little more than a crossroads midway between Grimes and Colusa. Millers Landing consists of about a half dozen homes and a grain dryer along the river.

TABLE 3.10-6: RURAL SETTLEMENT POPULATION (2009)

COMMUNITY	POPULATION	LAND AREA
Delevan	14	30 acres
Lambertville-Clarksville	26	26 acres
Leesville	6	10 acres
Miller’s Landing	14	30 acres
Sites	10	30 acres
Sycamore	5	20 acres
Wilbur Springs	40	1,800 acres
Other Rural	4,114	NA
Total Rural:	4,229	NA

SOURCE: DE NOVO PLANNING GROUP, 2010

FARMS AND RANCHES

Stretching across the floor of the Sacramento Valley and into the foothills beyond are some 645 farms and ranches. Cropland occupies about 558,591 acres, or almost 75 percent of the County’s total land area. Nearly all of the cultivated agriculture is located in the Sacramento Valley, but some farming also takes place in the upland Indian, Antelope, and Bear Valleys. Ranches occupy about 200,000 acres, just over one-quarter of the County’s land area. A more detailed description of farming and ranching is found in Section 1.3, Agriculture Resources.

COMMERCIAL LANDS

The 1989 General Plan designates 513.2 acres of land on 313 parcels throughout the County for commercial uses. Assessor’s data shows that 775 acres of land on approximately 197 parcels have existing commercial uses, including offices, medical offices, a bank, 19 restaurants, retail

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establishments, and other general commercial uses. These commercial sites are developed with approximately 492,669 square feet of facilities. Commercial uses in the unincorporated area are mainly located in Arbuckle and Maxwell, as well as the area north of Colusa. The smaller communities, Grimes, Princeton, and Stonyford, have community-serving commercial uses such as bars, restaurants, and convenience stores.

INDUSTRIAL LANDS

The 1989 General Plan designates 3,572.8 acres of land on 264 parcels throughout the County for industrial uses. Assessor's data shows that 419 acres of land on approximately 40 parcels have existing industrial uses. Industrial lands are developed with approximately 179,703 square feet of facilities. As shown on Figures 3.10-1, centers of industrial activity are concentrated along the I-5 corridor and in the vicinity of Colusa. Industrial uses that complement agricultural activities are widely dispersed across the valley. Grain drying and storage facilities are located at several points along existing and abandoned railroad lines, I-5, and SR 45. A variety of industrial uses are in the vicinity of the Colusa County Airport, located south of the City of Colusa along State Route 20/45.

A number of quarries, which are not currently active, are located in the County and have historically been mined for limestone, sandstone, onyx marble, and other materials.

A PG&E Generating Station is located in the northern area of the County, about five miles northwest of Maxwell. The generating station and electrical switchyard comprise about 31 acres of a 100-acre parcel and produces approximately 660 megawatts of power, enough electricity to serve approximately 500,000 homes.

FOREST AND RESOURCE CONSERVATION LANDS

Over 35 percent of the county consists of forested rangeland, resource conservation lands, and National Forest lands. Much of the rangeland is owned by the Bureau of Land Management (BLM) or the Bureau of Reclamation. BLM Resource Management Lands are concentrated along the Lake County border, the Cortina Ridge, and on the chaparral-covered hills between Lodoga and the Antelope Valley.

The Colusa, Delevan, and Sacramento National Wildlife Refuges cover about 12,000 acres of the low-lying Colusa Basin and provide a haven for wildfowl in the Sacramento Valley Flyway. The Colusa County portion of the Mendocino National Forest covers over 70,000 acres, or about 10 percent of the county's total land area. Developed uses in the forest include the Fouts Springs Boys Camp and recreational facilities at Letts Lake. Use of the National Wildlife Forest lands are more thoroughly discussed in the Conservation and Open Space Elements of this plan.

Mendocino National Forest: The Mendocino National Forest (Forest) straddles the boundaries of Colusa, Glenn, Lake, Mendocino, Tehama, and Trinity Counties. The Forest is located in the eastern portion of the County and extends from the foothills to the eastern county line, encompassing approximately 72,000 acres. The main features of the Forest are extensive backcountry areas with limited access, including the Snow Mountain Wilderness, and a variety of recreation uses, includes

Off Highway Vehicle (OHV) trails, hiking trails, and campsites. The Stonyford Ranger District offices, located just east of Stonyford, provide administrative facilities and housing for forest workers.

Fouts Springs Probation Camp: The Fouts Springs Probation Camp for Boys is located in the County in a remote part of the Mendocino National Forest at the base of the mountain range. There is no secured fencing around the perimeter of the facility due to its remote location. The camp has dormitory-style residences and freestanding facilities such as a dedicated mess hall and dining area, and a classroom area. The capacity of the camp is 60 juveniles. The facility operated under a joint powers agreement between Solano County and Colusa County, and was run by the Solano County Probation Department. Due to funding shortfalls, the facility was closed in July 2011. Efforts are underway to secure additional funding, but it is not known if the facility will re-open or not.

Colusa National Wildlife Refuge: The Colusa National Wildlife Refuge is comprised of 4,567 acres, which includes seasonal marsh, permanent ponds, and uplands. Visitors can access the auto tour, walking trail, and photography blind. The refuge offers wildlife observation, seasonal hunting, photography, and environmental education opportunities.

Delevan National Wildlife Refuge: The Delevan National Wildlife Refuge consists of 5,877 acres, which include 4,600 acres of managed wetlands (summer wetlands and seasonally flooded wetlands) and 984 acres of unmanaged wetlands, grasslands, alkali meadows, vernal pools, and riparian habitats. Public recreation activities include photography and wildlife observation from perimeter roads and seasonal hunting on the southern portion of the refuge.

Sacramento Wildlife Refuge: The Sacramento Wildlife Refuge is located in northern Colusa County and southern Glenn County and consists of 10,819 acres. This refuge includes 7,086 acres of managed wetlands and 3,360 acres of unmanaged wetlands, grasslands, alkali meadows, vernal pools, and riparian habitats. The alkali meadow and vernal pool habitats on the refuge represent some of the largest remaining areas of this habitat type in California. The refuge has on-site headquarters and visitor center, as well as an elevated viewing platform and photography blinds. The refuge offers a variety of recreation activities, including hunting, wildlife observation, photography, environmental education, and interpretation.

Pending and Approved Projects

Many of the approved and pending development projects in the County, including the incorporated cities, have been placed on hold with the downturn in the economy. Several projects have been partially developed and are now developing at a slower pace or have ceased development. Table 3.10-7 lists recently approved and pending projects in the County of Colusa, as well as major projects in the incorporated cities with an emphasis on projects that would border the unincorporated area or involve annexation. The most recent annexation in Colusa County involved the annexation of the Walnut Ranch subdivision into the City of Colusa, which was approved by affected voters in April 2011. The annexation does not include proposals for new development, but would allow the subdivision to connect to City of Colusa water and wastewater

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infrastructure as a response to ongoing water quality issues from water currently provided by the Del Oro Water Company.

TABLE 3.10-7: APPROVED AND PENDING DEVELOPMENT PROJECTS

PROJECT	DESCRIPTION	STATUS
COUNTY OF COLUSA		
Reddington Ranch Arbuckle	Subdivision with 138 single-family residential lots and associated infrastructure for transportation and drainage purposes on approximately 34 acres.	Approved and map finalized. The site has been graded and partially constructed. 18 lots have been developed or are under construction; 120 lots remain to be developed.
The Richter Group Maxwell	Project with 19 single family residential lots and associated infrastructure for transportation and drainage purposes on approximately 5 acres.	Tentative map approved.
Wildwood Estates Arbuckle	Subdivision with 31 single family lots on approximately 6 acres.	Approved and map finalized. The site has been graded and partially constructed. Five lots have been developed; 26 lots remain to be developed.
Harris Court Partners Southwest of Williams	Tentative parcel map to divide 12 parcels totaling 2,467 acres into 19 large parcels zoned Agricultural Preserve.	Approved by Planning Commission, map not yet finalized.
LC Dennis Co.	Tentative subdivision map to divide 13.95 acres into nine single family residential parcels and a remainder.	Approved by the Planning Commission, pending approval by the Board of Supervisors of an associated General Plan Amendment.
TOTAL	Approved: 51 acres; 23 single family lots developed or under construction, 188 single family lots remain to be developed, 19 large Agriculture Preserve lots. Pending: 19 single family residential lots	
CITY OF COLUSA		
Brookins Ranch	161 acres, 586 single family homes, fire station, and supporting parks/recreation uses.	Application to annex into the City of Colusa has been withdrawn.
Colusa Industrial Properties (CIP) South of the city	Annexation of existing industrial and commercial campus. Detailed project information was not made available.	CIP entered into a 15-year agreement with the City of Colusa in 2003 but ended up receiving entitlements through the County. In 2009, Mr. Hulbert of CIP approached the City regarding re-engaging the agreement. A formal application has not been made to LAFCO.
Riverbend Estates Northeast area – east of Bridge St/Market St	376-unit subdivision (271 single family units, and 105 multi-family units), rezone to Planned Development district, and supporting infrastructure.	Application is being processed.

Tennant Estates South area adjacent to Wescott	101 unit subdivision	Tentative map approved.
TOTAL	Approved: Approved 101 single family units. Pending: Approximately 1,000 single family units and supporting uses.	
CITY OF WILLIAMS		
Valley Ranch	Subdivision of approximately 550 single family residences.	Final map recorded. Approximately 370 units completed.
Meadowlands Subdivision	160-unit single family subdivision.	Tentative map approved.
George Estates	123-unit single family subdivision.	Tentative map approved.
McCarl Ranch	181-unit single family subdivision.	Tentative map approved.
V&R Investments – Unit 3	83-unit single family subdivision.	Tentative map approved.
Hotel Ruggieri Way	Approximately 100 room hotel.	Design review approved.
TOTAL	Approved: 370 single family units developed or under construction, 727 single family lots remain to be developed. One approved hotel remains to be developed.	

SOURCE: CITY OF WILLIAMS, 2010; CITY OF COLUSA ENGINEER’S REPORT, 2009; COLUSA COUNTY DEPARTMENT OF PLANNING AND BUILDING, 2010

COMMUNITY CHARACTER

City of Colusa

The City of Colusa, one of the two incorporated Cities in Colusa County, is the largest community in terms of population and land area in the County. It is located in the eastern area of the County next to the Sacramento River at the crossroads of Highway 20 and 45. Colusa is nestled in a bend of the Sacramento River with vast acreages of agricultural land extending beyond its boundaries. Colusa is adjacent to the 4,507-acre Colusa National Wildlife Refuge, which primarily consists of intensively managed wetland impoundments and serves as one of the primary wintering areas for waterfowl in the Sacramento Valley. Visually, the natural landscape extends far beyond the City’s boundaries. The area’s flat topography, with an approximate elevation of 52 feet above sea level, allows for expansive scenic views, including those of the Sutter Buttes to the east and the Coastal Range to the West. The area includes extensive agricultural lands at the perimeter of the City, riparian habitat along the Sacramento River, tree lined streetscapes that help define the City’s urban boundaries and key entries along Highway 20/45. Colusa has an estimated population of 5,889 in the incorporated area and an additional 1,239 persons in the surrounding developed areas. The City had a growth rate of over 8 percent between 2000 and 2009.

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LAND USE

Colusa is the largest community in Colusa County with City boundaries encompassing 1,174 acres and an additional 1,668-acre SOI with a total planning area of 2,842 acres. The City's incorporated boundaries include over 2,000 housing units, primarily consisting of detached houses, however, over 20 percent consist of apartment units and mobile homes. Colusa has grown outward to the south from its historic commercial and residential core at the north end of town where the Sacramento River levee creates a formal urban boundary. An additional 400 homes are located in the unincorporated area. Most development in Colusa has been contained within the original grid of streets until the 1960s when the townsite was built out and peripheral land was developed with housing.

Development that has occurred since the 1960s has followed more modern suburban street patterns. Most of the residential growth, to the south has been along Wescott Road and Bridge Street, primarily in subdivisions consisting of 7,000 to 12,000 square-foot lots. However, a number of the newer subdivisions have been constructed more recently to the east of Wescott Road west of Highway 20/45 and north of the abandoned railroad tracks. Many of these have larger sized lots.

The City has two main retail districts. The first district consists of the central downtown area centered around 5th and Market Streets in the original core of the townsite. The other is on the east side of town east of Bridge Street (Highway 20/45) at Sioc Street where the 55,000 square foot Town and Country Shopping Center was developed a few years ago. A smaller commercial district is located along Fremont Street near 5th Street. While the shopping center has significant commercial square footage, underutilized commercial space remains around the shopping center as well as along J Street and parcels north of Market Street extending to the Sacramento River. Although the town is active with commercial business, there are significant vacant commercial buildings particularly in the central downtown area.

The City currently has about 15.5 acres of parkland and recreational acres. This does not include recreational areas of the high school or the Fairgrounds. The Colusa-Sacramento River State Recreation Area provides a passive recreation and boat launch facility. There is also a public golf course on the southeast portion of town near the airport.

Next to single family residential development, industrial use constitutes the largest land use in the City. However, only 20 acres of vacant industrial zoned land remain inside the City limits. Most agriculturally-related industrial uses in the City are located along Main Street near the river. Large-parcel uses are located to the south part of the town, including the Colusa County Fair Grounds and the High School.

Outside of the City limits, land uses are predominately residential and industrial. Established in 1961, the Colusa County Airport is the only public airport in Colusa County. It is located on about 81 acres southeast of Colusa and west of SR 20. Residential uses in the unincorporated area are mainly rural residential uses located along SR 45 to the north and a mixture of rural residential and

ranchette uses generally north and south of Lurline Avenue to the west of the City. Industrial uses in the unincorporated area near Colusa are primarily located in the vicinity of the Colusa Industrial Park and the Colusa County Airport, located to the southeast. Additional industrial and commercial frontage is available along SR 20. Colusa Industrial Park (CIP) has an assortment of industrial and commercial uses, as well as available office sites and lands zoned for light and heavy industrial uses. CIP's existing commercial uses include County government, business offices, and medical and dental facilities. CIP's industrial uses include multiple grain and rice processing facilities, tomato processing, particle board manufacturing, concrete and brick block production, a vegetable seed breeding facility, a mechanical assembly company, and a mushroom grower. Other businesses in these areas include farm equipment rental, and sales, a petroleum supplier, warehousing, rice milling and fruit drying. Over 1,000 acres of land are owned by Colusa Industrial Properties in this vast area north of the airport.

FOCUS AREAS

Growth in the unincorporated area around Colusa is likely to primarily occur in the Special Planning Areas (SPAs) designated by the City's General Plan (see Figure 3.10-2), which are described below.

SPA 2: SPA 2 consists of Brookins Ranch Estates; a 161.4-acre vacant site to the southwest of Colusa. It is bounded on the west by Will S. Green Avenue, on the north by Colusa High School, on the east by Tennant Estates subdivision (and approximately one-quarter mile west of Wescott Road), and on the south by the old railroad right-of-way. This site is designated Agriculture Transition (A-1) in the County General Plan, but has not been farmed recently. It contains farm buildings along with a house. The Brookins Ranch Estates project would involve development of approximately 600 detached dwellings, a fire station, neighborhood parks and some commercial development in a planned development scenario.

This area contains a mixture of residential, agricultural and agriculturally-related industrial uses. Adjoining the City limits along Ware Avenue between Third and Eighth Streets, there are about 30 homes on 1/4-acre lots. This area is similar in character to the adjoining residential neighborhood within the City limits. To the south, Fifth Street extends beyond the City limits for about one-half mile. Fifth Street faces deteriorating conditions with a mix of industrial and residential uses that have impacted neighborhood investment. There are signs of abandonment and blight in several sections of this neighborhood.

SPA 3: SPA-3 is a 310 acre site, known as the Vann Property, located adjacent to the western boundary of the City. The site is bounded by State Route 20 to the east and south, and agricultural land to the west and north. The site is currently designated Agricultural-Transition in the County General Plan with a small piece designated for commercial land use. This development would consist of a mix of uses, including a variety of about 1,200 dwellings (mostly detached houses) with some higher density residential, 25 acres of commercial, a school, and about 51 acres of parks/open space.

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The northern portion of this area continues to undergo a slow transition from orchard and field crop uses to rural residential uses. There are a number of older residential subdivisions close to the City with ¼ acre lots. There is also a 40 space mobile home park adjoining the City limits. The more recent development is occurring through small subdivisions of farms or orchards into smaller parcels for large house sites. The area still contains a viable agricultural base, but the acreage in agricultural production has declined steadily with the influx of “ranchettes”. There is also a 55-acre area lying east of the City limits and west of the Southern Pacific Railroad bed, between Lurline and Wilson Roads, within the SPA 3 area, that has its own unique set of planning challenges. This area has a number of legal, non-conforming residences (residences that were built before they were expressly prohibited by zoning), so there is a mix of industrial uses, underutilized buildings, and abandoned shacks interspersed with houses, that have resulted in some deteriorated conditions. Some of the planning challenges cited in the 1989 County General Plan is land use incompatibility problem with the strip of land one-half block wide running the length of 14th Street’s west side. This strip has been zoned industrial, but there is significant residential interspersed in and around the industrial uses. This incompatibility has lead to lack of investment into the neighborhood.

SPA 4: SPA 4, Colusa Riverbend, encompasses approximately 442 acres northeast of the City, and is bounded by the Sacramento River to the north and east, Highway 20/45 to the west and Moon Bend Road to the south. This whole area is proposed for future subdivision development to accommodate up to 2,530 dwelling units. An additional contiguous 76-acre parcel is located inside the City limits and would be developed first.

This area was originally laid out as an extension of the 1850 Colusa townsite. On paper, at least seven of the east-west streets in the City were extended three blocks to the east. Only a few of these streets were constructed and many of the lots were consolidated. About 60 homes exist in this area, mostly along the Clay and Parkhill Streets. The homes are served by City water, but have private septic systems. This property is currently being used for a mix of agriculture, including a variety of row crops and orchards, but also contains a number of residents.

Commercial areas on the east side of Bridge Street, also within SPA 4, include the Town and Country Shopping Center which were annexed into the City in the 1990s. Most of the agricultural and residential territory in this area is still within the County. Crommer Avenue extends ¾ miles east to the river, providing access to several residences, orchards and a harvester manufacturer and two bulk oil plants. There is also an old rice storage building along the river at the end of Main Street.

SPA 5: SPA 5 is located south of the City and comprises about 137.5 acres of the 1,048 acre Colusa Industrial Properties site. The site is roughly bounded by Highway 20/45 to the east, Colusa Golf Club to the north, Wescott Road to the west, and agricultural land to the south. Although some of this area has undergone development of industrial uses, there are approximately 127 acres that are vacant and designated in the County’s General Plan for industrial use. Future planned uses

consist of about 200 residential units, an apartment complex, about 28 acres of commercial and about 56 acres of open space, part of which would include a redesigned 9-hole golf course.

SPA 6: The fifth and last SPA is the Airport Influence Area, which consists of the Airport influence area and a portion of the Colusa Industrial Park-specifically, the Airport Safety Zones, which include the clear zone, approach/depart zone and overflight zone as delineated in the Colusa County Airport Comprehensive Land Use Plan. Most of the land in the overflight zone is either used for airport facilities or is in open space. A large area surrounding the overflight zone allows for residential development of up to one dwelling per five acres.

The City's proposed land use pattern in this area reflects the area's proximity to the Colusa Airport with general aviation facilities adjoined by support uses such as hangars, and light industrial uses. Aircraft noise and safety hazards have precluded significant residential uses near the runway. Most of the land between the City and the airport is contained within the Colusa Industrial Park. Developed uses consist of agriculture processing, a mini-storage warehouse, crop duster businesses, chemical supply companies, and a water pump and a well drilling business. Two professional office buildings house agricultural-service offices. There is also a sufficient number of large vacant parcels within the park to accommodate the City's projected industrial growth.

Walnut Ranch Subdivision: Just south of the City's boundaries, along Wescott Road, is the Walnut Ranch residential subdivision of about 78 homes. There are some remaining vacant lot sections of this subdivision that remain undeveloped. The residents of this area are working with the City to determine the feasibility of annexation, in order to receive City water and sewer services. Further south of the subdivision, south and east of SPA 2, smaller orchard parcels open up to more expansive fields of rice and row crops. Lot splitting to the west of Walnut Ranch has created a few residential estate parcels with houses. Just south of Walnut Ranch and the City limits is about 150 acres of agricultural land used for row crops.

North of the River: The Sacramento River clearly defines the northern edge of the City of Colusa. Land on the north bank is used for orchards and field crops with virtually no residences. The only developed uses here are a commercial boat landing and recreational mobile home park, both located south of the Colusa Weir.

City of Williams

The City of Williams, one of the two incorporated Cities in Colusa County, is centrally located in Colusa County. With an approximate elevation of 82 feet above sea level the land in and around Williams is generally flat. Williams has an estimated population of 5,287 in the City and approximately 257 persons in the unincorporated area. With a growth rate of over 44 percent between 2000 and 2009, the City is the fastest growing area in the County.

LAND USE

Williams is the largest community along the 65-mile stretch of Interstate Highway 5 between Woodland and Willows and is the major stopping point for gas, food and lodging. It also has the

3.10 LAND USE AND POPULATION

largest area of developed commercial property in Colusa County. Commercial use reflects the large acreage devoted to freeway-dependent uses, such as motels, restaurants, and service stations. Predominately, however, the land use pattern reflects the town's historic orientation along the railroad and more recently its urban growth transition along the east side of Interstate 5. Williams is laid out along the north and south sections of the railroad where the historic business area extends perpendicular to the railroad along North 7th Street (the major east-west road and Old Highway 99). Residential neighborhoods lie north, south and west of the district. Overall, the City boundaries are well-defined between higher density urban uses inside the City limits and rural and agricultural uses around its perimeter.

The highway-oriented commercial businesses, which are concentrated at the northeast, and particularly the southwest and northwest corners of the Interstate 5/Business 20 ("E" Street) interchange and west towards the railroad tracks take up a greater land area than the older downtown historic area. Although these businesses serve the local population, their primary customers are highway travelers. On the west side of Interstate 5, highway oriented uses consist of several motels, a supermarket and a number of restaurants, variety stores, gas stations and offices. Commercial, industrial and public uses are intermixed along North 7th Street in the historic area. Moving further west on E Street by a few blocks, commercial, residential and public uses are intermixed with a central district that includes City Hall, the police and fire station, the library and a market. Most of the community's industries are located on parcels fronting the railroad. Williams' older housing stock is proportionally distributed between the north and south sides of E street by several blocks. Several large acreage uses stand out in the City of Williams. On the west side, the elementary, middle, and high schools share a common 40-acre campus. Other major land uses consist of two City parks, the Sacramento Museum, and 7 churches.

Major industrial uses include a feed mill, a grain warehouse, and a pole manufacturer. There is also a machine shop in the downtown and a number of trucking businesses and storage lots and gas wells along North 7th Street.

The more recent growth in the City has been on the east side of Interstate 5, where farmland is being converted to a variety of commercial or institutional uses and residential subdivisions. New fast food restaurants, gas stations and a motel have been constructed at the southeast corner of the interchange at Van and E Streets. Van Street then extends south to recently constructed residential subdivisions consisting primarily of single ownership houses built on separate lots. A new State Highway Patrol facility was also recently constructed and is in operation along the east boundary of the City at the northwest corner of E Street and Husted Road. A branch of Yuba Community College and the Colusa County Office of Education Facility are planned for the vacant land at the northeast corner of the interchange. All these changes have and will continue to modernize and change the character of Williams.

FOCUS AREAS

Relative to the Colusa County General Plan Update, particular areas of focus are those located outside the City limits. These include areas both inside and outside the William's Sphere of

Influence (SOI). The City's incorporated boundaries cover approximately 1,400 acres (2.19 square miles) which is about two-thirds of the City's 1,900 acre SOI (approximately 3 square miles). Most of the unincorporated areas within the SOI (500 acres) are located to the south and east of the City's existing boundaries. Several of these properties adjoin the City limits and may eventually be developed into more urbanized uses in accordance with the City's General Plan once they are annexed and City services are extended to them.

The I-5 Corridor: This area includes land east of the City's incorporated boundaries where there are several rural residences, agricultural storage buildings, a crop dusting airstrip, a petroleum products warehouse, a bus yard, rice and vine seed drying facilities and a few commercial supply businesses. These uses occupy small parcels and are very widely scattered along Husted Road, Crawford Road, Old Highway 99 and the Husted Lateral. Away from the roadsides, the large tracts behind the commercial buildings are used for agriculture.

The 1989 Colusa County General Plan for this area recommends that much of this land be designated for future industrial development. Its visibility from the highway, proximity to the railroad, and accessibility from I-5 make it ideally situated for industry.

The Southern Rural-Residential Area: To the south and southwest of Williams, fruit and walnut orchards on relatively small farm parcels have proven to be an attractive draw for rural-residential development. This area, which was once almost exclusively used for agriculture now contains about 80 rural non-farm residences on parcels averaging ½ to 5 acres. Most of the parcels have been created through small subdivisions. The smallest parcels adjoin the City limits, especially along Theater Drive and Venice Boulevard. Further south, residential uses have been less intrusive and the orchards are more predominant. The area also contains scattered commercial uses, including an irrigation pipe yard, a tow-truck company, a motel, a county corporation yard and a crop dusting landing strip just west of Husted Road.

As in other rural-residential areas in the County, the practice of housing development without sewer and water services is of particular concern immediately south of Williams. The need for public improvements will become greater in the City as the area continues to undergo a transition from agriculture to urban uses. At the same time, the more piecemeal and irregular the development pattern becomes, the more difficult it becomes to construct these improvements. Furthermore, the "ratcheted" development pattern results in many one to five acre lots and limits the availability of sites for larger-scale suburban housing development. These improvements will be needed to sustain future growth in Williams.

The rural residential area south of Williams has been designated for Urban Residential land uses in the 1989 Colusa County General Plan. It is expected that urban services will be extended to this area and eventually annexed to the City. The current County General Plan policy is to discourage further land subdivision in this area until the City annexes the territory.

The Northern and Northwestern Areas: There is limited urban development to the north and northwest of Williams. The only non-agricultural land uses are located immediately north of the

3.10 LAND USE AND POPULATION

City limits on Old Highway 99. This area includes gas storage tanks, a small RV park, and auto salvage yards. North of town, the Highway 20 bypass spans Old Highway 99, the railroad, and I-5. The City's wastewater treatment plant occupies about 40 acres just north of the bypass. The remainder of this area is used for rice and row crop farming.

Arbuckle

The unincorporated community of Arbuckle, elevation 141 feet above sea level, has an estimated population of 2,472, and is the third largest community and fastest growing community in Colusa County. Its proximity to large agricultural operations makes it a popular location for both industrial and residential investment for the expanding agricultural industry. Being located in the southern portion of the County, and due to its relatively close location to the Sacramento metropolitan area and the Vacaville-Fairfield Interstate 505 corridor, Arbuckle has experienced strong residential growth between 1990 and 2009.

HISTORY

Arbuckle is one of the three Colusa County towns founded during the northern extension of the Southern Pacific Railroad in the late 1870s. When College City turned down the opportunity for a rail depot in 1875, Missouri farmer Tacitus Arbuckle invited the railroad to his 7,320-acre farm three miles to the west. Arbuckle donated the land and depot and sidings, laid out the townsite, and began selling small lots. By 1876, the community had 300 residents. Around town, landowners offered farmers up to 5 years free use of their land as an incentive to clear the land and render it suitable for crop production.

Arbuckle became a lively commercial center by the turn of the century. Its business district served wheat, sorghum, hay, bean, and barley farmers from the surrounding area, as well as wildcatters drilling for oil in the nearby foothills. The town was markedly different than neighboring College City, where drinking and gambling were prohibited.

Much of the cropland around Arbuckle was planted with almonds, during the early 1900s. Although only 150 acres were planted in almond orchards in 1911, about 11,000 acres had been planted by 1933. The increase in almond production was accompanied by extensive land subdivision to the south and west of town. Because almonds could be grown profitably on smaller parcels than field crops, large areas (such as the Reddington Ranch subdivision) were split into 10, 20, and 40 acre parcels. Large parcels continue to be developed as "hobby farms" or ranchette sites for families seeking country living places.

Arbuckle's commercial district entered a long period of decline beginning with the construction of Interstate 5 in 1957. The Interstate bisected the town, diverting through-traffic away from Fifth Street (Old Highway 99W) and dividing the town into "east and west" halves. The recent downturn in the California economy has also affected many of the town's businesses. However, large increases in the town's population have created a demand for new retail and service establishments.

The Arbuckle Revitalization Committee and Arbuckle Parks and Recreation District have worked jointly to revitalize the downtown area of Arbuckle through investment in the community's parks and recreation facilities. Since 1999, the two committees have created the "Wee Park," a beautification project at the intersection of Old Highway 99 and Hillgate Road. The "KIA Memorial Park" in downtown Arbuckle recognizes local residents killed during a foreign war. The "Lavanch Hursh Park" is being developed in the downtown area with picnic areas, a covered pergola for events in the park, and central location for community events.

LAND USE

Arbuckle's current land use pattern reflects its origin as a railroad depot and agricultural processing center. Grain warehouses, almond processing facilities, farm implement dealers, and fertilizer outlets are among the land uses abutting the railroad along the east side of I-5. Some of the storage and processing buildings are vacant and in poor condition. Several parcels are vacant or used for farm equipment storage only. Older residential development is concentrated to the east of I-5 of the downtown and generally between I-5 and 10th Street to the west.

Newer subdivisions are concentrated to the west of I-5, primarily south of Hillgate Road. With the slowdown in the economy, there are also several partially constructed subdivisions with finished residential lots that provide opportunity for development of 146 single family units at Reddington Ranch (northwest of Almond Avenue and Hillgate Road) and Wildwood Estates (southwest of Wildwood Road and Hillgate Road).

FOCUS AREAS

Central Arbuckle: One-half block to the west and parallel to the railroad, Fifth Street is the town's principal commercial district. The business district extends for about five blocks along Fifth Street between the railroad and I-5. The area is characterized by one and two-story masonry buildings dating from the early 1900s, including the Oddfellows Hall, the Reddington Block and the Arbuckle Hotel, and more contemporary buildings such as the Post Office, an auto parts store, a grocery store and a bank. Many of the older buildings are vacant or underutilized.

North and south of the business district, the area between I-5 and Fifth Street is predominantly residential. A central park has recently been improved with a large covered area for community gatherings at the east sides of Fifth Street at Hall Street. The Central Area includes about 30 houses and some apartments. Each of Arbuckle's freeway interchanges (north and south of town) is adjoined by a gas station and vacant commercially-zoned land.

East Arbuckle: East of the railroad, a grid of streets eight blocks long and between two and five blocks wide comprises "East" Arbuckle. This area is mostly residential, consisting of about 200 houses. The development pattern follows the 1875 town plan, although nearly all of the original 25' x 115' lots have been consolidated into larger lots. Most of the lots are about 50' x 75' wide, with mid-block alleys forming the rear lot lines. The blocks typically contain one or two vacant lots; some have been developed with infill housing. East Arbuckle also has a church, a county road

department yard, water district offices and about a half dozen semi-rural residences. Some of the rural residences are on parcels which could potentially support additional dwellings.

The edges of east Arbuckle are characterized by abrupt transitions from residential to agricultural uses. The east-west streets terminate at large tracts of row crops that run the length of the community. These row crop fields also extend to the north, while the land to the northwest and northeast is planted in orchards. The sharp distinction between farm and non-farm uses helps to visually define the boundaries of the town, especially along its eastern edge. Because large acreage farms surround it East Arbuckle has remained a relatively compact community.

West Arbuckle: Like East Arbuckle, the west side is predominately residential. It has the most recently built housing stock with about 700 houses and 50 apartment units. This area generally has a greater variety of housing development than the east side. Only a small portion of the west side lies within the original townsite. Most of the development is contained in subdivisions developed after the completion of I-5 and more recently in newer modern designed subdivisions that are often surrounded by older subdivisions, well established orchards and crop land creating a less defined urban pattern with a spattering of agricultural uses transitioning into housing development. The west side also contains the Arbuckle Elementary School, the Pierce high School/L.G. Johnson Junior High School campuses, a 6-acre community park, a PG&E substation, the public library and three churches.

College City

College City is primarily a residential community supported by the surrounding agricultural industry. Due to the community's infrastructure limitations (wells and septic tanks) College City has a less defined, spread out urban pattern with little growth potential.

HISTORY

When pioneer sheep farmer Andrew Pierce died in 1871, all of his land and possessions were left to the Christian Church. The proceeds from his estate sale were used to establish Pierce Christian College on a 9-acre plot. By the time classes began in 1874, the community of College City had been established around the campus. The town was described as a "moral and intelligent community" containing prosperous stores and fine homes. Enrollment dropped through the 1880s, and in 1894 the college was closed. The property was sold to the County and was used as a high school from 1897 until 1936. Enrollment had reached 162 students by the time the school was replaced by Pierce High School in Arbuckle.

The loss of the high school was a turning point for College City. Following the Depression, many of its stores and public buildings—including the school itself—were torn down. Few reminders of the town's heritage are left. Much of the original townsite has been planted in orchards.

LAND USE

College City was initially platted around a grid street pattern about 7 blocks wide by 8 blocks long. Most blocks contained a mid-block alley with either 4 or 8 lots on either side of the alley. Nearly all

of the lots have since been consolidated into parcels from one-third acre to one acre in size and only about a third of these parcels are developed today. Homes are intermixed with orchards and are not concentrated in any particular part of the original townsite. The scattered, very low density development pattern and lack of a central commercial district gives the community a very rural feel. With no trace of the old college, library, or church, there is no focal point or “town center” in College City.

The community’s development pattern consists of about 88 residences spread over the 31 acre townsite. The 2010 U.S. Census estimates the population of College City to be approximately 290 persons. All houses are served by private wells and septic tanks. Some of the residential properties contain farm buildings, small plots for field crops, livestock pens and orchards. Soils in College City are among the richest in the County and much of the townsite is intensively used for crop and nut production.

There are very few non-residential uses in College City. The general store and market on College City Road (Main Street) are the only retail-service uses in town. The town cemetery and harvester warehouse are located just north of the community.

Grimes

The Community of Grimes is a small 68-acre agriculture and river recreation based residential community of about 430 residents, located at the mideast side of the County on the west side of the Sacramento River. It is primarily a residential community supported by the surrounding agricultural activities with some recreational activities associated with the adjoining Sacramento River.

HISTORY

At the time it was first settled, Grimes was located on an island bounded by the Sycamore Slough and the Sacramento River. The town was settled by Cleaton Grimes, who built a cabin on the present townsite in 1851. Grimes became the center of the County’s first major farming area during the early 1850s. The community grew because its river landing was an important port for landing river steamboats and barges. Railroad service was later established to the community, serving the town’s large grain drying and storage facility. By the turn of the century, Grimes had become a small village with stores, a public hall, and a grain warehouse. One mile down-river at Eddy’s Landing, ferries carried passengers across the Sacramento River to the Old Marysville Road.

LAND USE

Grimes extends five blocks from east to west and three blocks from north to south. The original townsite included several additional blocks on the east that were never built. As in Colusa, streets were laid out at right angles to the riverfront. Tall shade trees, some more than a century old, make the town visible from miles away across flat open surroundings. A large rice dryer and storage facility also provides a visual landmark that distinguishes the town from the large farms surrounding it.

3.10 LAND USE AND POPULATION

The Grimes commercial district fronts on Main Street for about three blocks and with residential areas extend for about 10 square blocks on either side of Main Street. The original town plat contained about 200 lots, most 50' x 170' with mid-block alleys forming the rear lot lines. As with College City, nearly all the lots have been consolidated into parcels of two lots or more. However, unlike College City, most of the parcels in Grimes are developed and there are few vacant gaps or orchards between homes. Consequently, Grimes is a distinct and relatively compact community. Its shade trees, established and well maintained housing stock, and large lots (averaging one-half acre) create a pleasant semi-rural atmosphere.

The town has about 132 residences, with about two-thirds of them located south of Main Street. North of Main Street, a mobile home park includes about 20 additional units. Several large-lot rural residences are located in orchards along the south side of Leven Street.

Grimes' commercial district has gradually shifted west along Main Street as the town's ties to the river have diminished. The commercial area has been in a period of decline for many years due to the inability of its small establishments to compete with the region's larger retail and service centers. Many of the buildings surrounding the corner of 2nd and Main are vacant, including the historic Bank of America, the Oddfellows Hall, and the old town drug store. Other commercial buildings, such as the lumber store at the river, have been converted to private homes. Land uses along Main Street include a service station, a small market, a church, some small retail shops, and the volunteer fire department.

Two special uses in the community are the rice dryer and storage facility and the Grand Island Elementary School. The rice facility occupies about 8 acres just east of town along the abandoned railroad bed. The school, which dates to the 1930s, is viewed as an important part of the town's heritage and culture. Children from as far away as Arbuckle attend the school because it offers a "small town" educational experience not matched in the County's larger communities.

Maxwell

The fourth largest community in Colusa County with a population of 1,015 persons, the town of Maxwell, is located along the I-5 corridor. The 162-acre agriculture and residential community has a well-defined downtown. It is the economic and social center of the north Colusa County region.

HISTORY

Maxwell was the last of the Central Pacific-Southern Pacific Railway towns to be settled in Colusa County. W.S. McCoy, landowner and constable of the area, decided to emulate Tacitus Arbuckle by developing a townsite adjacent to the route of the proposed Northern Railway. The town plat, which was drawn freehand, was recorded at the courthouse in Colusa in 1877. During the same year, a general store, hotel, post office, saloon, blacksmith and wagon shop, and several residences were built. The town was originally called Occident, but was renamed in honor of George Maxwell (the town's postmaster) after he donated his land to the railroad for construction of its depot.

As the tracks were laid in 1878, a construction boom ensued in the new town. Most of the townsite was sold to the railroad's development subsidiary, the Western Development Company, for one dollar a lot. Grain warehouses and livery stables were built as new settlers arrived and stage coach connections were established between Maxwell and Colusa. By 1891, the community had grown to about 400 people. Dry land barley and wheat were grown on the surrounding farms while cattle and sheep grazed the foothills to the west.

Some of the historic buildings in Maxwell's commercial district still remain today, including the Masonic Temple (1885), the Opera House (1912), Brown's Garage (1910), and the Odd Fellows Hall (1914). Many of these buildings were popular social gathering or entertainment places during the town's early years but are mostly vacant or underutilized today.

LAND USE

Maxwell's development has historically been oriented around the north-south axis along the railroad and an east-west axis perpendicular to the railroad along Oak Street. The town has approximately 395 housing units. The original townsite was supplemented during the town's early years by a series of subdivisions or "additions" named after the landowners, including McCoy, Felt, Danley, Harden, and Mathieson. The additions generally extended the town's grid of streets to the configuration it bears today, roughly eight blocks by eight blocks. Land surrounding the town is used for field crops, such as rice.

FOCUS AREAS

Business District: The Town's business district extends along both sides of Oak Street for about three blocks. Commercial uses are centered along the blocks just west of the old rail depot. As in other small towns in Colusa County, downtown has been in an economic decline. In response, many of the newer shops in Maxwell focus on the sale of specialty items such as flowers, antiques and gifts. Oak Street also includes a restaurant, market, auto parts shop, beauty salon, barber shop, laundromat, and the town library. Several of the storefronts are vacant. Just west of the retail district, Oak Street includes the post office, fire department and American Legion Hall.

Old 99 and Railroad Area: Agricultural-related industrial uses extend along both sides of the railroad, as they have for more than a century. Most of the wood sheds and buildings that lined the tracks have been demolished or lost to fire. A large grain warehouse, surrounded by rice harvesters, occupies the northeast corner of Oak and the railroad. Other metal or masonry warehouses are located south of Oak Street along the west side of the tracks and Old Highway 99. There are a number of large vacant lots along the railroad and Highway 99 used for truck and harvester parking. These lots are intermixed with scattered commercial uses, including two service stations, two restaurants, a bank, and a convenience store.

Residential Areas: Maxwell contains about 320 houses, 20 apartment units and a mobile home park. One-half of the town's housing lies in the northwest quadrant (north of Oak Street and west of the railroad). In total, about 120 acres in the town are used for housing and the adjoining streets. Most residential lots in the original townsite were 25' x 116', while the "additions"

featured slightly larger lots. Virtually all of the housing in the Maxwell townsite was built on parcels consisting of two or more of the original lots. Residential parcels as large as ½ acre are not uncommon within the town, although most homes are on lots of between 6,000 and 15,000 square feet.

The residential areas are fairly compact. Although most blocks contain one or two vacant lots, the lots are often used for backyard gardening and in some cases for raising livestock. Some of the residential blocks include non-residential uses, especially barns, large metal sheds, and small home businesses. The residential area also includes the elementary school on the north edge of town, the high school on the west edge of town, and three churches.

Nearly all recent residential growth in Maxwell has been on the northwest and southern edges of town. This is likely to be the case in the near future as well, since these areas contain most of the available vacant lots in the public utility district. Development on the north has been on ½ and 1/3 acre lots and has consisted of higher-priced housing. Development in the southeast has been concentrated in the 28-lot subdivision along Cedar Street and Central Avenue and in a series of lots along Cosner Avenue.

Princeton

The Community of Princeton is a 105-acre agriculture and river recreation based residential community of approximately 300 residents, located at the northeast side of the County next to the Sacramento River. It is primarily a residential community supported by the surrounding agricultural activities with some recreation opportunities from the adjoining river.

HISTORY

Princeton was laid out in the early 1850s on the site of the Sixteen Mile House, a roadside inn which served wagon traffic on the road to the Northern Mines. Princeton became a major steamboat landing on the Sacramento River during the late 1860s and was later served by the Southern Pacific Railroad. The community was also the site of a ferry crossing to Marysville Road. The ferry was California's first electrically powered river ferry in 1932.

LAND USE

Princeton's development pattern reflects the man-made features which form its eastern and western boundaries. Levees—containing the Sacramento River on the east and the River Branch Canal on the west—have defined the edges of town for many years. Because these two levees are parallel to each other and are less than one-quarter mile apart, Princeton's growth has been pushed to the north and south. The town is oriented along Highway 45, the principal route between Colusa and Chico. The railroad passed about one-half mile west of town so it has had little influence on Princeton's appearance today.

The town extends four blocks from north to south and three blocks from the east to west. Most of the blocks are bisected by a north-south alley. Lots in the original townsite were somewhat larger than in other Colusa County towns, averaging 1/3 of an acre. Most of the town's 155 homes are

single family units on parcels of $\frac{1}{4}$ to $\frac{1}{2}$ acre. The remaining homes are some duplexes, multi-family units including a 4-unit apartment building, and a small mobile home park. Most of the housing is contained within the original townsite, although a strip of lots along Highway 45 extends north of town to the old Princeton Ferry Landing.

Princeton has a well-defined “downtown” occupying a single block along Highway 45 between Prince and Center Streets. Most of the previous commercial businesses in town have left, so there are a number of vacant buildings. An active restaurant and market/deli remain on Commercial Street. The library, irrigation district, and post office are located in this area, as well. There are also several grain storage buildings. The composition of uses is very similar to that found in downtown Grimes. However, Highway 45 has moderate traffic volumes, creating a less intimate atmosphere in the central area than in Grimes. North and south of downtown, homes extend along the highway to the edges of town.

The Princeton High School and Elementary School occupy about one-quarter of the town’s developed acreage. Both buildings are focal points of the community and help establish Princeton as the service center for the surrounding farm areas of Colusa and Glen Counties. The town also contains two churches, a fire station and a lodge building. A few of the residential area lots are developed with metal sheds and warehouses, but these uses generally have not created conflicts with surrounding uses.

Joining Princeton with the farmland to the west are bridges at Norman Road, Center Street, and Spencer Road that cross the River Branch Canal. Most land west of the canal is used for rice farming, although about 12 acres are used by the high school for playing fields. There are also clusters of homes along Center Street and along Norman Road, and there are sewage treatment ponds just north of Spencer Road. East of the Sacramento River levee, the land is highly flood prone

Stonyford

The town of Stonyford, located in the foothills of the Indian Valley with an approximate elevation of 1,180 feet above sea level, has an estimated population of 200 people and is the largest population center in the northwestern section of Colusa County. The town serves as the social/economic hub of a larger area of about 600 residents.

HISTORY

Stonyford was established in 1890 as a mining and ranch town and was originally laid out on a 100-acre site along a grid of streets, six blocks wide by three blocks long. It encompassed a variety of narrow and deep commercial lots. Only a fraction of the town site was ever developed. Over the years, entire blocks of the town were consolidated into single home sites ranging from 10,000 square feet to as large as eight acres.

3.10 LAND USE AND POPULATION

Stonyford Community Area Plan: The Stonyford-Lodoga area was the subject of a special area plan completed in 1983. The plan helped establish the policy framework for the 1989 General Plan for this area and set development performance standards. Major goals of the plan were:

- Preserve and maintain the rural character of the area.
- Maintain a high environmental quality.
- Maintain and protect viable agricultural land.
- Encourage orderly population growth.
- Provide safe all-weather roads.
- Insure the adequate provision of water, sewage disposal and public services

LAND USE

Today, Stonyford is a community composed of about 80 homes and a number of businesses and community facilities. Market Street, the main commercial corridor, has a general store, one restaurant and bar, a phone company exchange building, a real estate office with a soda fountain, a post office, a Grange (meeting hall) and the historic town hall (built in 1899). The De Angelis Government Center, located near the center of town, provides a number of services to the community, including a Sherriff's substation, a part time medical clinic, a volunteer citizen service center and a branch of the Colusa County Library. The town also has two historic churches: a Catholic and a Community church. The town hall/lodges and churches have been social gathering places for nearly a century and are a very important part of community life in Stonyford.

The Stonyford Rodeo Grounds, east of the town, serves as Stonyford's largest annual event. Rodeo Weekend, sponsored by the Horseman's Association, occurs during the first weekend in May, and is nationally known as the second rodeo on the national circuit in Northern California. The Stonyford Buyers Group, dinner and auction, generally held in September, is a community-oriented event that supports children who raise farm animals under the Future Farmers of America Organization. The East Park Reservoir, to the southeast of Stonyford, is an active recreation area of about 4,000 acres, and is managed by the U.S. Bureau of Reclamation.

There are a few rural residential subdivisions in the south part of Stonyford, all contained within the town's water district. These subdivisions consist of about 25 homes generally situated on one to five acre lots. About a ½ mile west of town is the Mendocino National Forest Ranger Station which provides housing for rangers working in the southeastern portion of the forest.

For the most part, the Stonyford-Lodoga Area has been maintained with respect to these Area Plan goals. Within the town of Stonyford, the Area Plan and 1989 General Plan show rural residential development on the remaining vacant parcels in the water district. Because the town lacks a central sewer system, subdivision of vacant parcels into new lots smaller than one acre is discouraged. However, since the town was laid out many years ago, development on existing lots smaller than one acre is permitted. New commercial development, as seen by the 1989 General

Plan, restricts commercial development on the vacant parcels within the existing town center along Market Street. To encourage in-fill commercial development in town, strip commercial development along the road between Stonyford and Lodoga has been discouraged. The intention here is to respect the original town site subdivision design while maintaining the town's rural character.

The land immediately adjoining Stonyford provides a transition between the town and the surrounding ranchlands and undeveloped foothills. Within the transition area, farming and ranching are predominant uses, though some very low density residential uses have been allowed. Over 5,000 acres of land in this area are under Williamson Act contract (agricultural preserves). Consistent with the 1983 Stonyford-Lodoga Area Plan and to comply with County water availability and slope density standards, these low density residential uses have been limited to parcels of at least 10 acres.

ASSOCIATED COMMUNITIES

The community of Lodoga, located about seven miles south/southeast of Stonyford, has a restaurant and store surrounded by about 30 homes and extends for about ½ mile along the banks of Indian Creek. Most of these homes were originally built as vacation cabins. Homes generally occupy the ¼ to ½ acre lots that are wedged in the strip of land between the creek and the Lodoga/Leesville-Lodoga Road.

A third population center, located between Stonyford and Lodoga, is the community of Century Ranch containing about 147 homes. This 1,000 lot community was originally subdivided in 1965, and was envisioned to be a planned development complete with a golf course, airstrip and community center. However, there was not adequate water supply to serve the community and a moratorium was placed on new connections to the water system, so development has slowed significantly. Due to the State Department of Water Resources moratorium, any new homes must have adequate land area to support a well and on-site septic system, and must receive approval from the Federal Water Master and review committee.

3.10.2 REGULATORY SETTING

REGULATORY FRAMEWORK

The regulatory framework discussion and describes federal, state, and local laws and regulations that guide land use decisions. Adopted plans that pertain to federal lands, state planning law, and local jurisdictions in Colusa County are also described.

Federal

NATIONAL WILDLIFE REFUGES

Management of each National Wildlife Refuge is guided by the purpose of the individual refuge and the mission and goals of the Refuge System that includes the individual refuge, as well as U.S. Fish and Wildlife Service policy, laws, and international treaties. The National Wildlife Refuge

3.10 LAND USE AND POPULATION

System Administration Act of 1966, as amended by the Improvement Act, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations provide the federal laws for establishment and management of the refuges.

The Colusa, Delevan, and Sacramento National Wildlife Refuges are all part of the Sacramento National Wildlife Refuge Complex and are all guided by a single Comprehensive Conservation Plan (CCP). The Sacramento, Delevan, Sutter, and Colusa National Wildlife Refuges Final CCP guide the management of the Sacramento, Delevan, Colusa, and Sutter National Wildlife Refuges. The U.S. Fish and Wildlife Service manages the refuges as part of the Sacramento National Wildlife Refuge Complex.

MENDOCINO NATIONAL FOREST

The Mendocino National Forest Land and Resource Management Plan (LRMP) provides the framework to guide the ongoing land and resource management operations of the Mendocino National Forest. The LRMP's goal is to provide a management program reflecting a mix of activities for the use and protection of the Forest. The LRMP:

- Establishes the management direction and associated long-range goals and objectives for the Forest,
- Specifies the standards, approximate timing, and vicinity of the practices necessary to implement that direction, and
- Establishes the monitoring and evaluation requirements needed to ensure that the direction is being carried out, and to determine if outputs and effects have been reasonably estimated.

The LRMP is a strategic document that provides guidance for but does not make project level decisions. Those decisions are made after more detailed, site-specific environmental analysis and further public comment. The National Forest Management Act (NFMA) requires that resource plans and permits, contracts, and other instruments issued for the use and occupancy of National Forest System lands be consistent with the forest plan. The following are some examples of project decisions that require more detailed environmental analysis:

- Timber harvesting and related activities, such as slash disposal and road construction,
- Range allotment management plans,
- Fish or wildlife habitat improvement projects,
- Watershed improvement projects, and
- Developed recreation sites or trail construction.

The LRMP focuses primarily on management prescriptions for habitat, wilderness, and recreation uses. The LRMP anticipates a steady workforce and does not foresee the need for extensive

construction of new facilities for administrative activities and to house the workforce, but rather anticipates that existing facilities will need to be maintained and improved.

The LRMP does not provide much direction regarding private development within the Mendocino National Forest. However, the U.S. Forest Service provides for special use permits for private activities. Special use permits may be requested from the U.S. Forest Service for a variety of land uses in national forests, including water transmission, agriculture, timber production, outfitting and guiding, recreation, telecommunication, research, photography and video productions, and granting road and utility rights-of-ways.

Recreation residences are also a federally permitted use in national forests. In 1968, a moratorium was placed on establishing additional residential tracts within forests and the moratorium was expanded in 1976 to also prohibit development of new lots within existing tracts. Existing recreation residences within a national forest are required to obtain a special use permit, which has a maximum term of 20 years. However, there is no guarantee that a new special use permit will be issued at the end of the permit term.

State

CALIFORNIA GENERAL PLAN LAW

Government Code Section 65300 requires that each county and city adopt a General Plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning.”

The General Plan consists of a statement of development policies and includes a diagram or diagrams and text setting forth objectives, principles standards, and plan proposals. It is a comprehensive long-term plan for the physical development of the county or city and is considered a "blueprint" for development. The General Plan must contain seven state-mandated elements: Land Use, Open Space, Conservation, Housing, Circulation, Noise, and Safety. It may also contain any other elements that the County wishes to include. The land use element designates the general location and intensity of designated land uses to accommodate housing, business, industry, open space, education, public buildings and grounds, recreation areas, and other land uses.

The 2003 General Plan Guidelines, established by the Governor’s Office of Planning and Research (OPR) to assist local agencies in the preparation of their general plans, further describes the mandatory land use element as a guide to planners, the general public, and decision makers prescribing the ultimate pattern of development for the County.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) was developed to protect the quality of the environment and the health and safety of persons from adverse environmental effects. Discretionary projects are required to be reviewed consistent with the requirements of CEQA to determine if there is potential for the project to cause a significant adverse effect on the

environment. Depending on the type of project and its potential effects, technical traffic, noise, air quality, biological resources, and geotechnical reports may be needed. If potential adverse effects can be mitigated, a mitigated negative declaration is required. If potentially adverse effects cannot be mitigated, an environmental impact report is required. These documents have mandated content requirements and public review times. Preparation of CEQA documents can be costly and, despite maximum time limits set forth in the Public Resources Code, can extend the processing time of a project by a year or longer.

Local

COLUSA COUNTY GENERAL PLAN

The Colusa County General Plan was adopted on January 13, 1989. Land uses in Colusa County have been developed based on the Land Use Map, goals, and policies established by the Colusa County General Plan. The foundations of the existing land use pattern are contained in the goals and policies created to:

- Maintain the efficient and orderly use of land;
- Avoid random and haphazard growth;
- Conserve and protect agricultural land; protect the qualities that contribute to a favorable quality of life;
- Develop and maintain an efficient circulation system;
- Utilize the current transportation system as the framework for siting new industrial or commercial development;
- Improve and maintain the quality of services for local residents and businesses;
- Encourage an adequate supply of safe, sanitary, and attractive housing in all communities affordable to a wide range of income groups;
- Encourage a balanced mix of conservation, utilization, and development of the County's natural resources;
- Preserve open space and opportunities for recreation and leisure-time activities;
- Maintain a high level of public health and safety for all residents of Colusa County

These guiding goals and policies are reinforced on the General Plan Land Use Map through the designation of significant agricultural lands, designation of urban land uses in and adjacent to established communities, locating the majority of industrial and commercial sites along the Interstate 5 and Highway 20/45 corridors, and providing significant recreational and open space areas that characterize the County's quality of life.

Land Use Designations

Table 3.10-8 summarizes General Plan land use designations for unincorporated Colusa County by acreage and parcels. In some cases, a single parcel will have multiple land use designations, so the number of parcels listed in this table exceeds the total number of parcels as counted by the County Assessor. Land use designations adopted under the 1989 General Plan are shown on Figure 3.10-1. A brief description of each of the 1989 General Plan land use designations is provided below. These descriptions are based on the text of the 1989 General Plan.

TABLE 3.10-8: GENERAL PLAN LAND USE DESIGNATIONS		
LAND USE	PARCELS	ACREAGE
Agriculture-General	4,807	392,436.8
Agriculture-Transition	172	3,162.6
Agriculture-Upland	1,071	172,694.0
Commercial	313	513.2
Designated Floodway	302	13,002.0
Industrial	264	3,572.8
No Label*	261	3,692.5
Parks and Recreation	17	371.0
Public/Semi-Public Services	38	447.1
Resource Conservation	584	125,166.2
Rural Residential	1,655	3,515.9
Rural Service Center	102	514.9
Urban Residential	2,102	1,757.6
Upland-Transition	207	4,031.7
TOTAL	11,895	724,878.3

AG - Agriculture-General: Land carrying this designation is generally used for orchard and crop production. Secondary uses in AG areas include oil and gas drilling, non-intensive recreation, agricultural industry (processing), and agricultural support uses, provided that these uses do not interfere with the viability of agriculture or create environmental hazards. Residences in AG areas must be related to agricultural operations. The General Plan was amended in 2008 to increase the minimum lot size requirement for AG parcels to 40 acres.

AT - Agriculture-Transition: The intent of the A-T designation is two-fold. First, A-T identifies areas where land has already been subdivided into small parcels (less than 10 acres) for ranchettes, part-time farms, and orchards. A-T serves as a transition zone between urban areas and the large-scale farms found in areas where large-scale agricultural operations are no longer feasible due to small parcel size or proximity to existing urban centers.

3.10 LAND USE AND POPULATION

Second, A-T identifies vacant areas which may be suitable for urban uses in the future but which are not suitable at this time due to a lack of urban services and their distance from an established community. It may be appropriate to redesignate these areas for a more intense use based on market demand and development trends. Designating all of the A-T areas for development would be inappropriate since an oversupply of land would result (an oversupply would reduce the effectiveness of the plan, encourage urban sprawl, and raise urban service costs). These areas should not be extensively subdivided into small “ranchette” parcels that would prevent future urbanization.

AU - Agriculture-Upland: These lands are used for cattle and sheep grazing, and are intermixed with undeveloped, uninhabited forests, chaparral and grasslands. Secondary uses in AU areas include forestry, mining, and non-intensive recreation. Soils are generally fair to poor and are not conducive to crop production. Land divisions for non-agricultural purposes should be discouraged in these areas to prevent conflicts with ranching and to minimize exposure to natural hazards. The General Plan indicates that new parcels smaller than 80 acres should be prohibited and that, in some locations, it may be appropriate to raise the minimum lot size to 160 acres.

C- Commercial: Commercially designated areas include central business districts, highway commercial areas, hotels, offices, restaurants, shopping centers, and heavy commercial uses such as farm implement sales and auto salvage yards. The designation includes both built-up commercial areas and vacant areas suitable for commercial development.

DF- Designated Floodway: Lands within this classification have been designated as floodways by the State Reclamation Board. Areas between the Sacramento River and the levees are included, as well as the Colusa Bypass between the Sacramento River and Butte Creek.

I- Industrial: Lands designated industrial fall into two categories: existing industrial areas and vacant areas designated for industrial parks. The existing industrial areas contain agricultural support uses such as irrigation pipe yards, grain storage warehouses, rice dryers, and packing and distributing facilities.

The second category includes planned industrial areas in the I-5 corridor and the Colusa Sphere of Influence. Such areas are served by rail, interstate or state highway and have high visibility. These areas are to be developed as master-planned industrial subdivisions, rather than on a piecemeal basis.

RR - Rural Residential: This designation allows semi-rural living at an average density of one house per one to ten acres. The R-R designation is characterized by the following:

- Intended for areas where land ownership and parcel patterns preclude the use of land for agriculture.
- Preserve the attractive low-density character of the areas adjacent Colusa, Williams, Arbuckle, Maxwell, Princeton, and Stonyford and the partially developed non-sewered townsites and subdivisions such as College City and Century Ranch.

- Provide a buffer between urban uses and farmland.
- Primary use of RR parcels is housing, with parcels usually large enough for backyard gardening or raising horse, but their owners do not derive their living from these activities.
- Smaller than A-T parcels.
- Distinguished from UR parcels by the lack of a central sewer system.
- New parcels smaller than one acre are not permitted.

PR- Parks and Recreation: Areas designated PR include golf courses, city, community and state parks, fairgrounds, and other recreational areas. At the present time, all of the PR areas are within communities. As in the case of public services, specific sites for future community parks are not presented on the land use map, but ample room has been provided in future residential areas for such parks.

PS- Public/Semi-Public Services: This category includes schools, libraries, churches, fire and police stations, corporation yards, water and sewage plants, migrant labor camps, lodges, electric power substations, and airports. The category only applies to existing public uses since the exact locations of schools, utilities, parks, etc will be determined as each respective community develops. As lands are converted to urban uses, sites for public/semi-public services would generally be provided within the land designated for Urban Residential uses.

RC- Resource Conservation: The RC designation is applied to forests and forested rangelands under federal ownership, to watershed lands requiring management and protection, and to the National Wildlife Refuges. In addition to forestry, acceptable uses on private lands within the RC designation include grazing, mining, non-intensive recreation and very low density residential uses. Also included as RC areas are the Colusa, Delevan and Sacramento National Wildlife Refuges.

RSC- Rural Service Center: The General Plan designates rural service centers at Sites, Delevan and Lodoga. These areas are very small, predominantly residential settlements. Growth potential in these areas is severely limited by the lack of urban services. However, all three communities contain a large number of existing vacant lots that are potentially buildable. Additional lot splitting in these areas is strongly discouraged. Commercial and residential uses are acceptable within RSC areas, provided such uses conform to the revised zoning map for each community.

UR - Urban Residential: This designation applies to existing and future residential areas where domestic sewer and water systems are available or can be made available. The UR designation allows R-1 to R-4 zoning classifications. Agriculture is an acceptable interim use. Residential support uses, such as schools and parks, are allowed.

UT - Upland-Transition: This designation is used to identify a limited number of areas near Stonyford and Lodoga. If access is sufficient, water is available, and the parcels meet the County's slope-density requirements, very low density residences (one unit per 10 acres) are an acceptable use. The intent of the UT designation is to create a transitional zone between rural-residential

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areas such as Century Ranch and Stonyford and the very large acreage ranches and wilderness areas.

COLUSA COUNTY ZONING ORDINANCE

Colusa County's Zoning Ordinance establishes land use zones and regulations for the use of land and buildings in the unincorporated areas of the County. The Zoning Ordinance was adopted in 1991 as Appendix I to the County Code.

COLUSA COUNTY AIRPORT COMPREHENSIVE LAND USE PLAN

The Colusa County Airport Land Use Commission adopted a Comprehensive Land Use Plan (CLUP) for the airport in 1995. The CLUP regulates land use in three major areas: safety zones, noise zones, and height restrictions. It provides land use compatibility guidelines for lands near the airport, to avert potential safety problems and to ensure unhampered airport operations. The CLUP establishes three safety zones that are linked to land use compatibility: clear, approach/departure and overflight. The clear zone is near each end of the runway and is the most restrictive in allowing land uses. The approach/departure zone is located under the takeoff and landing slopes, and is less restrictive. The overflight zone is the area under the airport's traffic pattern, and is even less restrictive (Colusa County ALUC, 1995).

Under California Government Code Section 65302.3(a), general plans must be consistent with any airport land use plan adopted pursuant to Public Utilities Code Section 21675. The Colusa County Airport Land Use Commission (ALUC) monitors compliance with CLUP provisions. The CLUP sets forth the following policies and implementation measures regarding future land uses:

- Implementation b: Upon adoption of this plan (CLUP), existing incompatible land uses may continue; however, no incompatible land use may be changed to another incompatible land use.
- Implementation c: Upon completion of this plan (CLUP), no incompatible land use, building, or structure may be expanded, except the following: Single-family detached residences
- Implementation e: Prior to the amendment of the general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation that would affect land that lies within the airport area of influence; the proposal must be submitted to the ALUC for review and determination of compatibility. Affected cities and counties are responsible for submitting the proposal to the ALUC.

LOCAL AGENCY FORMATION COMMISSION OF COLUSA COUNTY

In 1963, the State Legislature created a local agency formation commission (LAFCO) for each county, with the authority to regulate local agency boundary changes. Subsequently, the State has expanded the authority of a LAFCO. The goals of the LAFCO include preserving agricultural and open space land resources and providing for efficient delivery of services. The Colusa County LAFCO has authority over land use decisions in Colusa County affecting local agency boundaries. Its authority extends to the incorporated cities, including annexation of County lands into a city, and

special districts within the County. LAFCO has the authority to review and approve or disapprove the following:

- Annexations to or detachments from cities or districts.
- Formation or dissolution of districts.
- Incorporation or disincorporation of cities.
- Consolidation or reorganization of cities or districts.
- Establishment of subsidiary districts.
- Development of, and amendments to, Spheres of Influence. The Sphere of Influence (SOI) is the probable physical boundary and service area of each local government agency. This may extend beyond the current service area of the agency.
- Extensions of service beyond an agency's jurisdictional boundaries.
- Provision of new or different services by districts.
- Proposals that extend service into previously unserved territory in unincorporated areas.

In addition, the Colusa County LAFCO conducts Municipal Service Reviews (MSRs) for services within its jurisdiction. An MSR typically includes a review of existing municipal services provided by a local agency and its infrastructure needs and deficiencies. It also evaluates financing constraints and opportunities, management efficiencies, opportunities for rate restructuring and shared facilities, local accountability and governance, and other issues.

CITY OF COLUSA GENERAL PLAN

The City of Colusa adopted its General Plan in October 2007. The City's General Plan provides a comprehensive set of goals, policies, and implementing actions to guide the City's growth over a 20-year period. The City's General Plan states the following four fundamental purposes:

- To enable the Planning Commission and the City Council to make informed land use decisions that affect the City's quality of life.
- To inform the public of the City's policy approaches and to serve as a vehicle to invite public participation in the City's decision-making process.
- To provide a basis for evaluating whether private and public development proposals and public programs are in harmony with Colusa's short-term objectives and long-term vision.
- To provide private developers and public agencies with clear expectations of new development proposals to ensure their consistency with Colusa's development priorities.

The City's General Plan establishes allowed land uses for lands within the City limits and identifies planned land uses for the sphere of influence, which includes all land within the City and 1,668 acres outside the City limits. The General Plan identified eleven land use designations: Estate

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Residential, Low Density Residential, Medium Density Residential, High Density Residential, Urban Reserve, Commercial Professional, Mixed Use, Office Professional/Light Industrial, Parks/Recreation/Open Space, Industrial, and Public Facilities. The City's Land Use Diagram, which identifies adopted land uses in the City and SOI, is shown as Figure 3.10-2.

CITY OF WILLIAMS GENERAL PLAN

The City of Williams is in the process of updating its General Plan. The City's current General Plan was adopted in September 1988. The following primary land use goals are established by the General Plan:

- Land Use – Residential: The City of Williams will maintain a diversity of housing opportunities and land uses that will allow for moderate to fast population growth, and provide sufficient housing to meet demand from all income groups.
- Land Use- Commercial: The City of Williams will, where appropriate, retain and renew the existing commercially developed land with emphasis upon preservation of the downtown area and will provide for sufficient new commercial area to meet the needs of the City.
- Land Use – Industrial: The City of Williams will encourage industrial growth by providing sufficient land designated for heavy commercial, light industrial and heavy industrial uses.
- Land Use – Agricultural: The City of Williams will protect agricultural land uses from encroachment by residential land uses which are not compatible with agriculture.

The City of Williams General Plan establishes 14 land use designations: Rural Residential, Residential Low Density, Residential Medium Density, Residential Multi-Family, Residential-Professional, Commercial Retail, Commercial Heavy, Highway Commercial, Light Manufacturing, Heavy Manufacturing, Open Space, Agricultural Exclusive, Urban Reserve, and Public Use, which are shown on Figure 3.10-3.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on land use and planning and population and housing if it will:

- 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 the 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;

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: Physical Division of an Established Community (Less than Significant)

The 2030 General Plan establishes the County's vision for future growth and development. Goal LU-1 of the General Plan is to *"Maintain the efficient and harmonious use of land in the county, promoting a well organized and orderly development pattern, avoiding random, haphazard growth, protecting public health and safety, and accommodating the orderly and sustainable growth of employment and population."* The land uses allowed under the 2030 General Plan (Figure 2.2) provide opportunities for cohesive new growth at in-fill locations within existing communities, as well as new growth areas adjacent to existing communities, but would not create physical division within existing communities. New development and redevelopment projects would be designed to complement the character of existing communities and provide connectivity between existing development and new development, as described in the Community Character Element. The 2030 General Plan does not include any new roadways, infrastructure, or other features that would divide existing communities. The 2030 General Plan would have a **less than significant** impact associated with the physical division of an established community.

Impact 3.10-2: Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect (Significant and Unavoidable)

Federal: Multiple federal agencies have oversight over federal lands in Colusa County. The three wildlife refuges in the County are under the Sacramento, Delevan, Sutter, and Colusa National Wildlife Refuges Final Comprehensive Conservation Plan (CCP). The 2030 General Plan designates lands within the three national refuges as Resource Conservation, which is consistent with the CCP. Federal lands within the Mendocino National Forest are guided by the Mendocino National Forest Land and Resource Management Plan (LRMP). Lands within the Mendocino National Forest have been designated Forest Lands, which is generally compatible with the LRMP. Federally-owned grazing lands, primarily in the western portion of the County, are overseen by the Bureau of Land Management (BLM), which is guided by the Ukiah Resource Management Plan (URMP). Lands managed by the BLM are generally designated Agricultural Upland and Resource Conservation,

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which is compatible with the URMP. The Bureau of Reclamation operates the East Park Reservoir. The 2030 General Plan designates the East Park Reservoir area as Resource Conservation and continued recreation uses are appropriate under the 2030 General Plan. The 2030 General Plan has been developed with the intent to be consistent with the federal regulations and plans that govern federally-operated and/or owned lands in Colusa County. The federal plans that have been adopted to guide the development, management, and other activities on federally-owned and – operated lands will continue to be in effect and the 2030 General Plan will not modify or conflict with environmental protection measures in these plans.

State Plans: The 2030 General Plan was prepared in conformance with state laws and regulations associated with the preparation of general plans, including requirements for environmental protection. Discussion of the 2030 General Plan’s consistency with state regulations, plans, and policies associated with specific environmental issues (e.g., air quality, traffic, water quality, etc.) is provided in the relevant chapters of this Draft EIR. The state would continue to have authority over any state-owned lands in Colusa County and this Draft EIR would not conflict with continued application of state land use plans, policies, and regulations adopted to avoid or mitigate environmental effects.

County Plans: As set forth by state law, the General Plan serves as the primary planning document for the County and subordinate documents and plans would be updated to be consistent with the General Plan. Similar to the 1989 General Plan, the 2030 General Plan focuses on ensuring that the County’s rural quality of life is maintained, that agricultural uses and activities are maintained and enhanced, and that growth remains focused in and around existing communities. The 2030 General Plan carries forward and enhances policies and measures from the 1989 General Plan that were intended for environmental protection and would not remove or conflict with County plans, policies, or regulations adopted for environmental protection, except as described below. The 2030 General Plan would require modifications to the County’s Zoning Ordinance to provide consistency between the General Plan and zoning; however, these modifications will not remove or modify portions of the Zoning Ordinance that were adopted to mitigate an environmental effect.

Municipal Plans: The 2030 General Plan does not apply to lands within the Cities of Colusa and Williams, nor does it apply to federally recognized Tribal Lands. Since the authority of the Cities of Colusa and Williams is limited to lands within their jurisdictional boundaries, the 2030 General Plan will not conflict with plans adopted by the Cities of Colusa and Williams. While each City may identify land use designations to lands within their SOIs or planning areas, the governing land use document for lands within the SOI is the Colusa County General Plan until such lands are annexed by a City.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County’s General Plan, Zoning Ordinance, and other relevant plans and regulations, including the CLUP. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the

requirements of CEQA. The 2030 General Plan includes policies and actions related to land use planning and coordination with local agencies.

CLUP: The 2030 General Plan has been developed to be generally consistent with local regulatory and planning documents, such as the CLUP for the Colusa County Airport, the Colusa County Groundwater Management Plan, and the Regional Transportation Plan. However, the 2030 General Plan would allow land uses within the Colusa County Airport zone that are not consistent with the land uses established by the CLUP (see Figure 3.8-2).

The Colusa County Airport CLUP allows very few land uses within the clear zone: open space and natural areas, row and field crops, and pasture and grazing. The Land Use Map for the 2030 General Plan designates most of the lands within the clear zone as Public/Semi-Public Services (airport land) and Parks and Recreation and a small portion of land is designated as Industrial. The Public/Semi-Public Services designation is consistent with the CLUP. However, parks and recreation facilities attracting more than 10 persons per acre and industrial facilities are not compatible with the CLUP. The approach/departure zone extends beyond the clear zone for approximately 2,000 feet. Within the approach/departure zone, the Land Use Map designates lands as Parks and Recreation, Industrial, and Agricultural General. As with the clear zone, parks and recreation facilities, including riding stables and golf courses, are compatible under restricted conditions. The CLUP identifies a range of retail, manufacturing and service uses that are acceptable within the approach/departure zone. Generally, land uses allowed within the approach/departure zone would be compatible with the CLUP.

The over flight zone covers an extensive portion of lands around the airport. The 2030 General Plan designates these lands as Industrial, Public/Semi-Public Services, General Agricultural, Parks and Recreation, Commercial, and Urban Residential. These designations each allow a range of land uses that are compatible with uses allowed under the CLUP. However, the CLUP states that single-family residential is a compatible land use only if the density is five acres or more per residence. The Urban Residential designation of the 2030 General Plan Update has a minimum density of one residential unit per acre, which exceeds the density identified as compatible by the CLUP. The CLUP was adopted to address potential hazards associated with airport operations and the 2030 General Plan and the CLUP are in conflict. The 2030 General Plan includes policies and actions related to land use planning, coordination with local agencies, and consistency with the CLUP, as listed below.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy LU 1-23: Encourage cooperation and coordination between the County, the incorporated cities, and public service providers in the County.

Policy LU 1-25: Work cooperatively and negotiate with each of the cities to achieve mutually beneficial outcomes related to, among other things: planning within spheres of influence; development impact fees for funding of regional parks and amenities, regional roadways and

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government services that benefit the entire County (including incorporated areas) and “replacement” funding for revenues foregone to protect agriculture and rural character.

Policy OSR 1-2: Support regional and local natural resource preservation plans of public agencies that retain and protect open space within the County, including: the Mendocino National Forest Plan, the Colusa National Wildlife Refuge Complex, the Delevan National Wildlife Refuge, the Sacramento National Wildlife Refuge, the Willow Creek-Lurline Management Area and the North Central Valley Wildlife Management Area.

Policy SA 1-53: Ensure that land uses within the vicinity of airports and airstrips are compatible with airport restrictions and operations.

Policy SA 1-54: Ensure that all development proposals in the vicinity of the Colusa County Airport are consistent with the restrictions and requirements contained in the Colusa Airport Comprehensive Land Use Plan (CLUP).

Policy SA 1-55: The County shall ensure that new development proposals do not result in encroachments into future airport expansion areas and do not result in adverse economic impacts to airport operations.

Policy SA 1-56: Work cooperatively with the Airport Land Use Commission to ensure continued airport operations in a safe and cost-effective manner, consistent with the public’s needs and Federal Aviation Authority regulations.

Actions

Action LU 1-F: Provide land use and development proposals for proposed projects that are either located within the sphere of influence or within one mile of the respective city boundary of Colusa or Williams to the appropriate city’s Planning Department for review and comment.

Action LU 1-G: Actively participate with LAFCO and the relevant cities and agencies in any proposed updates to the spheres of influence of the cities and other public service agencies.

Action LU 1-H: Work closely and actively with the cities, public utility districts, fire districts, and other special districts in developing programs for future capital improvements to ensure that such programs accommodate existing and planned growth.

Action SA 1-HH: As part of the development review process, new development and expansion proposals near the Colusa County airport and public and private airstrips shall be:

- a. Reviewed for consistency with setbacks, land use restrictions, and height as determined by the Federal Aviation Administration (FAA) and the Colusa County Airport Land Use Commission;*
- b. Provided to the Airport Land Use Commission for Review.*

Action SA 1-II: As part of future planning efforts, the Department of Planning and Building shall review and provide input into updates to the Comprehensive Airport Land Use Plan to ensure that new development within the Colusa County Airport Safety Zone is compatible with existing airport

operations, and that any changes or improvements to the airport facility or operations are compatible with land uses within this zone.

Conclusion: The above-identified 2030 General Plan policies and actions ensure that the County coordinates with the cities and public service providers in the County and that future land use decisions associated with the Mendocino National Forest and the national wildlife refuges and management areas are consistent with the plans adopted to guide growth in those areas. The 2030 General Plan also includes policies and actions designed to ensure that future land use decisions are consistent with the CLUP. While most of the 2030 General Plan land use designations within the clear, approach/departure, and overflight zones would allow a range of uses consistent with the CLUP, there is the potential for future conflicts particularly associated with undeveloped lands in the overflight zone designated Urban Residential. Since the 2030 General Plan provides policies and actions to address airport safety, the only mitigation to reduce this impact to a less than significant level would be to change land use designations on the Land Use Map in the vicinity of the airport to be consistent with the CLUP. Without this change in land use, the impact would remain **significant and unavoidable**. Alternative 2, Modified Land Use Map, would reduce this potential impact to a less than significant level and is discussed in Chapter 5, Project Alternatives.

Impact 3.10-3: Conflicts with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan (No Impact)

There are no applicable Habitat Conservation Plans or Natural Community Conservation Plans that have been adopted by or for Colusa County. Therefore, there is **no impact** associated with this topic. Habitat and natural community issues are addressed in Chapter 3.4, Biological Resources.

Impact 3.10-4: Induce Substantial Population Growth in an Area (Less than Significant)

The 2030 General Plan accommodates future growth in Colusa County, including new businesses, expansion of existing businesses, and new residential uses. Infrastructure and services would need to accommodate future growth. The 2030 General Plan is oriented toward the economic growth of the County, with emphasis given to enhancing the County's agricultural sector, encouraging development of a broader array of businesses, and providing residential development as necessary to serve economic growth. The 2030 General Plan would accommodate approximately 1,385 new homes and 610,874 square feet of industrial, commercial, public facility, and other non-residential uses through 2030, as described in Chapter 2.0. Depending on growth rates, the actual growth during the life of the General Plan, could be lower or higher, but would not exceed the theoretical buildout described in Chapter 2.0.

Given the historical and current population, housing, and employment trends, growth in the County, as well as the entire state, is inevitable. The primary factors that account for population growth are natural increase and net migration. The average annual birth rate for California is expected to be 20 births per 1,000 population. Additionally, California is expected to attract more than one third of the Country's immigrants. Other factors that affect growth include the cost of

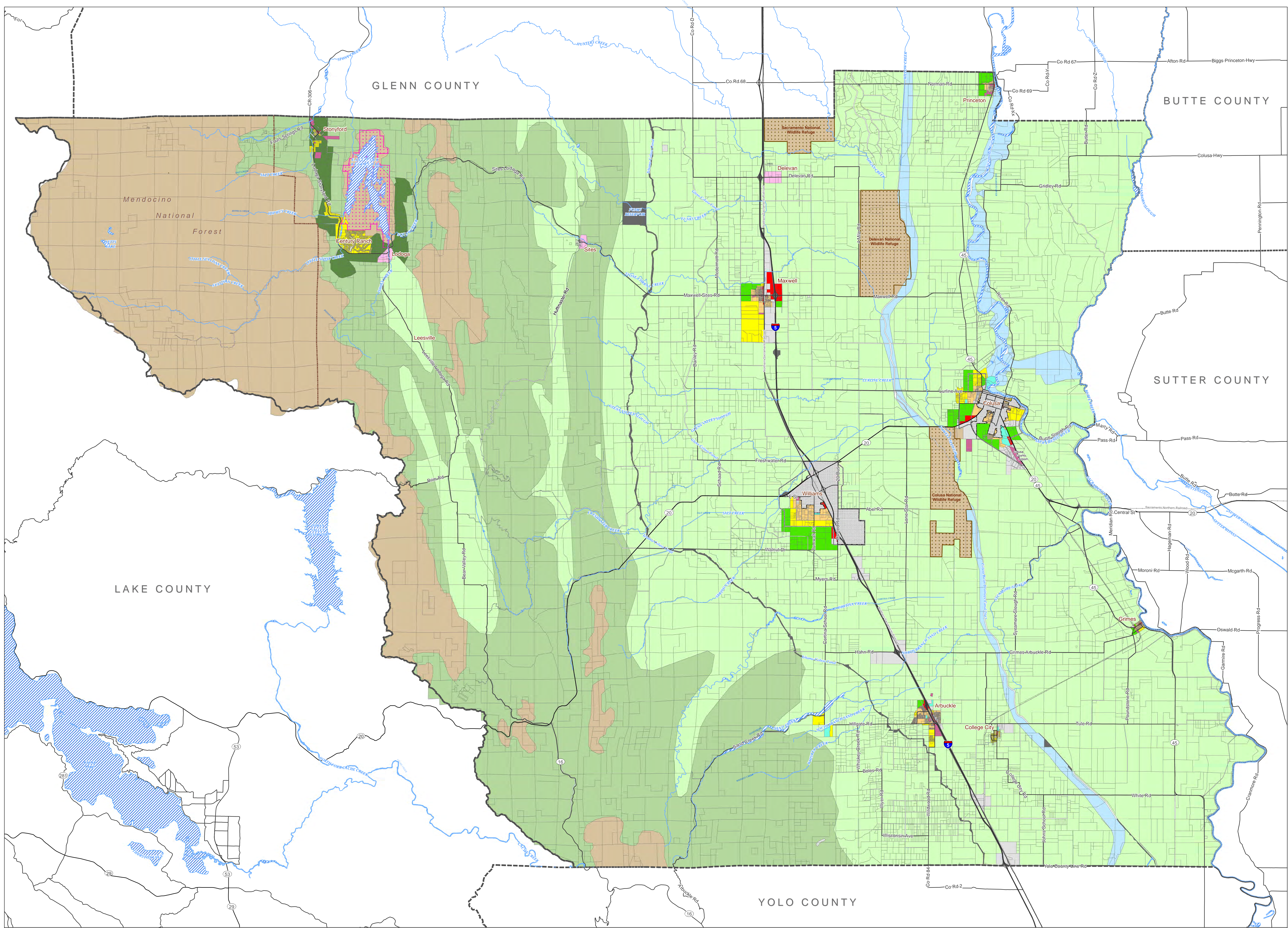
housing, the location of jobs, the economy, the climate, and also, transportation. While these factors would likely result in growth in Colusa County during the planning period of the 2030 General Plan, the 2030 General Plan includes policies and actions designed to spur additional economic growth in the County, which could result in additional population growth. As future development occurs under the 2030 General Plan, new roads, infrastructure, and services would be necessary to serve the development and this infrastructure would accommodate planned growth. However, growth under the 2030 General Plan would remain within the general growth levels projected statewide and would not be anticipated to exceed any growth projections or limitations that have been adopted to avoid an environmental effect. The 2030 General Plan is intended to accommodate the County's fair share of statewide housing needs, which are allocated by the State Department of Housing and Community Development to the County on a regular basis (every five to seven years).

The 2030 General Plan includes policies and actions that mitigate environmental impacts associated with growth, such as air quality, noise, traffic, water supply, and water quality effects. Additionally, this Draft EIR includes mitigation measures, where appropriate, to reduce or eliminate potentially significant impacts associated with specific environmental issues associated with growth. Chapters 3.1 through 3.9 and 3.11 through 4.0 provide a discussion of environmental effects associated with development allowed under the proposed 2030 General Plan.

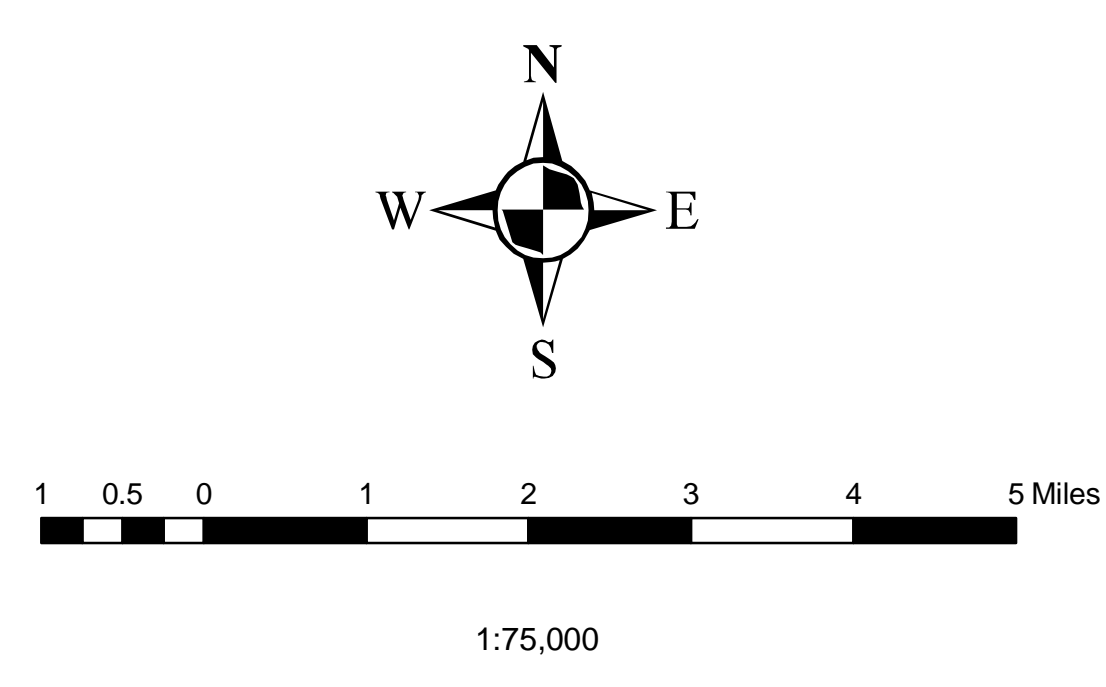
With implementation of General Plan policies and actions intended to guide growth to appropriate areas and provide services necessary to accommodate growth, the land uses allowed under the 2030 General Plan and its policy framework would not induce growth that would exceed adopted thresholds. Therefore, population and housing growth associated with the 2030 General Plan would result in a **less than significant** impact.

Impact 3.10-5: Displace Substantial Numbers of People or Existing Housing, Necessitating the Construction of Replacement Housing Elsewhere (Less than Significant)

While the 2030 General Plan does not directly propose any development, the 2030 General Plan would allow for the development and redevelopment of lands within the County that are currently occupied by people and existing housing units. Residences may be removed as part of future development activities allowed under the 2030 General Plan; however, approximately 1,385 new housing units would provide adequate replacement housing opportunities for any displacement that occurs. Further, any residence that would be removed as part of future development would be purchased prior to any development. While the 2030 General Plan may result in removal of residences, buildout under the General Plan would result in an increase in the total number of residences and provide housing opportunities for persons that may be displaced as a result of development. This provision of replacement "housing opportunities" is essentially a self-mitigating aspect as a result of implementation of the 2030 General Plan. Therefore, impacts of the 2030 General Plan on the displacement of people or housing are considered **less than significant**.



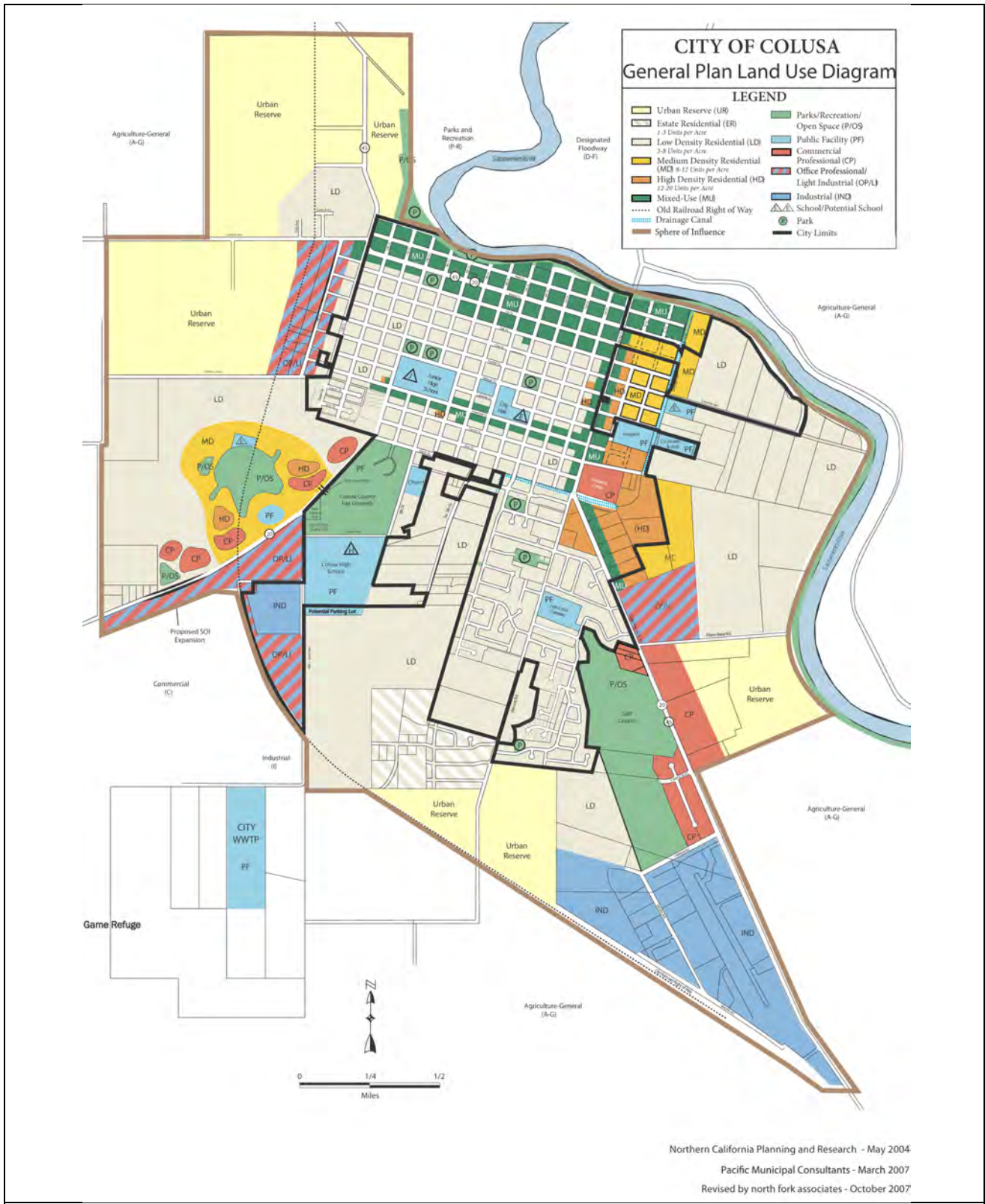
- | | | |
|----------------------------------|----------------------------|---------------------------------------|
| AG - Agricultural General | C - Commercial | Bodies of Water |
| AU - Agricultural Upland | DF - Designated Floodway | Wildlife Refuges |
| AT - Agricultural Transition | I - Industrial | Bureau of Reclamation Lands |
| UT - Upland Transition | RC - Resource Conservation | State, Federal, or Other Agency Lands |
| PR - Parks & Recreation | RR - Rural Residential | City Limits |
| RSC - Rural Service Center | UR - Urban Residential | City Sphere of Influence |
| PS - Public/Semi-Public Services | | County Boundaries |



**Figure 3.10-1
1989 General Plan Land Use Map**

General plan and parcel boundary data developed by the Geographical Information Center, California State University, Chico, for DeNovo Planning Group and Colusa County, dated January 30, 2010.
General plan data updated February 5, 2010; by DeNovo Planning Group.
Wildlife refuge data from Colusa County GIS.
Road data from ESRI StreetMap North America.
Mendocino National Forest boundary from US Forest Service.
Map date: March 15, 2010.

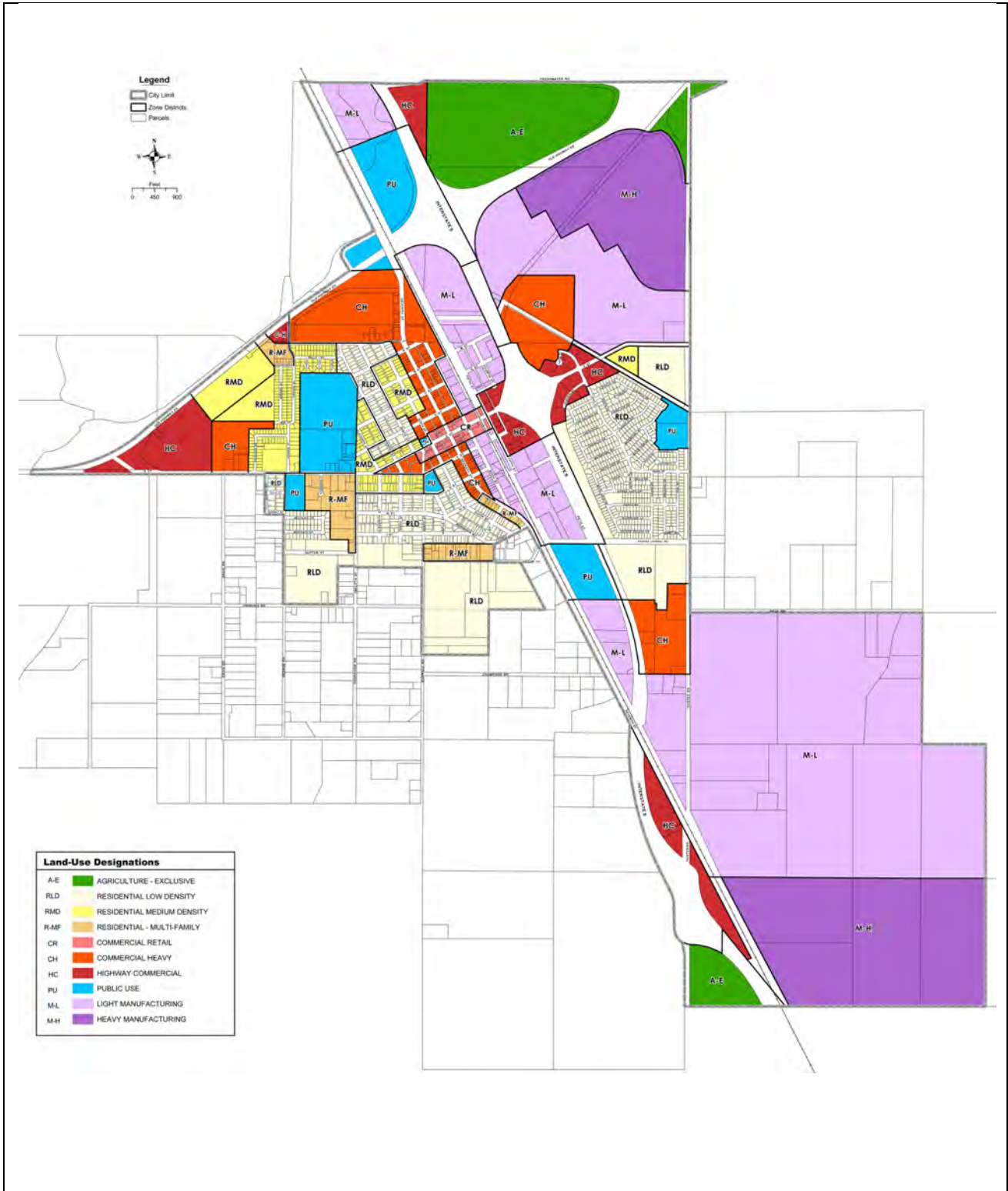
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**Figure 3.10-2:
City of Colusa General Plan Land Use Designations and Sphere of Influence**

Source: City of Colusa, 2007

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**Figure 3.10-3:
City of Williams General Plan Land Use Designations**

Source: ENPLAN, 2010

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This section provides a discussion of the regulatory setting, a general description of existing noise sources in the Colusa County, and a discussion of the impacts and mitigation measures associated with implementation of the 2030 General Plan Update. The analysis in this section was prepared with assistance from j.c. brennan & associates, Inc. The technical data in support of this EIR section is presented in Appendix D.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50 percent of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to

Ldn, but includes a +3 dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (dBA)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. OCTOBER 1998.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

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- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Traffic Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop Ldn (24-hour average) noise contours for all highways and major roadways in the General Plan study area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic modeling performed for the General Plan study area. Day/night traffic distribution for Interstate 5, State Route 20, and State Route 45 were based upon continuous hourly noise measurement data collected for these roadways. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 3.11-2 shows the results of this analysis.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 3.11-2 are generally considered to be conservative estimates of noise exposure along roadways in Colusa County.

TABLE 3.11-2: PREDICTED EXISTING TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVEL AT 100 FEET, LDN	DISTANCES TO TRAFFIC NOISE CONTOURS, LDN (FEET)		
			70 dB	65 dB	60 dB
I-5	South of Arbuckle	79.1 dB	405	873	1881
I-5	Arbuckle to Williams	79.5 dB	432	931	2005
I-5	North of Williams	78.6 dB	375	807	1739
SR 20	East of Colusa	69.0 dB	86	185	398
SR 20	Colusa to Williams	64.2 dB	41	88	190
SR 20	West of Williams	65.6 dB	51	109	236
SR 45	South of SR 20	62.3 dB	30	66	141
SR 45	North of Colusa	60.3 dB	23	49	105
SR 16	Lake County Line	56.5 dB	13	27	58
Wildwood Road	South of Hillgate Road	58.8 dB	18	39	84
Hillgate Road	Wildwood to Cortina School Rd.	57.2 dB	14	30	65
Cortina School Road	Hillgate Rd. to Hahn Rd.	54.9 dB	10	21	45
Hahn Road	Lone Star to Grimes-Arbuckle	57.1 dB	14	30	64
Grimes-Arbuckle Road	Hahn Rd. to Tule Rd.	55.1 dB	10	22	47
Tule Road	Grimes-Arbuckle to Poundstone	58.9 dB	18	39	84
College City Road	North of White Rd.	58.0 dB	16	34	74
Lone Star Road	Myers Rd. to Abel Rd.	60.4 dB	23	49	106
Abel Road	East of Lone Star Rd.	56.1 dB	12	25	55
Lone Star Road	Abel Rd. to SR 20	60.0 dB	22	47	101
Zumwalt Road	Myers Rd. to Walnut Drive	57.3 dB	14	30	66
Walnut Road	West of Zumwalt Drive	59.4 dB	20	42	91
Zumwalt Road	North of Walnut Drive	59.3 dB	19	42	90
Freshwater Road	West of I-5	55.4 dB	11	23	49
Wilson Avenue	North of SR 20	54.9 dB	10	21	46
Lurline Avenue	SR 45 to I-5	62.2 dB	30	65	141
Maxwell Sites Road	East of McDermott Road	59.3 dB	19	42	90
Maxwell Road	I-5 to Four Mile Road	61.7 dB	28	60	129

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.

SOURCE: FEHR & PEERS TRANSPORTATION ENGINEERS, CALTRANS, J.C. BRENNAN & ASSOCIATES, INC., 2009.

Railroad Noise Levels

Railroad activity in Colusa County occurs along the California Northern Railroad Company (CFNR) line which parallels the Interstate 5 corridor through the communities of Arbuckle, Maxwell, and Williams. The line extends from the Union Pacific Railroad (UPRR) junction in Davis to the UPRR junction in Tehama.

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The CFNR line is used to haul lumber, beverage products, food products, steel pipe, agricultural products and construction material. The line is also currently being used to haul major components for the Colusa Generating Station under construction by PG&E in Colusa County.

In order to quantify noise exposure from existing train operations, a continuous (24-hour) noise level measurement survey was conducted. The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train events, so that the typical number of train operations could be determined.

Locations of continuous noise monitoring sites are shown on Figure 3.11-1. Table 3.11-3 shows a summary of the continuous noise measurement results for the CFNR line.

TABLE 3.11-3: RAILROAD NOISE MEASUREMENT RESULTS

MEASUREMENT LOCATION	RAILROAD TRACK	GRADE CROSSING /WARNING HORN	TRAIN EVENTS PER 24-HR PERIOD	DISTANCE TO CL	AVERAGE SEL
Site C	CFNR	Yes	3	243'	99.4 dB

SOURCE: J.C. BRENNAN & ASSOCIATES, INC - 2009

Noise measurement equipment consisted of a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter equipped with a LDL ½" microphone. The measurement system was calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

Based upon the noise level measurements shown in Table 3.11-3, the average SEL for train operations along the CFNR line was 99.4 dB at a distance of 243 feet from the track centerline, with approximately three train events occurring during daytime hours.

To determine the distances to the day/night average (Ldn) railroad contours, it is necessary to calculate the Ldn for typical train operations. This was done using the SEL values and above-described number and distribution of daily freight train operations. The Ldn may be calculated as follows:

$$Ldn = SEL + 10 \log N_{eq} - 49.4 \text{ dB, where:}$$

SEL is the mean Sound Exposure Level of the event, N_{eq} is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day, plus 10 times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise level data, number of operations and methods of calculation, the Ldn value for railroad line operations have been calculated, and the distances to the Ldn noise level contours are shown in Table 3.11-4.

TABLE 3.11-4: APPROXIMATE DISTANCES TO THE RAILROAD NOISE CONTOURS

LDN AT MEASUREMENT SITE	DISTANCE TO LDN CONTOUR		
	60 dB	65 dB	70 dB
UPRR LINE			
54.8 dB @ 243 feet	109'	51'	23'

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2009.

Aviation Noise Levels

The Colusa County Airport is the only general aviation facility in the County. The Airport is located at 2915 State Route 20, south of the City of Colusa. The airport is operated by the Colusa County Board of Supervisor's Office. The airport's single paved runway is 3,000 feet in length and 60 feet wide.

The most recent estimate of annual operations is 28,000-30,000 flights per year. Thirty-three aircraft are currently based at the airport. A major portion of airport operations are a result of agricultural aircraft involved in crop dusting activities.

Noise Impacts and contours associated with the Colusa County Airport are addressed in the *Colusa County Airport Comprehensive Land Use Plan*, Adopted by the Colusa County Airport Land Use Commission on June 5, 1995. Figure 3.11-2 shows the most recent noise contours developed for the airport.

Fixed Noise Sources

The production of noise is a result of many industrial processes, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels.

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

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- HVAC Systems
- Pump Stations
- Steam Valves
- Generators
- Air Compressors
- Conveyor Systems
- Pile Drivers
- Drill Rigs
- Welders
- Outdoor Speakers
- Chippers
- Loading Docks
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Steam Turbines
- Fans
- Heavy Equipment
- Transformers
- Grinders
- Gas or Diesel Motors
- Cutting Equipment
- Blowers
- Cutting Equipment
- Amplified music and voice

The types of uses which may typically produce the noise sources described above, include, but are not limited to: wood processing facilities, pump stations, industrial/agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, special events such as concerts, and athletic fields.

There are various agricultural/industrial facilities distributed throughout the County. Many of the facilities are associated with agricultural processing and/or crop storing and have seasonal peaks in operations. The following is a list of some of the various agricultural and industrial noise sources in the County.

DE PUE WAREHOUSE COMPANY

De Pue Warehouse Company operates 11 rice drying and/or storage facilities in the unincorporated areas of Colusa County. Their peak operations typically occur from the end of August through October. During peak operations continuous operation of blowers occur for those facilities with rice drying operations. The De Pue Warehouse facilities are located at:

- 6160 County Road 71 – Delevan
- 3334 Highway 99W - Williams
- 4854 Highway 99W - Delevan
- 5656 Haas Road - Williams
- 61576 Maxwell-Colusa Road - Maxwell
- 3248 Danley Road - Williams
- 1 Comet Lane - Maxwell
- 1206 Husted Road - Williams
- 5999 Freshwater Road - Williams
- 48 Maxwell-Colusa Road – Maxwell
- 5228 Farview Road – Maxwell

At the time that noise measurements were collected for this report, rice dryers were not in operation at any of the De Pue Warehouse facilities. However, a study at the Cargrill Rice Dryers in Grimes was performed in February, 1987. Noise level were measured with the blowers on and off for short time periods. The results are summarized in Table 3.11-5.

TABLE 3.11-5: RICE DRYER NOISE LEVELS		
DISTANCE FROM THE BLOWERS, FEET	NOISE LEVEL WITH BLOWERS ON	
	LEQ	LDN*
50'	77.5 dB	83.9 dB
100'	71.5 dB	77.9 dB
150'	69.0 dB	62.6 dB
200'	66.0 dB	72.4 dB
500' (75' South of Hwy 45)	61.5 dB	67.9 dB
	NOISE LEVEL WITH BLOWERS OFF, (LEQ)	
400' (Highway 45)	54.0 dB	

* ASSUMES CONTINUOUS OPERATION FOR 24-HOURS.

SOURCE: COLUSA COUNTY GENERAL PLAN SAFETY ELEMENT, 1995 & J.C. BRENNAN & ASSOCIATES, INC. 2009

Based upon the data contained in Table 3.11-5, the 60 dB Ldn noise contour would be located approximately 1,242 feet from the rice dryer measured in Grimes, or for similar rice dryers located in the County.

ADM RICE

Archer Daniels Midland Company (ADM) operates a large processing facility at 1603 Old Highway 99 W. in Arbuckle. No specifics about ADM operations are available as representatives from ADM were unavailable during preparation of this report.

WESTERN MILLING

Western Milling operates a storage and drying facility at 540 Main Street in Grimes. Their primary function is to store grains prior to processing/milling. Their peak operations occur during July through October. During rice harvest they operate rice dryers. A representative of the company estimates that they receive approximately 50 truck shipments daily during peak operations.

MORNING STAR PACKING

Morning Star Packing is located on the southern boundary of the City of Williams. However, noise exposure from the facility could affect properties in the County.

Morning Star Packing produces various tomato products including tomato paste, diced tomatoes, ground tomatoes, chili sauce, ketchup, and various custom products. The plant operates 24/7 during summer months from approximately July through October. Trucking operations are also a 24/7 operation and a representative of the company estimates that they receive approximately

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550 truck shipments per day. During the off-season the facility operates from 6:00 am to 10:00 p.m.

A noise measurement of the Morning Star Packing plant operations was conducted at a distance of 1,500 feet from the main plant during operation on August 21, 2009. The plant generated noise levels of 59.8 dB Leq at this distance. Assuming continuous operation, this would result in a noise level of 66.2 dB Ldn over a 24-hour period, after application of nighttime penalties. Based upon this value, the 60 dB Ldn noise contour would be located approximately 3,062 feet from the packing plant.

TRANSFER STATION

Norcal Waste operates the Maxwell Transfer Station at 3840 Old Highway 99 W in Maxwell.

The hours of operation for the transfer station are:

- 8:30 am – 3:00 pm Monday-Friday
- 9:00 am – 2:00 pm 1st and 3rd Saturdays

Noise level measurements conducted at transfer stations indicate that typical hourly average noise levels range between 60 dB Leq and 70 dB Leq at a distance of 50 feet from the transfer station building. The primary noise sources included fork-lifts, truck traffic, front-end loaders, balers and sounds of material dumping onto the floor. Measured noise levels, where the buildings were enclosed were approximately 20 dB to 25 dB less than the sides of the buildings which were open to activities.

Based upon the typical eight weekday hours of operation, the noise exposure from the transfer station could range between 55-65 dB Ldn at a distance of 50 feet from the main transfer station building. The 60 dB Ldn noise contour would be located approximately 90 feet from the transfer station building.

POWER PLANT

A PG&E Generating Station (Colusa Generating Station) is located in the northern area of the County, about five miles northwest of Maxwell. The generating station and electrical switchyard comprise about 31 acres of a 100-acre parcel and produces approximately 660 megawatts of power, enough electricity to serve approximately 500,000 homes.

The California Energy Commission (CEC) conducted a review of noise impacts associated with the Colusa Generating Station. According to the CEC review, the project will be required to limit the noise exposure from the facility to 40 dB Leq at a distance of 9,000 feet southeast of the power plant, at the location of the nearest sensitive receptor. Northeast of the power plant, noise levels will be limited to 38 dB Leq, at a distance of 12,000 feet.

Based upon a noise level of 40 dB Leq at 9,000 feet and continuous operation of the power plant, the distance to the 60 dB Ldn noise contour for the plant is estimated to be 1,880 feet from the power plant.

COMPRESSOR STATION

The existing PG&E Delevan Compressor Station is located immediately east of the new Colusa Generating Station. The natural gas compressor station is one of four compressor stations that move approximately two million cubic feet of gas daily along the 400-mile PG&E gas line from the Oregon border to Central California and the San Francisco Bay area.

The station has three enclosed gas-driven compressor units ranging in horsepower ratings from approximately 9,250-14,000 hp. According to PG&E, two of the gas-driven units will be upgraded to electric motor-driven compressors.

Based upon observations conducted near the Delevan Compressor Station on August 21, 2009, each of the compressors were fully enclosed in buildings and noise exposure was minimal.

NATURAL GAS WELL SITES

There are numerous natural gas well sites located in Colusa County. Many of the well sites have permanent compressors located at the wells for pumping the gas into the distribution system. A noise measurement of a natural gas compressor station located at Grimes-Arbuckle Road and Lodi Road was conducted. The compressor station generated steady noise levels of 66 dB Leq at a distance of 100 feet from the compressor system. The 60 dB Ldn noise contour would be located approximately 417 feet from the compressor station.

AGRICULTURAL PEST DETERRENTS

The use of auditory type agricultural pest deterrents was observed at various locations in the County. One of the most common types of auditory type bird deterrents is the propane cannon. An example of a propane cannon is the ZON Gun which produces a periodic loud explosion, based upon a timer setting. Its primary use is to frighten birds and to prevent them from feeding in the agricultural fields.

Short-term noise level measurements of a ZON gun were conducted to quantify individual ‘firings’ of the gun. The ZON Gun was found to fire once every three minutes. The gun can be set to produce anywhere from 100 to 125 dB at the muzzle. Table 3.11-6 shows a summary of the short term noise measurement results.

TABLE 3.11-6: SHORT-TERM EVENT NOISE LEVELS

LOCATION	DESCRIPTION	DISTANCE (FT)	TIME	SOUND MEASUREMENTS (DBA)	
				SEL	LMAX
Side Exposure	ZON Gun	40	9:02 a.m.	93	94
Front Exposure	ZON Gun	100	9:08 a.m.	85	86

SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2009

Based upon the data shown in Table 3.11-6, the resulting hourly Leq can be calculated using the following equation:

$$\text{Leq} = \text{SEL} + 10 \log \text{Neq} - 35.6, \text{ dB where:}$$

3.11 NOISE AND VIBRATION

SEL is the mean SEL of the event, Neq is the sum of the number of hourly events, and 35.6 is 10 times the logarithm of the number of seconds in an hour.

Assuming 20 events per hour, the hourly Leq at a distance of 100 feet would be 62.4 dB. Continuous operation of the propane cannon would result in noise levels of 68.8 dB Ldn, after application of nighttime penalties. The 60 dB Ldn noise contour would be located approximately 275 feet from the air cannon.

COMMUNITY NOISE SURVEY

A community noise survey was conducted to document ambient noise levels at various locations throughout the County. Short-term noise measurements were conducted at eight locations throughout the County on August 19-21, 2009 during daytime and nighttime periods. In addition, five continuous 24-hour noise monitoring sites were also conducted throughout the County to record day-night statistical noise level trends. The data collected included the hourly average (Leq), median (L50), and the maximum level (Lmax) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 3.11-7 and Table 3.11-8. Figure 3.11-1 shows the locations of the noise monitoring sites.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) Model 820 and Model 824 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

TABLE 3.11-7: EXISTING CONTINUOUS 24-HOUR AMBIENT NOISE MONITORING RESULTS

SITE	LOCATION	LDN (DBA)	MEASURED HOURLY NOISE LEVELS, DBA					
			DAYTIME (7:00 AM - 10:00 PM)			NIGHTTIME (10:00 PM - 7:00 AM)		
			LEQ	L50	LMAX	LEQ	L50	LMAX
A	4827 Old Highway 99, Delevan - Backyard	62	52-63	46-58	61-93	52-59	51-58	63-75
B	368 Commercial / SR 45, Princeton - Frontyard	61	53-61	45-55	74-87	46-60	38-50	71-80
C	74 Olive Street, Maxwell - Frontyard	62	54-69	50-53	72-99	47-59	46-53	63-79
D	5005 SR 20, Williams - 90 from Centerline	66	59-71	44-65	75-87	53-62	37-48	76-83
E	6833 Grimes-Arbuckle Rd, Frontyard	61	55-61	43-56	71-85	50-58	46-51	66-78

SOURCE — J.C. BRENNAN & ASSOCIATES, INC. - 2009

TABLE 3.11-8: EXISTING SHORT-TERM COMMUNITY NOISE MONITORING RESULTS

SITE	LOCATION	TIME ¹	MEASURED SOUND LEVEL, DB			NOTES
			LEQ	L50	LMAX	
1	Sites – Huffmaster Rd, South of Sites-Lodoga Rd.	1:34 p.m.	40	36	52	Cricket/bug noise
		1:16 a.m.	45	45	49	Slight breeze
2	Delevan – Delevan Rd. & Corbin Rd.	3:57 p.m.	53	37	75	Car passby on Delevan Road, bird deterrent guns
		12:50 a.m.	50	48	62	Distant I-5, bird deterrent guns
3	Williams – Zumwalt Rd. & Crawford Rd.	2:40 p.m.	62	47	81	Traffic, farm equipment from orchards, distant I-5 traffic
		12:26 a.m.	47	47	56	Distant I-5 traffic
4	Colusa – South side of Moonbend Rd.	12:12 p.m.	56	39	78	Distant SR 20 traffic, tractor, bird deterrent guns
		11:02 p.m.	43	42	49	Distant SR 20 traffic, bird deterrent guns
5	S.R. 16 – South of SR 20 at BLM Campground	4:43 p.m.	50	36	69	Vehicle passbys on SR 16 (2)
		1:59 a.m.	38	38	39	Cricket/bug noise
6	Arbuckle – Grimes-Arbuckle Rd. & 1 st Street	1:36 p.m.	63	51	80	Traffic noise, trucks
		12:08 am.	63	56	80	Traffic noise, trucks
7	College City – Main St. & 9 th St.	1:16 p.m.	54	41	71	Traffic on Main, sprinklers
		11:52 p.m.	44	44	52	Distant I-5, crickets
8	Grimes – 2 nd St. & Poundstone St.	12:44 p.m.	56	45	74	Traffic, blower at commercial use, parking lot noise
		11:29 p.m.	55	45	67	Traffic on Main, industrial hum in distance

1 - ALL COMMUNITY NOISE MEASUREMENT SITES HAVE TEST DURATIONS OF 10:00 MINUTES.

SOURCE - J.C. BRENNAN & ASSOCIATES, INC. 2009.

The results of the community noise survey shown in Table 3.11-7 and 3.11-8 indicate that existing transportation noise sources were the major contributor of noise observed during daytime hours, especially during vehicle passbys. However, some of the more rural locations do not experience frequent vehicle activity so background noise levels are correspondingly low.

Agricultural noise was observed to contribute to the background noise environment in some locations, especially where propane cannons were used to deter bird pests. Additionally, a significant amount of trucking activity was observed corresponding to harvesting and general agricultural activities.

REGULATORY FRAMEWORK

FEDERAL

Federal Highway Administration (FHWA)

The FHWA has developed noise abatement criteria that are used for federally funded roadway projects or projects that require federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations (23CFR772).

Environmental Protection Agency (EPA)

The EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an Leq of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an Leq of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA has set 55 dBA Ldn as the basic goal for residential environments. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA Ldn, have generally agreed on the 65 dBA Ldn level as being appropriate for residential uses. At 65 dBA Ldn activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

Department of Housing and Urban Development (HUD). HUD was established in response to the Urban Development Act of 1965 (Public Law 90-448). HUD was tasked by the Housing and Urban Development Act of 1965 (Public Law 89-117) “to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes.”

HUD first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established the following three zones:

- 65 dBA Ldn or less - an acceptable zone where all projects could be approved.
- Exceeding 65 dBA Ldn but not exceeding 75 dBA Ldn - a normally unacceptable zone where mitigation measures would be required and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA Ldn area and 10 dBA of attenuation in a 70 to 75 dBA Ldn area.
- Exceeding 75 dBA Ldn - an unacceptable zone in which projects would not, as a rule, be approved.

HUD’s regulations do not include interior noise standards. Rather a goal of 45 dBA Ldn is set forth and attenuation requirements are geared towards achieving that goal. HUD assumes that using

standard construction techniques, any building will provide sufficient attenuation so that if the exterior level is 65 dBA Ldn or less, the interior level will be 45 dBA Ldn or less. Thus, structural attenuation is assumed at 20 dBA. However HUD regulations were promulgated solely for residential development requiring government funding and are not related to the operation of schools or churches.

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's or construction contractor's health and safety plan. With the exception of construction workers involved in facility construction, occupational noise is irrelevant to this study and is not addressed further in this document.

STATE

California Department of Transportation (Caltrans)

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 1998b). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

Governor's Office of Planning and Research (OPR)

OPR has developed guidelines for the preparation of general plans (Office of Planning and Research, 1998). The guidelines include land use compatibility guidelines for noise exposure.



LOCAL

Existing County Noise Thresholds

The existing (1989) Colusa County General Plan Safety Element includes Table SAFE-3, which identifies the maximum allowed interior noise levels, and the normally acceptable, conditionally acceptable, and normally unacceptable exterior noise levels for the various land use designations in the 1989 General Plan. These noise level thresholds are shown in Table 3.11-9 below.

3.11 NOISE AND VIBRATION

TABLE 3.11-9: 1989 COLUSA COUNTY SAFETY ELEMENT NOISE/LAND USE COMPATIBILITY

LAND USE CATEGORY	RECOMMENDED NOISE LEVELS, LDN (DBA)							INTERIOR, MAX
	50	55	60	65	70	75	80	
	EXTERIOR RANGE							
Residential:								
Low Density								45
Medium to High Density								45
Commercial:								
Hotel								50
Office								55
Restaurant, Retail								60
Other								65
Industrial:								
Light Industrial								55
Manufacturing								50
Other								70
Public/Quasi-Public:								
School, Library, Church, Hospital, Theater								45
Other								55
Open Spaces:								
All Categories								--
Key:	<p>Normally acceptable  Specified land use is acceptable, assuming standard building construction</p> <p>Conditionally Acceptable Standard building construction is not adequate for specified land use; however, mitigation measures may be easily employed to reduce noise to acceptable levels. An analysis of the measures by a qualified acoustical professional is required, to be approved by the County.</p> <p>NORMALLY UNACCEPTABLE  The specified land use should be discouraged unless the County finds the project to be in the public interest and a detailed analysis by a qualified acoustical professional shows that specific measures which are to be included in the project would reduce indoor and outdoor noise to acceptable levels. The analysis and attenuation measures must be approved by the County.</p>							

SOURCE: COLUSA COUNTY GENERAL PLAN SAFETY ELEMENT, 1989.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

IMPACTS AND MITIGATION MEASURES

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.11-10 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the Ldn.

3.11 NOISE AND VIBRATION

TABLE 3.11-10: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

Ambient Noise Level Without Project, L _{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.11-10 data, an increase in the traffic noise level of 1.5 dB or more would be significant where the pre-project noise level exceeds 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 75 dB Ldn. The rationale for the Table 3.11-10 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Impact 3.11-1: Traffic Noise Sources (significant and unavoidable)

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by Fehr and Peers Transportation Consultants. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions. To predict Ldn/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Table 3.11-11 shows the future noise levels associated with traffic on the local roadway network under the proposed 2030 General Plan. The table also shows the estimated noise level increases which may occur under the 2030 General Plan. Table 3.11-12 shows the future noise levels associated with traffic on the local roadway network under buildout of the 2030 General Plan. Buildout of the 2030 General Plan may contribute to an exceedance of the County's transportation noise standards and result in significant increases in traffic noise levels at existing sensitive receptors. As indicated by Table 3.11-12, the related noise level increases under buildout of the General Plan are predicted to increase between 1.4 to 11.5 dB. The 2030 General Plan includes policies and actions that are intended to reduce noise associated with traffic (listed below). Specifically, policies N 1-2 through N 1-7, N 1-9, N 1-12 through N 1-17 would reduce noise associated with traffic. However, some traffic noise impacts cannot be mitigated to a less-than-significant level due the proximity of sensitive receivers to major roadways, and because noise attenuation may not be feasible in all circumstances. Implementation of the 2030 General Plan have a **significant and unavoidable** impact relative to traffic noise.

TABLE 3.11-11: 2030 GENERAL PLAN TRAFFIC NOISE LEVELS VS. 1989 GENERAL PLAN TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (Ldn, dB) 100 Feet From Centerline ¹			Distance to 2030 General Plan Traffic Noise Contours, feet ²		
		1989 General Plan	Draft 2030 General Plan	Change (dB)	70 dB Ldn	65 dB Ldn	60 dB Ldn
I-5	South of Arbuckle	80.3	80.3	0.0	483	1041	2242
I-5	Arbuckle to Williams	80.6	80.7	0.1	509	1097	2363
I-5	North of Williams	79.8	79.8	0.0	452	974	2099
SR 20	East of SR 45	66.2	66.3	0.1	56	121	261
SR 20	SR 45 to Wescott Road	68.7	68.8	0.1	82	177	382
SR 20	Wescott to Fremont Street	70.0	70.1	0.1	101	217	468
SR 20	Colusa to Williams	65.4	65.4	0.0	49	106	228
SR 20	West of Williams	66.4	66.4	0.0	57	123	266
SR 45	South of SR 20	63.7	63.9	0.2	38	82	178
SR 45	North of Colusa	62.8	63.1	0.3	33	71	154
SR 16	Lake County Line	57.5	57.5	0.0	15	31	68
Wildwood Road	South of Hillgate Road	59.1	59.3	0.2	19	40	87
Hillgate Road	Wildwood to Cortina School Rd.	57.7	58.1	0.4	15	33	70
Cortina School Road	Hillage Rd. to Hahn Rd.	55.8	56.3	0.5	11	24	52
Hahn Road	Lone Star to Grimes-Arbuckle	58.8	58.8	0.0	18	38	83
Grimes-Arbuckle Road	Hahn Rd. to Tule Rd.	56.3	56.8	0.5	12	26	57
Tule Road	Grimes-Arbuckle to Poundstone	59.7	60.0	0.3	21	45	96
College City Road	North of White Rd.	58.4	58.8	0.4	17	37	79
Lone Star Road	Myers Rd. to Abel Rd.	61.9	61.9	0.0	29	62	134
Abel Road	East of Lone Star Rd.	56.8	57.3	0.5	13	29	62
Lone Star Road	Abel Rd. to SR 20	61.8	61.8	0.0	28	61	131
Zumwalt Road	Myers Rd. to Walnut Drive	58.4	58.1	-0.3	17	37	79
Walnut Road	West of Zumwalt Drive	59.9	60.1	0.2	21	45	98
Zumwalt Road	North of Walnut Drive	61.1	60.9	-0.2	26	55	118

3.11 NOISE

TABLE 3.11-11: 2030 GENERAL PLAN TRAFFIC NOISE LEVELS VS. 1989 GENERAL PLAN TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (Ldn, dB) 100 Feet From Centerline ¹			Distance to 2030 General Plan Traffic Noise Contours, feet ²		
		1989 General Plan	Draft 2030 General Plan	Change (dB)	70 dB Ldn	65 dB Ldn	60 dB Ldn
Freshwater Road	West of I-5	55.1	55.8	0.7	10	22	47
Wilson Avenue	North of SR 20	61.1	61.1	0.0	26	55	118
Lurline Avenue	SR 45 to I-5	63.1	63.3	0.2	35	75	161
Maxwell Sites Road	East of McDermott Road	59.3	59.6	0.3	19	42	90
Maxwell Road	I-5 to Four Mile Road	63.3	63.4	0.1	36	77	167

¹ Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding

² Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding

Source: FHWA-RD-77-108 with inputs from Fehr and Peers Transportation Consultants, Caltrans and j.c. brennan & associates, Inc. 2011.

TABLE 3.11-12: 2030 GENERAL PLAN BUILDOUT TRAFFIC NOISE LEVELS VS. 1989 GENERAL PLAN NOISE LEVELS

Roadway	Segment	Noise Levels (Ldn, dB) 100 Feet From Centerline ¹			Distance to 2030 General Plan Buildout Traffic Noise Contours, feet ²		
		1989 General Plan	Draft 2030 General Plan Buildout	Change (dB)	70 dB Ldn	65 dB Ldn	60 dB Ldn
I-5	South of Arbuckle	80.3	82.7	<u>2.4</u>	701	1510	3252
I-5	Arbuckle to Williams	80.6	83.2	<u>2.6</u>	756	1628	3508
I-5	North of Williams	79.8	82.5	<u>2.7</u>	678	1461	3148
SR 20	East of SR 45	66.2	71.3	<u>5.1</u>	123	265	571
SR 20	SR 45 to Wescott Road	68.7	71.9	<u>3.2</u>	134	288	620
SR 20	Wescott to Fremont Street	70.0	73.8	<u>3.8</u>	179	385	830
SR 20	Colusa to Williams	65.4	69.1	<u>3.7</u>	87	187	402
SR 20	West of Williams	66.4	69.4	<u>3.0</u>	91	196	422
SR 45	South of SR 20	63.7	71.0	<u>7.3</u>	117	252	543
SR 45	North of Colusa	62.8	68.7	<u>5.9</u>	83	178	383
SR 16	Lake County Line	57.5	58.9	1.4	18	39	85
Wildwood Road	South of Hillgate Road	59.1	62.6	3.5	32	69	149
Hillgate Road	Wildwood to Cortina School Rd.	57.7	63.0	<u>5.3</u>	34	73	158
Cortina School Road	Hillage Rd. to Hahn Rd.	55.8	62.4	<u>6.6</u>	31	67	144
Hahn Road	Lone Star to Grimes-Arbuckle	58.8	67.9	<u>9.1</u>	73	157	338
Grimes-Arbuckle Road	Hahn Rd. to Tule Rd.	56.3	66.4	<u>10.1</u>	57	124	267
Tule Road	Grimes-Arbuckle to Poundstone	59.7	65.9	<u>6.2</u>	53	115	247
College City Road	North of White Rd.	58.4	62.9	4.5	33	72	155
Lone Star Road	Myers Rd. to Abel Rd.	61.9	66.8	<u>4.9</u>	61	132	284
Abel Road	East of Lone Star Rd.	56.8	68.3	<u>11.5</u>	78	167	360
Lone Star Road	Abel Rd. to SR 20	61.8	65.8	<u>4.0</u>	52	112	242
Zumwalt Road	Myers Rd. to Walnut Drive	58.4	68.0	<u>9.6</u>	74	159	343
Walnut Road	West of Zumwalt Drive	59.9	63.5	3.6	37	80	172

3.11 NOISE

TABLE 3.11-12: 2030 GENERAL PLAN BUILDOUT TRAFFIC NOISE LEVELS VS. 1989 GENERAL PLAN NOISE LEVELS

Roadway	Segment	Noise Levels (Ldn, dB) 100 Feet From Centerline ¹			Distance to 2030 General Plan Buildout Traffic Noise Contours, feet ²		
		1989 General Plan	Draft 2030 General Plan Buildout	Change (dB)	70 dB Ldn	65 dB Ldn	60 dB Ldn
Zumwalt Road	North of Walnut Drive	61.1	67.9	<u>6.8</u>	72	155	335
Freshwater Road	West of I-5	55.1	59.3	4.2	19	42	90
Wilson Avenue	North of SR 20	61.1	67.6	<u>6.5</u>	69	148	319
Lurline Avenue	SR 45 to I-5	63.1	69.7	<u>6.6</u>	95	204	440
Maxwell Sites Road	East of McDermott Road	59.3	64.1	4.8	41	87	188
Maxwell Road	I-5 to Four Mile Road	63.3	68.6	<u>5.3</u>	80	173	373

Bold Underline = Significant increase in noise.

¹Traffic noise levels are predicted at a standard distance of 100 feet from the roadway centerline and do not account for shielding

²Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding

Source: FHWA-RD-77-108 with inputs from Fehr and Peers Transportation Consultants, Caltrans and j.c. brennan & associates, Inc. 2011.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy N 1-2: Ensure that noise sources do not interfere with sleep by applying an interior maximum noise level criterion (Lmax) of 45 dBA in sleeping areas, for sensitive receptors.

Policy N 1-3: Prohibit development of new noise-sensitive land uses in areas exposed to existing or projected noise levels that exceed the levels specified in Table N-2. An exception to this policy is provided when the project design demonstrates attenuated noise levels that meet the criteria specified in Table N-2.

Policy N 1-4: Noise created by new mobile sources near existing noise-sensitive land uses shall not exceed noise levels specified in Table N-2.

Policy N 1-5: The following criteria shall be used to determine the significance, for projects required by the California Environmental Quality Act to analyze noise impacts, of roadway noise impacts for roadway improvement, development, and other projects that increase roadway noise:

- Where existing traffic noise levels are less than 60 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in roadway noise levels will be considered significant; and*
- Where existing traffic noise levels range between 60 and 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn increase in roadway noise levels will be considered significant; and*
- Where existing traffic noise levels are greater than 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB Ldn increase in roadway noise levels will be considered significant.*

Policy N 1-6: Require new land use development proposals to address potential stationary and mobile noise impacts and land use incompatibilities from aircraft noise, train travel, and truck travel.

Policy N 1-7: Enforce state and federal laws which prohibit the operation of vehicles equipped with illegal or faulty exhaust systems.

Policy N 1-9: Recognizing that existing and future traffic noise along the Interstate 5 corridor is an area of potential land use conflict for existing and future land uses, the County will allow reasonable use of this land, with an exterior noise exposure level not exceeding 65 dB Ldn/CNEL. Design of new development of noise sensitive uses, such as residential development, along this corridor should incorporate noise attenuation measures such as: larger setbacks from the highway, landscaped berms, and construction that emphasizes noise attenuation to reduce interior noise levels to those identified in Table N-2. Application of this noise standard is intended to provide for reasonable exterior noise levels while discouraging the use of excessively tall and unattractive sound walls.

Policy N 1-12: Where noise mitigation measures are required to achieve the standards of Tables N-1 or N-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been considered and integrated into the project. Landscaped berms shall be considered as a preferred mitigation option over sound walls (refer to Action N 1-B).

Policy N 1-13: An acoustical analysis shall be prepared and submitted to the County according to the requirements of Table N-3 when:

- *Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the Table N-1 (stationary) or Table N-2 (mobile) noise level standards.*
- *A proposed project has the potential to create new noise levels exceeding the noise level standards of Table N-1 or Table N-2.*

Policy N 1-14: Require new multiple occupancy dwellings such as hotels, apartments, and condominiums to comply with the Sound Transmission Control Standards of the California Building Code.

Policy N 1-15: As part of the review of new development projects, consider vibration impacts and require mitigation to reduce any significant adverse impacts to the maximum extent feasible and practical.

Policy N 1-16: In making a determination of impact under the California Environmental Quality Act (CEQA), a significant impact will occur if the project results in an exceedance of the noise level standards contained in this Noise Element, or the project will result in an increase in ambient noise levels by more than 3 dB.

Policy N 1-17: Require use of site design measures, such as the use of building design and orientation, buffer space, use of berms, and noise attenuation measures applied to the noise source, to reduce impacts to the maximum extent feasible and practical before mitigating noise impacts through use of sound walls. The use of sound walls or noise barriers to attenuate noise from existing noise sources is discouraged, but may be allowed if the wall is architecturally incorporated into the project design, blends into the natural landscape, and does not adversely affect significant public view corridors.

Actions

Action N 1-A: Update the Colusa County Code to include a Noise Ordinance that establishes maximum noise levels, consistent with Tables N-1 and N-2, for new development, roadway, and other planning projects. The Noise Ordinance shall include procedures to ensure that new development projects or changes to existing projects adhere to the noise standards contained in the Noise Element and Noise Ordinance. The Noise Element shall identify specific methods of reducing noise, as discussed in Policies N-1 through N-17 and Action N 1-B.

Action N 1-B: Update the County's Zoning Ordinance to require new residential or noise-sensitive development to be designed to minimize noise exposure to noise sensitive users through incorporation of site planning and architectural techniques such as:

- *Locating dwellings as far back from noise generators as possible.*
- *Locating noise sensitive interior spaces, such as bedrooms, away from noise generators.*
- *Orienting buildings to shield noise sensitive outdoor spaces from noise generators.*
- *Sound walls should be avoided or minimized, through berms, setbacks, or other measures, to the maximum extent feasible and appropriate.*

Action N 1-C: Continue to enforce the State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code).

Action N 1-E: Collaborate with Caltrans, the California Public Utilities Commission and railroad operators to improve at-grade railroad crossings in and/or near communities to reduce the necessity for train whistle blasting.

Action N 1-F: To the extent feasible, plan and maintain designated truck travel routes to minimize impacts on noise sensitive land uses.

Action N 1-G: Design roadway improvement projects to use noise attenuating road surfacing materials near noise sensitive residential areas, when practical and economically feasible.

Action N 1-H: Coordinate with Caltrans to maintain highway noise level standards for both new and existing projects to comply with Table N-2.

Note: For the purposes of the Noise Element, mobile noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations, such as a noise control ordinance. Stationary noise sources may include industrial operations, outdoor recreation facilities, HVAC units, loading docks, etc.

Action N 1-I: As a condition of project approval, require new uses and development that introduce sensitive noise receptors near agricultural lands or operations to acknowledge, indemnify, and hold the farmers and the County harmless from reasonable nuisances caused by farming activities that generate noise, dust, vibration and odors through a covenant, easement or other legal property disclosure approved by the County, (See Article 4 of the County Code).

Action N 1-J: As part of the project review and approval process, require that all acoustical studies be prepared in accordance with Table N-3.

TABLE N-1: EXTERIOR AND INTERIOR NOISE LEVEL PERFORMANCE STANDARDS FOR PROJECTS AFFECTED BY OR INCLUDING NON-TRANSPORTATION NOISE SOURCES

Type of Use	Interior Noise Level Standard	Exterior Noise Level, L_{eq} ¹	
		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
All sensitive land uses	45 dB L_{max}	55 dB	45 dB
New residential affected by existing seasonal agricultural noise	40 dB L_{dn}	NA	NA

¹ Exterior noise level standard to be applied at the property line of the receiving land use or at a designated outdoor activity area (at the discretion of the Planning Director) of the new development. For mixed-use type projects, the exterior noise level standard may be waived (at the discretion of the Planning Director) if the project does not include a designated activity area and mitigation of property line noise is not practical. In this case, the interior standard would still apply.

Each of the exterior noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises (e.g., humming sounds, outdoor speaker systems). These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards that are more restrictive than those specified above based upon determination of existing low ambient noise levels.

Notes:

Fixed noise sources which are typically of concern include, but are not limited to the following:

3.11 NOISE

TABLE N-1: EXTERIOR AND INTERIOR NOISE LEVEL PERFORMANCE STANDARDS FOR PROJECTS AFFECTED BY OR INCLUDING NON-TRANSPORTATION NOISE SOURCES

- | | | |
|---------------------------------------|------------------------|--------------------|
| • Air Compressors | • HVAC Systems | • Outdoor Speakers |
| • Blowers | • Fans | • Pile Drivers |
| • Boilers | • Gas or Diesel Motors | • Pump Stations |
| • Cooling Tower/Evaporative Condenser | • Gas Wells | • Rice Dryers |
| • Conveyor Systems | • Generators | • Steam Turbines |
| • Cutting Equipment | • Grinders | • Steam Valves |
| • Drill Rigs | • Heavy Equipment | • Transformers |
| • Emergency Generators | • Lift Stations | • Welders |

The types of uses which may typically produce the noise sources described above include but are not limited to: various industrial and agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields.

TABLE N-2: MAXIMUM ALLOWABLE NOISE EXPOSURE - TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas ¹ L _{dn} /CNEL, dB	Interior Spaces	
		L _{dn} /CNEL, dB	L _{eq} , dB ²
Residential	60 ³	45	--
Residential – Interstate 5 corridor	65	45	--
Transient Lodging	60 ⁴	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60 ³	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

¹ Outdoor activity areas for residential developments are considered to be the back yard patios or decks of single family dwellings, and the patios or common areas where people generally congregate for multi-family development.

Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas and outside lunch facilities.

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 or at a distance of 100 feet from an existing or proposed building envelope.

² As determined for a typical worst-case hour during periods of use.

³ Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

Note: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Planning Department. Commercial and industrial uses have not been listed because such uses are not considered to be particularly sensitive to noise exposure

TABLE N-3: REQUIREMENTS FOR AN ACOUSTICAL ANALYSIS

An acoustical analysis prepared pursuant to the Noise Element shall:

- A. Be the financial responsibility of the applicant.
- B. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
- C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.
- D. Estimate existing and projected cumulative (20 years) noise levels in terms of L_{dn} or CNEL and/or the standards of Table N-2, and compare those levels to the adopted policies of the Noise Element.
- E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which contain noise-sensitive land uses.
- F. Estimate noise exposure after the prescribed mitigation measures have been implemented.
- G. Describe a post-project assessment program that could be used to evaluate the effectiveness of the proposed mitigation measures.

Impact 3.11-2: Stationary Noise Sources (Less than Significant)

Implementation of the 2030 General Plan could result in the future development of land uses that generate noise levels in excess of applicable Colusa County noise standards for non-transportation noise sources. Such land uses may include commercial area loading docks, industrial uses, HVAC equipment, car washes, daycare facilities, auto repair, as well as recreational uses. While the General Plan does not specifically propose any new noise generating uses, the Land Use Maps include industrial land use designations, which may result in new noise sources. Specific land uses that would be located in the County are not known at this time. Additionally, noise from existing stationary noise sources, as identified in background section of this report, will continue to result in noises that may impact noise-sensitive land uses in the vicinity. In addition, General Plan growth would require the construction of schools and parks that could result in additional stationary noise sources. New projects which may include stationary noise sources such as automotive and truck repair facilities, tire installation centers, car washes, loading docks, corporation yards, parks, and play fields may create noise levels in excess of the County's standards.

The 2030 General Plan includes policies and actions that are intended to reduce noise associated with stationary sources (listed below). Specifically, policies N 1-1, N 1-2, N 1-6, N 1-10, N 1-13, and N-17 would reduce noise associated with stationary sources. Implementation of the proposed policies and actions of the 2030 General Plan will reduce noise impacts from stationary noise sources to a **less than significant** level.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy N 1-1: New proposed stationary noise sources shall not result in noise levels that exceed the standards of Table N-1, as measured immediately within the property line of lands designated for noise-sensitive uses.

Policy N 1-2: Ensure that noise sources do not interfere with sleep by applying an interior maximum noise level criterion (Lmax) of 45 dBA in sleeping areas, for sensitive receptors.

Policy N 1-6: Require new land use development proposals to address potential stationary and mobile noise impacts and land use incompatibilities from aircraft noise, train travel, and truck travel.

Policy N 1-10 New development of noise-sensitive uses shall not be allowed where the noise level due to stationary noise sources will exceed the exterior noise level standards of Table N-1 unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table N-1.

Policy N 1-13: An acoustical analysis shall be prepared and submitted to the County according to the requirements of Table N-3 when:

- Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the Table N-1 (stationary) or Table N-2 (mobile) noise level standards.*
- A proposed project has the potential to create new noise levels exceeding the noise level standards of Table N-1 or Table N-2.*

Policy N 1-17: Require use of site design measures, such as the use of building design and orientation, buffer space, use of berms, and noise attenuation measures applied to the noise source, to reduce impacts to the maximum extent feasible and practical before mitigating noise impacts through use of sound walls. The use of sound walls or noise barriers to attenuate noise from existing noise sources is discouraged, but may be allowed if the wall is architecturally incorporated into the project design, blends into the natural landscape, and does not adversely affect significant public view corridors.

Actions

Action N 1-A: Review and update Chapter 13 of the Colusa County Code to ensure consistency with the maximum noise levels identified in Tables N-1 and N-2, for new development, roadway, and other planning projects. The revisions to Chapter 13 of the County Code shall include procedures to ensure that new development projects or changes to existing projects adhere to the noise standards contained in the Noise Element. The revisions to Chapter 13 of the County Code shall identify specific methods of reducing noise, as discussed in Policies N-1 through N-17 and Action N 1-B.

Action N 1-C: Continue to enforce the State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code).

Note: For the purposes of the Noise Element, mobile noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations, such as a noise control ordinance. Stationary noise sources may include industrial operations, outdoor recreation facilities, HVAC units, loading docks, etc.

Action N 1-J: As part of the project review and approval process, require that all acoustical studies be prepared in accordance with Table N-3.

Impact 3.11-3: Airport Noise (Less than Significant)

Implementation of the 2030 General Plan could result in the creation of new noise-sensitive land uses within the 60 dB CNEL noise contours contained within the *Colusa County Airport Land Use Comprehensive Land Use Plan (ALUCP)*, as shown by Figure 3.11-2. Additionally, the implementation of the 2030 General Plan would result in the creation of new noise-sensitive land uses within over-flight areas of the Colusa County airport, thereby presenting the potential for annoyance from single event noise.

Single-event noise associated with aircraft overflights is also of concern when evaluating aircraft noise effects in terms of land use compatibility. Single-event noise is the maximum sound level produced by an individual approach overflight at a specific location, often described in terms of L_{max}, which is the maximum sound level recorded for each event. A different measurement of single-event noise, also commonly used when evaluating aircraft noise, is the SEL. The SEL describes the event's mean energy level over the duration of the noise event. As would be expected, single-event noise levels for aircraft overflights within the Planning Area would be greatest and most frequent near the airport's primary flight paths.

The 2030 General Plan includes policies and actions intended to reduce noise impacts throughout the County. Policy N 1-8 requires new development projects and long-term planning projects to conform with the County's Airport Safety and Noise land use criteria, as identified in the Colusa County Airport Comprehensive Land Use Plan (CLUP). Actions N 1-D implement this policy by providing specific design and attenuation standards. With the implementation of the 2030 General Plan policies and actions, the noise impact relative to airports would be **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy N 1-8: Require new development projects and long-term planning projects to conform with the County's Airport Safety and Noise land use criteria, as identified in the Colusa County Airport Comprehensive Land Use Plan (CLUP).

Actions

Action N 1-D: Review new development and long-term planning projects for conformity with the County's Airport Safety and Noise land use criteria, as identified in the Colusa County Airport Comprehensive Land Use Plan (CLUP).

Impact 3.11-4: Construction Noise (Less than Significant)

New development, maintenance of roadways, installation of public utilities and infrastructure generally require construction activities. These activities include the use of heavy equipment, impact tools. Table 3.11-13 provides a list of the types of equipment which may be associated with construction activities, and their associated noise levels.

TABLE 3.11-13: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Predicted Noise Levels, L _{max} dB				Distances to Noise Contours (feet)	
	Noise Level at 50'	Noise Level at 100'	Noise Level at 200'	Noise Level at 400'	70 dB L _{max} contour	65 dB L _{max} contour
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006. j.c. brennan & associates, Inc. 2011.

Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Construction could result in periods of significant ambient noise level increases and the potential for annoyance. However, the Colusa County Noise Ordinance establishes allowable hours of operation and noise limits for construction activities as follows:

13-8 General restrictions – Special provisions.

- (b) Construction and Landscape Maintenance Equipment. Notwithstanding any other provision of this chapter, between the hours of seven a.m. and seven p.m. on Mondays through Fridays, and between the hours of eight a.m. and eight p.m. on Saturdays and Sundays, construction, alteration, repair, or maintenance activities which are authorized by valid county permit or business license, carried out by employees or contractors of the county, or private activities not requiring a permit shall be allowed if they meet at least one of the following noise limitations:
- (1) No individual piece of equipment produces a noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.
 - (2) The noise level at any point outside of the property plane of the project does not exceed eighty-six dBA.

- (A) The provisions of subsections (b)(1) and (2) of this section shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he/she may determine to be in the public interest. Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at six a.m. on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before seven a.m. The permit shall be revoked if any noise complaint is received by the sheriff's department.
- (B) No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.
- (C) No powered blower shall be operated within a one-hundred-foot radius of another powered blower simultaneously.
- (D) On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.

Because all construction activities will be subject to the requirements of the Colusa County Noise Ordinance Section 13-8 with respect to limits on construction noise, implementation of the 2030 General Plan would have a **less than significant** impact.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy N 1-2: Ensure that noise sources do not interfere with sleep by applying an interior maximum noise level criterion (Lmax) of 45 dBA in sleeping areas, for sensitive receptors.

Policy N 1-7: Enforce state and federal laws which prohibit the operation of vehicles equipped with illegal or faulty exhaust systems.

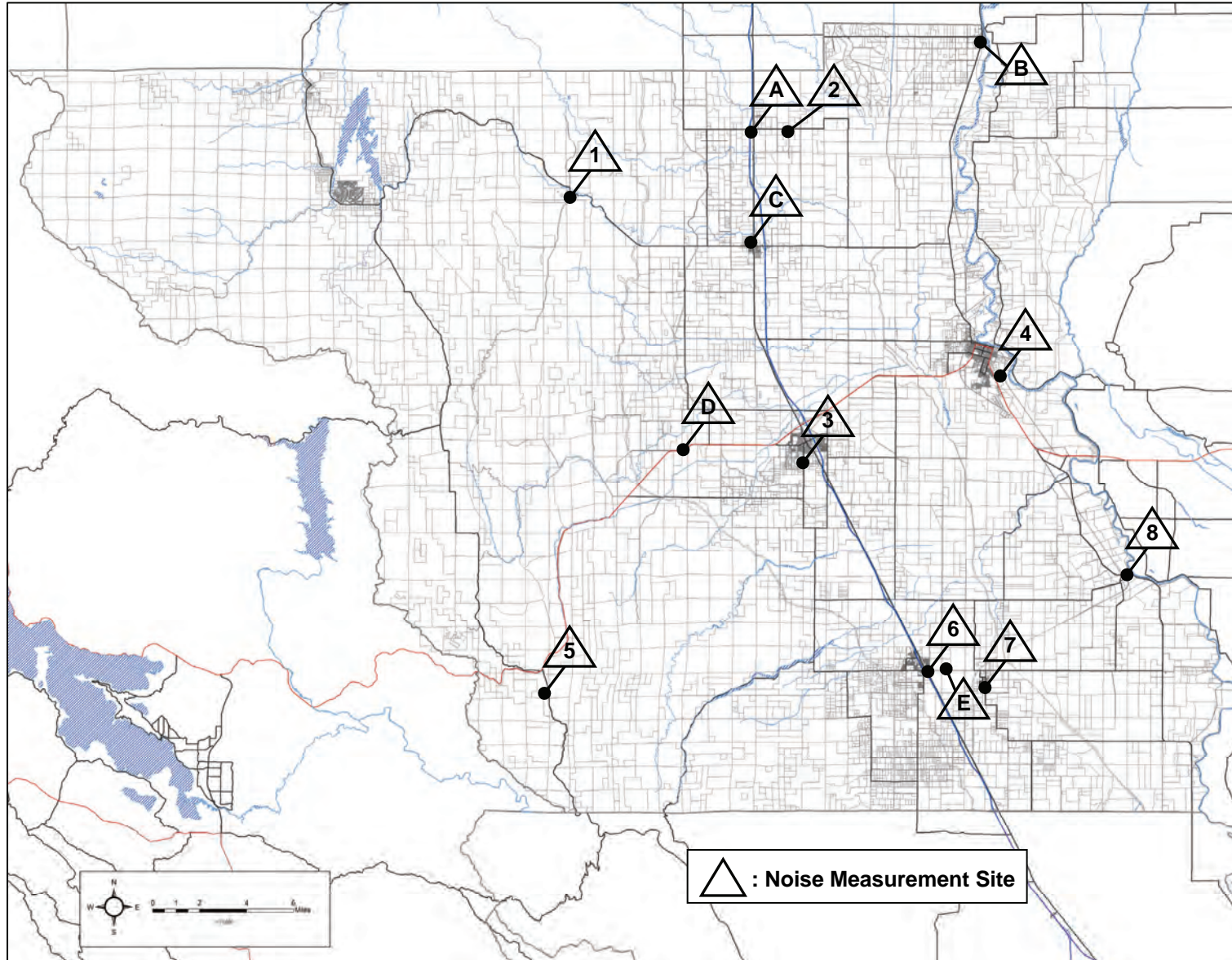
Policy N 1-15: As part of the review of new development projects, consider vibration impacts and require mitigation to reduce any significant adverse impacts to the maximum extent feasible and practical.

Actions

Action N 1-K: As part of the project review and approval process, require construction projects and new development anticipated to generate a significant amount of ground borne vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on Federal Transit Administration criteria.

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Figure 3.11-1
Colusa County General Plan Noise Element – Colusa County, California
Noise Measurement Locations



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Figure 3.11-2
Colusa County General Plan Noise Element – Colusa County, California
Colusa County 2015 Airport Noise Contours



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Public services such as fire and police protection services are core to the maintaining a safe and healthy community. Educational services serve as a foundation for providing citizens with the skills and resources to excel the economy today and in the future. There are many other public services that are important to a community such as parks and recreational opportunities, libraries, museums, hospitals, and other healthcare facilities.

This section provides a background discussion of the hazardous materials and waste, fire hazards, and hazards from air traffic found in Colusa County. This section is organized with an existing setting, regulatory setting, and impact analysis. One comment regarding public services was received from the Colusa Local Agency Formation Commission (LAFCO) during the Notice of Preparation scoping period for the EIR. LAFCO requested that the Draft EIR include an analysis of potential impacts to established service providers.

3.12.1 EXISTING CONDITIONS

FIRE PROTECTION SERVICES

Existing facilities

Fire protection in Colusa County is provided by six rural fire districts, one city fire department, one joint powers authority, the California Department of Forestry (CDF), and the U.S. Forest Service. The majority of districts are staffed by volunteer firefighters. There are mutual aid agreements between most of the agencies to ensure adequate staff and equipment are available when a fire occurs.

The incidence of fire in the county is relatively low, particularly on the valley floor. The greatest hazards are in the forest area, which generally fall under the jurisdiction of state and federal agencies. The greatest threat of fire occurs annually during the months from June through October due to dry conditions and summer heat. Each summer, the CDF and U.S. Forest Service increase their staff in anticipation of brush and forest fires.

The rural fire protection districts are responsible for structural and wildfire protection as well as medical emergencies within their respective districts. Estimated response times may range from three minutes in the cities of Williams and Colusa to more than 30 minutes in the rugged mountain areas.

Each fire protection district earns a rating calculated by the Insurance Service Office (ISO). This rating, known as a Public Protection Classification (PPC), is utilized by many insurance providers to calculate insurance premiums within the district. Ratings range from 1 to 10. Class 1 generally represents superior property fire protection, and Class 10 indicates that the area's fire-suppression program does not meet ISO's minimum criteria.

The PPC ratings are calculated on the following factors:

- Fire alarm and communication systems, including telephone systems, telephone lines, staffing, and dispatching systems;
- The fire department, including equipment, staffing, training, and geographic distribution of fire companies; and,
- The water-supply system, including the condition and maintenance of hydrants, and a careful evaluation of the amount of available water compared with the amount needed to suppress fires.

Ratings in Colusa County range from 4 to 9. The lower ratings (higher ISO numbers) generally occur in areas that are not served by a public water system, areas with insufficient equipment, or areas with inadequate water flow capacity.

District Profiles

Arbuckle/College City Fire Protection District. The District encompasses 123 square miles in the south central part of Colusa County. The fire station is located at 506 Lucas Street in Arbuckle. Staff includes one paid chief, two paid fire fighters, one part-time administrative assistant, and 25 volunteer firefighters. The station includes one command vehicle, one rescue vehicle, one utility/support vehicle, three Type 1 vehicles, two Type 2 vehicles, and a water tender. The ISO rating for the District is 5 within the urban area and 8 in the outlying rural areas. This station receives approximately 600 calls per year, with nearly 80 percent of those calls for emergency medical services.

Bear Valley/Indian Valley Fire Protection District. The District encompasses about 60 square miles in the Bear Valley and Indian Valley areas of Colusa County and also extends about seven miles north into Glenn County. The District's primary role is to provide support in the event of structural fires, but the District also provides occasional support to the CDF in fighting grass or range fires. The District also provides emergency medical services to the communities of Stonyford and Lodoga. The District's primary station is located on Market Street in Stonyford, and a smaller station is located in Century Ranch. The District's response time to calls in the town of Stonyford is three to five minutes, while response times in rural areas can be up to 30 minutes in the more remote areas of the District. According to the 2010 Glenn LAFCO Fire Protection Districts MSR, the District receives 95 to 100 calls per year, primarily for medical aid. There are 20 unpaid volunteer fire fighters under the direction of the Fire Chief.

Sacramento River Fire Protection District. The Sacramento River Fire District (SRFD) provides fire protection, emergency medical services, rescue, and hazardous materials response services to the eastern portion of unincorporated Colusa County, including the community of Grimes. The District also provides service to the Colusa Indian Community Cachil Dehe Wintu Reservation and the Colusa National Wildlife Refuge. SRFD's 207 square-mile service area runs along the Sacramento River from two miles south of Princeton to the Colusa/Yolo County line. The SRFD serves the service area from its fire station at 235 Market Street in the City of Colusa. The SRFD is staffed by

one full time fire chief and 44 volunteers. One firefighter is usually on duty during daytime hours Monday through Friday, with support of volunteer firefighters. Nighttime and weekend staffing is provided by a duty officer and the volunteers. According to the SRFD, the Fire District's equipment is adequate for current demand.

During the period between July 1, 2005 and June 30, 2006, SRFD responded to 75 fires, 184 medical emergencies, 42 fire investigations, 31 mutual aid and automatic aid responses, 17 false alarms, one hazardous materials call, and three rescues. During this period SRFD requested mutual aid 23 times mostly from Meridian Fire District and Colusa City Fire Department.

City of Colusa Fire Department. The City of Colusa Fire Department provides fire protection and emergency services within the city limits from its fire station located at 750 Market Street. The station currently needs repairs and renovation and is operating at capacity. The Fire Department maintains a staff of five paid and 26 volunteer firefighters. The Department maintains a mutual aid agreement with six other fire agencies within Colusa County (City of Colusa 2007b).

Glenn-Colusa Fire Protection District. The District provides services to a small sparsely populated area between the Sacramento River and Butte Creek. The majority of the service area is in Glenn County. The fire station is located in Butte City, about four miles into Glenn County from the border with Colusa County. Development in this area is limited by flood hazards, poor access, and a lack of urban services.

Maxwell Fire Protection District. The District encompasses 130 square miles in the north central part of Colusa County. The fire station is located at 231 West Oak Street in Maxwell. The District includes three paid firefighters and 27 volunteers. District equipment includes two Type 1 vehicles, a Type 1 ladder truck, one Type 3 vehicle, one 3,000 gallon water tanker, a rescue/medical unit, and a light utility vehicle. The District's ISO rating is 5 in town and 8 out of town. The majority of the calls received by this station are for medical emergencies. The next highest percentage of calls is for grass fires.

Princeton Fire Protection District. The District covers the northeastern portion of Colusa County surrounding and including the community of Princeton. The station is located at 342 Winter Street in Princeton. The District is staffed completely by volunteers and handles very few calls.

Williams Fire Protection Authority. This agency is a joint powers authority (JPA) between the Williams Rural Fire Protection District and the City of Williams Fire Department. The fire station is located at 810 E Street in Williams. Staff includes one paid fire chief, four paid shift personnel, one part-time paid administrative assistant, and 39 volunteer firefighters. This agency has two command vehicles, two water tenders, one rescue vehicle, one brush/quick attack vehicle, one aerial ladder truck, and three engines. The ISO rating is 4 within the City of Williams and 6 outside the city limits, but within five miles of the station. The distribution of calls has been consistent, with approximately 67 percent of calls for medical services and 33 percent for fires.

State/Federal Responsibility Areas

Wildfire protection in the non-federally owned upland areas, or State Responsibility Areas (SRAs), is the responsibility of the CDF. The CDF has jurisdiction over approximately 459 square miles of Colusa County. The CDF operates a fire station at Leesville (2959 Bear Valley Road, Williams), which is generally manned between June 15 and November 1. This CDF unit also assists with emergency medical services and structural fire response in western Colusa County.

Wildfire protection within the Mendocino National Forest is provided by the U.S. Forest Service, who works closely with CDF and the Bear Valley/Indian Valley Fire District. The U.S. Forest Service operates one fire station at 310 Quail Street in Stonyford. The station is generally staffed between June and October. The U.S. Forest Service also maintains an unmanned lookout tower on Goat Mountain, on the western border of Colusa County adjacent to Lake County.

LAW ENFORCEMENT SERVICES

The unincorporated areas of Colusa County receive general public safety and law enforcement services from the Colusa County Sheriff's Department. The Sheriff's Department also operates the Office of the Coroner and the County Office of Emergency Services (OES). The Sheriff's Department is responsible for all law enforcement patrol services throughout all areas of the unincorporated County.

The municipal police departments serve the cities of Colusa and Williams. Both cities use the county jail for all detentions. Since many law enforcement matters cross jurisdictional lines, the municipal police forces work closely with the Colusa County Sheriff's Department. The Sheriff's Department also provides 24-hour dispatching services for the municipal police departments. The County Sheriff's Department and the police forces of the cities of Colusa and Williams often work in concert for search and rescue efforts.

The U.S. Forest Service District Ranger provides law enforcement services within the Mendocino National Forest. The Fish and Game Warden patrols the National Wildlife Refuges. The California Highway Patrol patrols state roads and maintains an office at 100 E Street in Williams.

Colusa County Sheriff's Department

FACILITIES

In 1962, a new Sheriff's Office and Jail was constructed at its current location on Bridge Street in the City of Colusa. During the past 20 years, renovations have been completed three times in order to keep up with changing times. The current facility is a 26,000 square foot concrete building that employs 75 staff members and has 93 volunteer members. It is a maximum security jail facility that can house 92 prisoners.

SHERIFF'S SERVICES

The **Investigations Unit** is made up of plain-clothes detectives and a detective supervisor. The detectives are responsible for following up on all reported crimes not routinely handled by a patrol

deputy. These crimes may include property crimes, sex crimes, crimes against children, homicides and financial crimes. The detectives are often called to a crime scene to photograph, fingerprint, collect evidence, and interview victims, witnesses, and suspects.

The **Colusa County Volunteer Citizen Service Unit (V.C.S.U.)** is made up of citizens 18 or older and was established to aid all Colusa County Law Enforcement Agencies by providing non-enforcement services and activities. Volunteers may work in office or clerical positions, volunteer patrol, crime prevention, or any non-enforcement function requested by the involved agencies and approved by the advisory board.

The Volunteer Citizen Service Unit is a non-profit corporation. It has its own Board of Directors. The Board of Directors serve under an Advisory Board comprised of the Colusa County Sheriff, Chief of the Colusa Police Department, and Chief of the Williams Police Department. Liaison between the Advisory Board and the volunteers is maintained through the Sheriff's Office Crime Prevention Coordinator.

The Colusa County Sheriff has the responsibility and authority for all search and rescue activities within the boundaries of Colusa County. To help provide these services a rescue team was formed in 1984. The team is composed of dedicated, trained, civilian volunteers.

The **Search and Rescue Team (SAR)** has been involved in various missions from searching for lost children, motorcyclists, and hunters to rescuing victims of plane crashes. SAR is also used for evidence searches in major crimes. The SAR Team operates an "Aid Station" to assist outdoor enthusiasts on major holiday weekends.

The **Civil Unit** fulfills the Sheriff's ministerial duties to the court. The Sheriff is tasked by the California Government Code to serve all proceedings presented to him and to enforce court judgments in his capacity as levying officer. The Colusa County Sheriff's Office Civil Unit serves court process. Fees are set by the Government Code. Sworn Deputies assigned to the Civil Unit are trained to handle the many different types of court civil process as well as domestic violence restraining orders and family law orders. Although the Civil Unit may not give legal advice, information on certain specific procedures and the status of current civil process is available by telephone.

The **Communications Center** is comprised of dispatchers who are trained to handle a variety of duties and responsibilities in the County 911 Communications Center. Dispatchers participate in a variety of duties and responsibilities involving 911 calls covering law enforcement, fire and medical services. These duties include receiving incoming police, fire, medical and emergency assistance calls and to dispatch any necessary units; to perform a variety of general support duties related to dispatcher activities including jail detention duties, jail control panel, record keeping, data entry and filing.

Dispatchers have knowledge of the technique, procedures, and methods used in the operation of a public safety communications center. The functions and responsibility of Sheriff's Office and other

3.12 PUBLIC SERVICES AND RECREATION

user agencies; general office and record keeping procedures; FCC rules and regulations relative to the operating of two-way communications equipment; jurisdictions and locations of streets, roads, and highways within the county; computer and the kind of information obtainable from criminal data banks.

The **Records Unit** maintains files on offenders required to register with the Department of Justice. This division maintains local data and a file containing personal information, fingerprints and photographs on Sex Offenders (290 PC), 11590 H&S/Drug Registrants, and 457.1 PC/Arson Registrants. Registration information on Arson and Sex Offenders is forwarded to the Department of Justice for entry into the automated statewide computer system "California Law Enforcement Telecommunications System". Sex Offenders (290 PC) files are also entered into the "Megan's Law" CD ROM file.

Live Scan applicant fingerprinting is done daily during business hours. Live Scan devices electronically capture fingerprint images which are electronically transmitted to the Department of Justice. This process eliminates the use of ink in fingerprinting.

Local crime data on major crimes is compiled and reported to the State on a monthly basis. Colusa County crime data is reported on Uniform Crime Reporting forms. This data is then forwarded to the national UCR (Uniform Crime Reporting) Program that compiles the information. UCR on a federal level is administered by the Federal Bureau of Investigation.

In addition to the above, the Records Unit is responsible for processing all crime reports and citations. Report copies are then routed to the required agencies, i.e., District Attorney, Victim Witness Advocacy, Probation Department, Child Protective Services, Crime Prevention, Insurance Companies, and victims. Other duties include processing initial and renewal gun permits. Live scan fingerprints are used to expedite the fingerprint for initial gun permit applications.

The **Colusa County Office of Emergency Services (OES)**, a division of the Colusa County Sheriff's Office, is the emergency management agency for Colusa County, and as such is the lead agency that fulfills the county's requirements under the Emergency Services Act (Government Code Section 8550 et. seq.). This office works with partners in the emergency management programs of the Cities of Colusa and Williams as well as the Colusa Regional Medical Center. OES also works with the various special districts, authorities, and joint powers authorities within the boundaries of Colusa County.

The primary mission for OES is to coordinate the county government's role in response to disaster or other large scale emergency. The four aspects of emergency management are:

- Preparation: Training, drills and exercises, plan development, and other such activities are part of the preparation before the disaster happens. OES works with county staff, allied agencies, neighboring jurisdictions, and state agencies with a local role to ensure the necessary procedures and networks are in place.

- Response: This office responds to a disaster (or potential disaster) in the unincorporated area of Colusa County, to support another political jurisdiction within the boundaries of Colusa County deal with a disaster in their territory, or both. Personnel from the various departments and allied agencies that have participated in the training respond to the Emergency Operations Center (EOC), where the County's effort is coordinated. The EOC does the following:
 - Manage the County's overall response to natural and man-made disasters.
 - Task various County Departments with emergency responsibilities (some pre-identified, some generated as the disaster requires).
 - Coordinate the response and recovery efforts of governmental and allied non-governmental agencies.
- Recovery: When the threat has been removed, it is time to move back to normal or at least as close to normal as possible. This involves ensuring the functions of county government are back in place as quickly as possible. OES is unable to provide direct disaster assistance, including financial assistance, to the residents of Colusa County. However, this office is a primary conduit for information, including information about the agencies that can directly help.

Crimes by Category in Colusa County

Statistics on the number of crimes by category of crime in Colusa County from 2003 through 2008, as reported by the California Department of Justice, are shown in Table 3.12-1 below.

	2003	2004	2005	2006	2007	2008
Violent Crimes	61	59	51	80	66	42
Homicide	0	0	0	0	1	1
Forcible Rape	10	2	7	10	4	3
Robbery	6	5	4	7	7	8
Agg. Assault	45	52	40	63	54	30
Property Crimes	380	352	353	363	352	310
Burglary	191	207	186	164	194	163
Vehicle Theft	70	55	62	78	55	34
Larceny-Theft over \$400	119	90	105	121	103	113
Total Larceny-Theft	371	314	320	382	353	293
Over \$400	119	90	105	121	103	113
\$400 and Under	252	224	215	261	250	180
Arson	2	7	2	7	1	6

As shown in the table, the majority of crimes committed in Colusa County consist of non-violent property crimes, primarily burglary. Between 2003 and 2008 there were only two murders reported in Colusa County.

EDUCATIONAL SERVICES

Existing Facilities

Colusa County is served by six school districts: Colusa Unified School District, Maxwell Unified School District, Pierce Joint Unified School District, Princeton Joint Unified School District, Stony Creek Joint Unified School District, and Williams Unified School District. The Colusa County Office of Education assists the Colusa, Maxwell, Pierce, and Williams School Districts by providing a variety of services, including fiscal management, curriculum coordination, special schools and programs, health services, media programs and materials, and coordination of state and federal projects (CCOE Public School Directory). The Stony Creek and Princeton School Districts include areas of Glenn County and, as such, are supported by the Glenn County Office of Education.

Woodland Community College, which is part of the Yuba Community College District operates the Colusa County Outreach Facility. The Colusa County Outreach Facility opened in January 2011 in Williams. The facility is a modern 9,500 square foot facility on 5 acres with 4 classrooms that accommodate 120 students at any one time. The entire facility is equipped with wireless internet for student use. The facility houses student services that include registration support, financial aid, matriculation services, counseling, and TRIO Programs (Upward Bound and Student Support Services). At the Colusa County Outreach Facility students have the option of taking core classes to transfer to a state university, Career Technical Education (Administration of Justice, Early Childhood Education, Emergency Medical Technician, Ag Related Classes, etc.), Basic Skills, and English as a Second Language courses. The County of Colusa is part of Woodland Community College's service area.

Public elementary and secondary schools located in Colusa County are listed in Table 3.12-2 below.

Table 3.12-2: Schools and Student Enrollment in Colusa County					
	Student Enrollment				
	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Colusa Unified School District					
Burchfield Elementary School (K – 3 rd)	436	424	439	443	467
- 400 Fremont Street, Colusa					
Egling Middle School (4 th – 8 th)	532	532	511	482	473
- 813 Webster Street, Colusa					
Colusa High School (9 th – 12 th)	390	383	333	336	343
- 901 Colus Ave., Colusa					
Colusa Alternative Continuation High School (9 th – 12 th)	33	34	32	29	26
- 817 Colus Ave., Colusa					
Colusa Alternative Home School (K – 12 th)	51	55	55	64	85
- 745 10th Street, Colusa					
Total District Enrollment:	1442	1428	1370	1354	1394

Table 3.12-2: Schools and Student Enrollment in Colusa County

	Student Enrollment				
	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Maxwell Unified School District					
Enid Prine Continuation High School (9 th – 12 th)	10	9	10	10	9
- 514 West Oak Street, Maxwell					
Maxwell Elementary School (K – 8 th)	319	303	315	289	270
- 146 North Street, Maxwell					
Maxwell High School (9 th – 12 th)	126	130	148	160	143
- 515 Oak Street, Maxwell					
Total District Enrollment:	455	442	473	459	422
Pierce Joint Unified School District					
Arbuckle Alternative High School (10 th – 12 th)	14	16	20	18	15
- 966 Wildwood Road, Arbuckle					
Arbuckle Elementary School (K – 5 th)	519	544	563	588	562
- 701 Hall Street, Arbuckle					
Grand Island Elementary School (K – 6 th)	84	79	86	83	77
- 551 Leven Street, Grimes					
Lloyd G. Johnson Junior High School (6 th – 8 th)	285	281	309	266	272
- 938 Wildwood Road, Arbuckle					
Pierce High School (9 th – 12 th)	377	369	381	391	370
- 960 Wildwood Road, Arbuckle					
Total District Enrollment:	1279	1289	1359	1346	1296
Williams Unified School District					
Mid Valley Continuation High School (9 th – 12 th)	16	15	19	17	22
- 1105 D Street, Williams					
Williams High School (9 th – 12 th)	288	300	322	314	354
- 222 11th Street, Williams					
Williams Middle School (4 th – 8 th)	451	458	460	457	
- 300 11th Street, Williams					
Williams Primary Elementary School (K – 3 rd)	378	430	424	405	384
- 1404 E Street, Williams					
Williams Junior High School (7 th – 8 th)					168
- 260 11th Street, Williams					
Williams Upper Elementary School (4 th – 6 th)					290
- 300 11th Street, Williams					
Total District Enrollment:	1133	1203	1225	1193	1218
Stony Creek Unified School District					
Indian Valley Elementary School (5 th – 6 th)	20	19	15	15	15

Table 3.12-2: Schools and Student Enrollment in Colusa County

	Student Enrollment				
	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
- 5180 Lodoga-Stonyford Road, Stonyford					
Total District Enrollment:	20	19	15	15	15
Princeton Joint Unified School District					
Princeton Elementary School (K – 6 th)	102	90	92	107	112
- 428 Norman Road, Princeton					
Princeton Elementary Community School	2	5	3	3	2
Princeton High Community Day School	3	3	3	5	4
Princeton Junior/Senior High School (7 th – 8 th and 9 th – 12 th)	82	89	95	109	118
- 474 State, Princeton					
Total District Enrollment:	189	187	193	224	236
County School Enrollment totals:	4518	4568	4635	4591	4581

SOURCE: CALIFORNIA DEPARTMENT OF EDUCATION, 2009.

PARKS AND RECREATIONAL SERVICES

Outdoor Recreation

MENDOCINO NATIONAL FOREST

The largest designated recreation area in Colusa County is the Mendocino National Forest, managed by the U.S. Forest Service. A variety of recreational opportunities exist within the forest: camping, hiking, backpacking, boating, fishing, nature study, photography, and off-highway vehicle travel. The Forest is a "working forest," so activities such as logging and grazing do occur. The U.S. Forest Service seeks to manage the variety of uses to ensure conservation of the forest resources.

Many of the developed recreation sites within the Mendocino National Forest were built 30-50 years ago. Since then, visitor preferences have changed and some facilities are in poor condition. In 2007, the U.S. Forest Service completed a 5-year analysis of recreational facilities and developed a list of proposed changes. These changes include fee increases for various facilities, removal of amenities, and replacement of existing amenities.

Letts Lake in Upper Letts Valley (within the Mendocino National Forest) is a popular recreation area. There are eight campgrounds around the lake, a few summer homes, and numerous trails. The lake is stocked with trout and bass, and boating is limited to non-motorized craft only.

Davis Flat, also located within the Mendocino National Forest, is a popular spot for off-highway vehicle (OHV) activity. The facilities at Davis Flat include a campground and special trails marked

for various levels of driving skill. Organized OHV events require a special use permit which requires a bond to guarantee cleanup and trail maintenance following the event.

SACRAMENTO RIVER STATE RECREATION AREA (SRA)

The Sacramento River SRA provides 60 acres of riverfront recreation at the north end of the City of Colusa. The park features boat ramps, picnic facilities, trails, and camping. Fishing and boating are popular activities at this park. Though the Sacramento River SRA is the only public boat launch in the area of the Sacramento River around the City of Colusa, people enter the river at several private sites. Much of the land adjacent to the Sacramento River is privately owned agricultural land.

Boating is a popular activity on the Sacramento River. The boating season generally begins in April and continues until winter weather sets in. A cleared navigational channel is maintained between the City of Colusa and Sacramento. This channel allows boats up to 40 feet in length to travel between Colusa and Sacramento. There are several areas along the river for camping and houseboat rentals, most of which are outside of the County of Colusa. A river cruise from the mouth of the Sacramento River near Antioch to Colusa is approximately 145 miles and takes approximately 10-12 hours.

The river is generally not visible to motorists on SR 45, which parallels the river, due to an extensive system of levees along the river. There are segments of Butte Slough Road and River Road which are on top of the levees and offer views of the river. The only organized trail system along the banks of the river within Colusa County is connected to the Colusa-Sacramento River SRA.

FISHING

Fishing is plentiful in the Sacramento River between Grimes and Princeton. Salmon, steelhead trout, and striped bass are the most common fish in this area. People fish both from boats and the banks of the Sacramento River. The Mendocino National Forest offers 85 miles of trout streams. Big Stony Creek and Little Stony Creek and their tributaries are the primary fishing areas. The streams are occasionally stocked with trout by the California Department of Fish and Game. Letts Lake, a 35-acre lake stocked with trout and bass, is another popular fishing spot.

HUNTING

More ducks and geese winter in the Sacramento Valley than any other area of the Pacific Flyway. Numerous wildlife refuges help sustain the birds in Colusa County through the fall and winter by providing food and sanctuary. Ducks generally arrive in August, and geese generally arrive in late November. Public hunting is permitted in areas of the refuges during the appropriate season, but hunters must obtain a permit from one of the check stations.

In addition to providing habitat for ducks and geese, the refuges also attract swans, marsh and shore birds, upland birds, and small mammals. Nearly 200 species of birds have been recorded in the area, making Colusa County a popular location for bird watchers.

There are also a number of commercial hunting clubs and cooperatives operated by community organizations throughout Colusa County. Hunting camps are operated on private agricultural land by special use permit. Lambertsville has a large congregation of mobile homes and trailers used by hunters on a seasonal basis.

The Walker Ridge Public Hunting Area, located in the western foothills of Colusa County, is maintained by the Bureau of Land Management. This area is popular for hunting of quail and deer.

Local Recreation Areas and Parks

CITY OF COLUSA

The City of Colusa Parks and Community Services Department is responsible for the operation of an aquatics complex, softball facility, and nine existing parks within the City of Colusa, as well as organizing various city-wide recreational activities that are offered on a year-around basis to city and county residents. The City of Colusa has an extensive network of local park facilities. The amenities at the City of Colusa parks include BBQ facilities, swimming pools, picnic tables, playgrounds, tot lots, trails, baseball fields, and basketball courts. The City of Colusa is also home to the Sacramento River SRA. The City of Colusa recently assumed management control of the Sacramento River SRA from the State. The existing park and recreation facilities in the City of Colusa are listed in Table 3.4-1.

CITY OF WILLIAMS

The City of Williams Parks and Recreation Department is responsible for the operation of all parks and recreation facilities within the City of Williams, as well as organizing various city-wide recreational activities that are offered on a year-around basis to city and county residents. The existing park and recreation facilities in the City of Williams are listed in Table 3.12-3.

ARBUCKLE PARKS AND RECREATION

The Arbuckle Parks and Recreation District was officially formed in 2007. Prior to the formation of the District, Arbuckle Parks and Recreation had been operating in the Arbuckle area solely from community donations and other government agencies. In the past several years Arbuckle Parks and Recreation in coordination with the Arbuckle Revitalization Committee has been creating some new community parks. These joint efforts were formed out of the CEDS (Community Economic Development Strategy) Plan for Arbuckle. In 1999 the Plan was accepted, and action items outlined for the Parks and Recreation Committee. The beautification of Arbuckle and the creation of a downtown parks plan were the first action items undertaken by the Committee.

Since 1999 the two committees have created the “Wee Park,” a beautification project at the intersection of Old Hwy 99 and Hillgate Road. The “KIA Memorial Park” in downtown Arbuckle, a project that also recognized members of the Arbuckle and College City communities killed during a foreign war was also completed. Finally, the Committee is developing the “Lavanch Hursh Park”, this park is also a downtown park that will have picnic areas, a covered pergola for events in the park, and central location for community events. For the recreation portion of the plan the committee has created and implemented the “Swim Program,” at the Arbuckle Pool. Other

programs offered include Adult Aerobics, a Tot Tumbling Class and Yoga, as well as a youth basketball league.

The existing park and recreation facilities in Arbuckle are listed in Table 3.12-3.

MAXWELL RECREATION AND PARKS DISTRICT

The Maxwell Recreation and Parks District was formed to manage the town pool and provide for the recreation needs of the community. Recreation facilities within the community of Maxwell include the local pool, the rodeo grounds and recreational opportunities on facilities owned by the local school district, which include primarily sports fields and playground facilities.

OTHER FACILITIES

The foothill and upland areas are surrounded by an abundance of outdoor recreational areas, however there are no formal park facilities in most of these areas. . The community of Sites is served by a small park. Residents in Stonyford and Lodoga are served by the Stonyford Recreation and Park District, which includes the Stonyford Rodeo grounds and amenities at the East Park Reservoir. The East Park Reservoir includes camping and other recreational uses. Stonyford also has one park.

PRIVATE RECREATIONAL FACILITIES

There are two golf courses in Colusa County. The Arbuckle Golf Club is a 9-hole course located on Hillgate Road, west of Arbuckle. The Colusa Golf and Country Club is a 9-hole course located on SR 20, southeast of Colusa. Wilbur Hot Springs is located in southwest Colusa County in an area known in the early 1900's for containing many hot springs resorts. The naturally hot mineral waters flow through the baths in varying temperatures from 98° to 120°.

Table 3.12-3: Inventory of County Parks by Community

Community	Name/Location	Description
Colusa	Colusa Levee Scenic Park Located on 10th and Main St. adjacent to Sacramento River Recreation Area.	This community park is placed on 2.19 acres and built upon the Sacramento River Levee. The park includes: grass, trees, paved walking, jogging or biking trail, picnic tables, a 20' x 20' concrete stage and BBQ Pits.
Colusa	Sacramento River SRA Located between Roberts Road and the Sacramento River, north of the City of Colusa.	The Sacramento River SRA provides 60 acres of riverfront recreation at the north end of the City of Colusa. The park features boat ramps, picnic facilities, trails, and camping. Fishing and boating are popular activities at this park. Though the Sacramento River SRA is the only public boat launch in the area of the Sacramento River around the City of Colusa
Colusa	Memorial Park Located on 10th and Market Sts.	This park is placed on 2.35 acres with shady, tree-filled grassy areas with a children's play area that includes swings, a slide, rock-climbing wall, picnic tables and public restroom. Electricity available for public events.

Table 3.12-3: Inventory of County Parks by Community

Colusa	A.B. Davison Park Located on 10th St. between Webster and Parkhill.	This park is situated on 1.02 acres with shady tree-filled grassy areas with paved walking paths throughout.
Colusa	Municipal Swimming Pool Located on 9th St. between Webster and Parkhill.	The Municipal Swimming Pool includes One 8ft deep Pool, One 3ft. deep pool, and one wading pool. Open during the summer only.
Colusa	Will S. Green Park Located on 8th St. between Webster and Parkhill.	This park is located near the Municipal Swimming pool on 2.35 acres that includes barbeque facilities, picnic tables, horseshoe pit, children play area with swings, slide, jungle gym, and glider swings for tots. This is a great area for family activities.
Colusa	Sankey/Elmwood Park Located between Webster and Parkhill and 3rd and 4th Sts.	This 0.58 acre park includes a kindergarten playground with slide, swings, drinking fountain, picnic tables, BBQ pit, restrooms, lighted tennis courts, and volleyball area. Electricity available for public events.
Colusa	C.D. Semple Park Located on the corner of 3rd and Larson Ln.	This 1.2 acre park is an open grass area that includes a children's play area, restrooms and covered in great shade trees and grassy areas with picnic tables and BBQ facilities.
Colusa	Lewis Tennant Ball Field Complex Located on Colus Ave. across from Colusa High School.	This 4.0 acre park is the site of the Colusa Softball Association games and tournaments. This park includes two softball fields, restrooms, concession stand, picnic tables, and 0.33 acres of tot lot play area scaled to toddlers with a sandy surface.
Colusa	King-Vale Park Located on 3rd St.	This 0.30 acre park is a large sandy area with children's tot lot with swings, slide, and merry go round.
Colusa	Leland L. Taylor Memorial Park Located on Country Club Dr.	The park is placed on an acre of open grass area for play, in addition to picnic tables.
Williams	North View Park Location: Northern end of Virginia Way	Amenities include children and toddler play structures, a full size basketball court, a soccer field, picnic tables and benches, drinking fountains, barbeques, a large dome gazebo, a dog run, and men and women restrooms.
Williams	Redinger Park Location: 9th Street/G Street	Playground area, soccer field, picnic tables and benches, men and women's restrooms.
Williams	Venice Park Location: Venice Boulevard between E Street and Westgate Drive	Playground area, baseball field, horse shoe pits, picnic tables, large open play area, and men and women's restrooms.
Williams	Valley Vista Park	Six full size basketball courts, walking/jogging trail, and

Table 3.12-3: Inventory of County Parks by Community

Table 3.12-3: Inventory of County Parks by Community		
	Location: Husted Road	nature pond area.
Williams	Pool Location: Western end of D Street	Amenities include a 105 foot long pool, diving board, slide, and men and women's restrooms.
Williams	Museum Location: E Street/Venice Boulevard	Built in 1911 as Williams High School, the Sacramento Valley Museum offers regional exhibits that feature items from the late 19th and early 20th century.
Williams	Valley Ranch Playground Location: White Oaks Drive/Sierra Oaks Drive	A neighborhood park located in the Valley Ranch Subdivision, the City is currently in the process of installing playground equipment in this park.
Maxwell	Maxwell Rodeo Grounds	Rodeo Grounds
Maxwell	Maxwell School District	Sports fields, playgrounds, and hard courts.
Arbuckle	Arbuckle Little League Park (Ball Four Park) Corner 10th & Garrett Street	Sports fields
Arbuckle	LaVanche Hursh Park Downtown Arbuckle	Picnic areas, a covered pergola for events in the park, and central location for community events.
Arbuckle	Veterans Memorial Park Hall St and SR 99	Picnic areas, veteran's memorial.
Arbuckle	Wee Park Old hwy 99 and Hillgate Road	Tot playground, community beautification.
Stonyford	Stonyford Rodeo Grounds	Rodeo Grounds
Stonyford	Stonyford Park	Sports fields, picnic areas
Stonyford/Lodoga	East Park Reservoir	Camping/recreational area

LIBRARIES AND OTHER COMMUNITY FACILITIES

Existing Facilities

LIBRARIES

The Colusa County Library has one main library and six branch libraries. The library owns 91,500 books, magazines, and movies. The Local History Collection contains over 2,500 items relating to the history of the region and genealogy of inhabitants. The main County Library is located in the City of Colusa. The location of the main library and the six branch libraries is shown in Table 3.12-4 below.

Table 3.12-4: County Library Facilities

Library	Location
Colusa County Library	738 Market Street, Colusa
Arbuckle Branch Library	610 King Street, Arbuckle
Grimes Branch Library	240 Main Street, Grimes
Maxwell Branch Library	34 Oak Street
Princeton Branch Library	232 Prince Street, Princeton
Stonyford Branch Library	5080 Stonyford-Lodoga Road, Stonyford
Williams Branch Library	901 E Street, Williams

SOURCE: COLUSA COUNTY LIBRARY, 2009.

MUSEUMS

The Sacramento Valley Museum is located at 1491 E Street in Williams. The museum includes 27 rooms that depict life in the Sacramento Valley between the mid-1800’s and 1930’s.

HEALTH CARE

The Colusa Regional Medical Center (CRMC) is the only acute care hospital in Colusa County. Patients requiring more comprehensive care generally go to Rideout Memorial Hospital in Marysville, Enloe Medical Center in Chico, Woodland Memorial Hospital in Woodland, or larger facilities in Sacramento. Colusa Regional Medical Center operates a county-wide health system consisting of a 48-bed acute care hospital and skilled nursing facility, a Home Health Agency, and rural health clinics located in the communities of Arbuckle, Colusa, Stonyford and Williams.

CRMC offers a wide range of services including childbirth services, adult medical and surgical care, emergency medicine, long-term skilled nursing care, laboratory services, imaging and radiographic services, physical rehabilitation, home health and palliative care, outpatient clinic services, and other specialized programs.

Since becoming a community owned and governed hospital on September 1, 2001, several million dollars have been invested in improvements in CRMC’s physical plant, program expansion, and acquisition of diagnostic and therapeutic equipment and technology. Over 14,000 square-feet of medical office space was constructed and brought on-line in 2006. An Urgent Care and Medical Center was opened in 2006 in the city of Williams. Two rural health clinics were opened in 2007 to serve the growing needs of the communities of Arbuckle and Stonyford. In 2008, the CRMC Rehabilitation Center was opened on the hospital campus offering the latest in Physical, Occupational and Speech therapies. The summer of 2008 saw the remodeling of the CRMC Birthing Center and Maternity Department.

The Arbuckle Family Health Center, operated by Del Norte Clinics, Inc., provides primary medical and dental care services. The Arbuckle Family Health Center serves a diverse population and offers programs specifically for low income persons and farmworkers.

3.12.2 REGULATORY SETTING

FEDERAL

Mendocino National Forest

The Mendocino National Forest Land and Resource Management Plan (LRMP) provides the framework to guide the ongoing land and resource management operations of the Mendocino National Forest. The LRMP's goal is to provide a management program reflecting a mix of activities for the use and protection of the Forest. The LRMP:

- Establishes the management direction and associated long-range goals and objectives for the Forest,
- Specifies the standards, approximate timing, and vicinity of the practices necessary to implement that direction, and
- Establishes the monitoring and evaluation requirements needed to ensure that the direction is being carried out, and to determine if outputs and effects have been reasonably estimated.

The LRMP is a strategic document that provides guidance for but does not make project level decisions. Those decisions are made after more detailed, site-specific environmental analysis and further public comment. The National Forest Management Act (NFMA) requires that resource plans and permits, contracts, and other instruments issued for the use and occupancy of National Forest System lands be consistent with the forest plan. The following are some examples of project decisions that require more detailed environmental analysis:

- Timber harvesting and related activities, such as slash disposal and road construction,
- Range allotment management plans,
- Fish or wildlife habitat improvement projects,
- Watershed improvement projects, and
- Developed recreation sites or trail construction.

The LRMP focuses primarily on management prescriptions for habitat, wilderness, and recreation uses. The LRMP anticipates a steady workforce and does not foresee the need for extensive construction of new facilities for administrative activities and to house the workforce, but rather anticipates that existing facilities will need to be maintained and improved.

The LRMP does not provide much direction regarding private development within the Mendocino National Forest. However, the U.S. Forest Service provides for special use permits for private activities. Special use permits may be requested from the U.S. Forest Service for a variety of land uses in national forests, including water transmission, agriculture, timber production, outfitting

and guiding, recreation, telecommunication, research, photography and video productions, and granting road and utility rights-of-ways.

Recreation residences are also a federally permitted use in national forests. In 1968, a moratorium was placed on establishing additional residential tracts within forests and the moratorium was expanded in 1976 to also prohibit development of new lots within existing tracts. Existing recreation residences within a national forest are required to obtain a special use permit, which has a maximum term of 20 years. However, there is no guarantee that a new special use permit will be issued at the end of the permit term.

National Wildlife Refuges

Management of each National Wildlife Refuge is guided by the purpose of the individual refuge and the mission and goals of the Refuge System that includes the individual refuge, as well as U.S. Fish and Wildlife Service policy, laws, and international treaties. The National Wildlife Refuge System Administration Act of 1966, as amended by the Improvement Act, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations provide the federal laws for establishment and management of the refuges.

The Colusa, Delevan, and Sacramento National Wildlife Refuges are all part of the Sacramento National Wildlife Refuge Complex and are all guided by a single Comprehensive Conservation Plan (CCP). The Sacramento, Delevan, Sutter, and Colusa National Wildlife Refuges Final CCP guide the management of the Sacramento, Delevan, Colusa, and Sutter National Wildlife Refuges. The U.S. Fish and Wildlife Service manages the refuges as part of the Sacramento National Wildlife Refuge Complex.

STATE

California Department of Education

The California Department of Education (CDE) School Facilities Planning Division (SFPD) prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the School Site Analysis and Development Guide. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses;
- Traffic and school bus safety issues.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all fire fighting and emergency medical equipment.

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

The County of Colusa is responsible for emergency response and evacuation plans within the unincorporated areas of the county. The Colusa County Sheriff's Department operates the County Office of Emergency Services.

Fire Protection

The Uniform Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire

hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises. The Bureau of Fire Prevention in the Fire Authority enforces the Uniform Fire Code.

The Kindergarten-University Public Education Facilities Bond Act of 2002 (Prop 47)

This act was approved by California voters in November 2002 and provides for a bond issue of \$13.05 billion to fund necessary education facilities to relieve overcrowding and to repair older schools. Funds will be targeted at areas of greatest need and must be spent according to strict accountability measures. Funds will also be used to upgrade and build new classrooms in the California Community Colleges, the California State University, and the University of California in order to provide adequate higher education facilities to accommodate growing student enrollment.

Leroy F. Greene School Facilities Act of 1998 (SB 50)

The “Leroy F. Greene School Facilities Act of 1998,” also known as Senate Bill No. 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district’s authority to levy school impact fees. This comprehensive legislation, together with the \$9.2 billion education bond act approved by the voters in November 1998 known as “Proposition 1A”, reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- Level I fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.
- Level II fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30 percent of the district’s bonding capacity (percentage is based on revenue sources for repayment), having at least 20 percent of the district’s teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50 percent plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.
- Level III fees are outlined in Government Code Section 655995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect

Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

Quimby Act

The Quimby Act (California Government Code Section 66477) states that “the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map.” Requirements of the Quimby Act apply only to the acquisition of new parkland and do not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act seeks to preserve open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development. The County has not adopted park fees as allowed by the Quimby Act.

LOCAL

County Emergency Response/Evacuation Plans

The County of Colusa is responsible for emergency response and evacuation plans within the unincorporated areas of the county. The Colusa County Sheriff’s Department operates the County Office of Emergency Services.

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on public services if it would result in:

- Substantial adverse physical impacts associated with the provisions of new or physically altered government facilities, and/or the 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

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: Adverse Physical Impacts on the Environment Associated with Governmental Facilities and the Provision of Public Services (Less than Significant)

Development accommodated under the 2030 General Plan would result in additional residents and businesses in the County, including new residential, industrial, commercial, and agricultural uses. As described in Chapter 2.0, the 2030 General Plan is expected to accommodate approximately 1,385 new dwelling units and new businesses and services totaling approximately 610,874 square feet through 2030. .

Development and growth in the County under the 2030 General Plan would result in increased demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. The 2030 General Plan includes policies and actions to ensure that public services are provided at acceptable levels and to ensure that development and growth does not outpace the provision of public services.

As the demand for services increases, there will likely be a need to increase staffing and equipment in order to maintain acceptable service ratios, response times, and other performance standards. New or expanded service structures (e.g., offices, maintenance and administrative buildings, schools, parks, fire departments, libraries, etc.) will be needed to provide for adequate staffing, equipment, and appropriate facilities to serve growth in the unincorporated County.

Existing facilities may be expanded at their current location. New facilities may also be constructed. The Urban Residential and Public/Semi-Public Services, and Parks and Recreation land use designations would accommodate new public facilities necessary to provide community services. There would likely be environmental impacts associated with the construction or expansion of the facilities needed to provide public services.

As future development and infrastructure projects, including new governmental facilities, are considered by the County, each project will be evaluated for conformance with the County's General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The 2030 General Plan includes a range of policies and actions (listed below) to ensure that public services are provided in a timely fashion, are adequately funded, are coordinated between the County and appropriate service agency, and that new development funds its fair share of services. The 2030 General Plan includes policies to ensure that fire protection and law enforcement services keep pace with new development and that school, library, and governmental services are adequately planned and provided. The 2030 General Plan also includes an action to maintain a Capital Improvement Program to defray the cost of developing public facilities.

As previously stated, increased levels of staffing and equipment will be needed to serve growth allowed under the 2030 General Plan. The environmental effect of providing the public services is associated with the physical impacts of providing new and expanded facilities. The specific impacts of providing new and expanded facilities cannot be determined at this time, as the 2030 General Plan does not propose development nor does it designate specific sites for new or expanded public facilities. However, the facilities would be primarily provided on sites with land use designations that allow such uses and the environmental impacts of constructing and operating the governmental facilities would likely be similar to those associated with new development, redevelopment, and infrastructure projects under the 2030 General Plan. These impacts are described in the relevant chapters (Chapters 3.1 through 3.14, and 4.0) of this Draft EIR.

This Draft EIR addresses the potential impacts of development that may occur under the 2030 General Plan, including residential, commercial, public facilities, and a range of other uses that are accommodated by the project. Where potentially significant or significant impacts are identified, this EIR identifies mitigation measures to reduce the impact and discloses which impacts cannot be reduced to a less than significant impact. There are no additional environmental impacts, apart from those disclosed in the relevant chapters of this EIR, that are anticipated to occur. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy PSF 3-1: Support the continued use of mutual aid agreements between Rural Fire Protection Districts, City Fire Departments, the California Department of Forestry (CalFire), and the U.S. Forest Service and other emergency medical service providers.

Policy PSF 3-2: Support the expansion of volunteer fire services, particularly in remote areas of western Colusa County.

Policy PSF 3-3: Continue to coordinate fire protection services with the planning and development review process.

Policy PSF 3-4: Promote more effective and efficient use of existing emergency and medical response services by emphasizing an integrated countywide response system.

3.12 PUBLIC SERVICES AND RECREATION

Policy PSF 3-5: Support fire protection district efforts to achieve, maintain, and improve an overall fire insurance (ISO) rating of Rural 7 throughout the unincorporated communities.

Policy PSF 3-6: Ensure that the construction of fire facilities, staffing, and delivery of services keeps pace with new development and growth.

Policy PSF 3-7: Work with each community to upgrade its water system to provide adequate water pressure for sprinklers and fire response.

Policy PSF 3-8: Provide adequate law enforcement staffing and facilities to serve existing residents and planned communities.

Policy PSF 3-9: Support the use of volunteer law enforcement services.

Policy PSF 3-10: Support citizen efforts to strengthen and expand neighborhood watch programs.

Policy PSF 3-11: Support the use of private security firms to patrol commercial and industrial areas.

Policy PSF 3-12: Encourage the incorporation of crime prevention measures into the design of new development and retrofit of existing development. Such measures may include security lighting, fencing, maximizing visibility, access control, and other appropriate measures.

Policy PSF 3-13: Coordinate with the California Highway Patrol to assist with traffic enforcement services on County roadways.

Policy PSF 3-14: Support programs that target youth violence and substance abuse.

Policy PSF 3-15: Ensure that the construction of law enforcement facilities, staffing, and delivery of services keeps pace with new development and growth.

Policy PSF 4-1: Encourage the use of development agreements to pay for new school facilities and expansions to meet the demand generated by new development.

Policy PSF 4-2: Include school districts in the development review process for new residential development projects to identify potential impacts to school services and facilities.

Policy PSF 4-3: Provide information to school districts regarding population growth projections and planned development patterns to assist in planning efforts for school facilities.

Policy PSF 4-4: Identify appropriate locations for school sites within unincorporated communities, in consultation with the local school district. Future schools should be located on sites that are easily accessible to cars, bicycles, and pedestrians, and should be located within the residential areas that they serve.

Policy PSF 4-5: Promote the sharing of resources between small town schools so that programs which are infeasible at a local school due to low enrollment may be made available to County students at schools or facilities in a nearby community.

Policy PSF 4-6-: Encourage the location of community colleges and technical/vocational training academies in the County.

Policy PSF 4-7: Support efforts to provide continuing adult education programs.

Policy PSF 4-8: Support programs and public improvements that allow children to safely walk or bicycle to school.

Policy PSF 4-9: Locate new libraries in easily accessible downtown areas close to community services to keep the community center as the main focal point for activity and culture.

Policy PSF 4-10: Invest in new equipment and facilities for libraries based on both current and projected needs.

Policy PSF 4-11: Encourage private donations and support State funding for library operations, maintenance, renovation, equipment and resource acquisition, as well as new construction.

Policy PSF 4-12: Promote the library's role as a central community gathering place.

Policy PSF 5-1: Design, construct, and operate new County facilities to be environmentally sustainable and beneficial to the community.

Policy PSF 5-2: Select government facilities should be located in satellite service centers when community populations reach appropriate thresholds for government services to be provided within the community.

Policy PSF 5-3: Encourage the development of governmental and civic facilities that can accommodate multiple uses.

Policy PSF 5-4: Ensure that fees and assessments used to fund public facilities and services are paid for by those who derive benefit, and are reviewed and updated on a regular basis to reflect the true cost of providing services.

Policy PSF 5-5: Locate new civic facilities, such as government administrative facilities, close to community services in downtown areas or community centers in order to continue supporting the community center as the main focal point for activity and culture.

Policy PSF 5-6: Encourage consolidation of special districts and responsibilities to increase efficient public service and avoid redundancy.

Action

Action PSF 3-A: Incorporate fire safety measures into the design, construction and improvement of County roadways, such as emergency vehicle turnouts and staging areas.

Action PSF 3-B: Amend the County Code to provide fire safe measures in new development, particularly in high fire hazard areas, including the use of fire safe building materials, fire resistant landscaping, water storage tanks, clear spaces and fire breaks, and supplemental fire suppression equipment.

3.12 PUBLIC SERVICES AND RECREATION

Action PSF 3-C: Amend the County Code to require incorporation of fire-resistant standards for reconstruction and/or substantial addition projects in high fire hazard areas.

Action PSF 3-D: Continue to implement and regularly update countywide emergency operation plans to reduce or eliminate long-term risk to life and property from natural or human-made emergencies and disasters.

Action PSF 3-E: Plan for the continued function of essential facilities following a major disaster to facilitate post-disaster response.

Action PSF 3-F: Amend the County Code to develop standards for crime prevention and surveillance measures and programs into the design of new development and retrofit into existing development. Such measures may include security lighting, fencing, site planning to provide improved surveillance/visibility and access control.

Action PSF 3-G: Engage law enforcement officials during the review of land use and development projects.

Action PSF 4-A: As part of the development review process, consult with school districts in the County to ensure that adequate school sites are provided and that affected schools will have adequate capacity to serve new development.

Action PSF 4-B: Work with school and recreation districts to identify and accommodate joint use school and park facilities

Action PSF 4-C: Collaborate with school districts in the planning and development of sidewalks and trails for safe walking and bicycling to schools.

Action PSF 4-D: Identify partnership opportunities between municipalities, other agencies and library support organizations to expand library facilities, resources and services.

Action PSF 4-E: Pursue joint-use agreements with schools, social service agencies, cultural institutions, and other community organizations to extend library and other public services to populations that may otherwise not be served.

Action PSF 4-F: Design libraries to include space for meeting rooms and other uses that support the use of the library as a community gathering place.

Action PSF 5-A: Maintain and update a Capital Improvement Program with a countywide development impact fee system to defray the cost of developing public facilities.

Impact 3.12-2: Adverse Physical Impacts Associated with the Deterioration of Existing Parks and Recreation Facilities (Less than Significant)

Growth accommodated under the 2030 General Plan would include a range of uses that would increase the population of the County and also attract additional workers and tourists to the County. This growth would likely also result in increased demand for parks and recreation facilities.

It is anticipated that over the life of the 2030 General Plan, use of regional parks and recreation facilities may increase, due to new residents as well as tourists visiting the County. Use of neighborhood parks may also increase, but the level of increase would be less since new residential subdivisions and residential projects would be required to provide adequate parks and open space and/or in-lieu fees to ensure that adequate parks and recreation facilities are provided to serve the development. The additional demand on existing parks and recreational facilities, particularly regional facilities, would increase the need for maintenance and improvements. These improvements could have environmental impacts, although the exact impacts cannot be determined since the potential improvements are unknown.

The provision of new parks and recreation facilities (see Impact 3.12-3) would reduce the potential for adverse impacts and physical deterioration of existing parks and recreation facilities, by providing additional facilities to accommodate the demand for parks and recreation facilities. These new facilities would be provided at a pace and in locations appropriate to serve new development.

In addition to ensuring that new and expanded parks and recreation facilities are provided to accommodate new growth, the 2030 General Plan includes policies and actions to ensure that parks and recreation facilities are adequately maintained and identifies improvements to existing facilities to serve both existing and planned growth. Improvements at existing parks and recreation facilities would include regular maintenance and a range of improvements, such as new signage, new boat ramps, new and/or expanded trails systems, new and/or expanded restrooms, picnic facilities, play structures, to ensure that new facilities are provided to serve new growth. These improvements to existing facilities would likely have environmental impacts similar to those associated with new development under the 2030 General Plan. This Draft EIR addresses the potential impacts of new development and identifies mitigation measures where appropriate.

As future development and infrastructure projects, including improvements to existing parks and recreation facilities, are considered by the County, each project will be evaluated for conformance with the County's General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The 2030 General Plan establishes the policies and actions (listed below) that would ensure that existing parks and recreation districts are improved and maintained, by providing for a range of improvements appropriate to serve growth and ensure on-going improvement and maintenance of existing facilities. Policy OSR 3-1 pursues partnerships to provide services and maintain park facilities and Policy OSR 3-3 ensures that parks and recreational facilities have adequate funding sources. Action OSR 2-A would provide for a comprehensive recreation and open space plan, which would address providing adequate recreation and trails opportunities and also funding the acquisition and maintenance of recreation areas. While growth under the 2030 General Plan would result in use and deterioration of parks and recreation facilities, improvements to and

regular maintenance of existing facilities is not anticipated to result in blight or substantial adverse impacts.

This Draft EIR addresses the potential impacts of development that may occur under the 2030 General Plan, including residential, commercial, public facilities, recreation facilities, and a range of other uses that are accommodated by the 2030 General Plan. Where potentially significant or significant impacts are identified, this Draft EIR identifies mitigation measures to reduce the impact and discloses which impacts cannot be reduced to a less than significant impact. There are no additional significant adverse environmental impacts, apart from those disclosed in the relevant chapters of this Draft EIR, that are anticipated to occur associated with existing parks and recreation facilities. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy OSR 2-1: Develop “gateways” or trailheads that provide access for the public to recreation areas, including County, State and Federal lands. Where located on private land, gateways shall be developed by working with willing landowners.

Policy OSR 2-2: Require a clear, coordinated system of signage for any new equestrian, hiking, or bicycling trail or modification of an existing trail, with priority given to well-used or linked trail systems.

Policy OSR 2-3: Encourage the expansion of public access and recreation facilities along the Sacramento River, East Park Reservoir, and the Mendocino National Forest.

Policy OSR 2-4: Support efforts of citizens and non-profit groups to establish trails or to improve access and recreational amenities within public and private open space areas.

Policy OSR 2-6: Prohibit the use of off-road vehicles on bicycling, hiking and horseback riding trails.

Policy OSR 2-7: Require the development of open space corridors, bicycle paths and trails providing access and connectivity to waterways, scenic areas, parks, and other outdoor recreation areas in collaboration with affected landowners as a part of project approval. The intent is to provide trails and corridors that connect each community and city to special places and recreation opportunities, throughout the County.

Policy OSR 2-12: Enhance parking and public facilities at the Sacramento River, East Park Reservoir, Mendocino National Forest, and other open space and waterway recreation areas. Encourage the use of alternative transportation by providing bike racks and other appropriate facilities.

Policy OSR 2-13: Encourage recreational uses that emphasize use of the waterways in locations directly on the Sacramento River, East Park Reservoir, and the proposed Sites Reservoir. Examples include fishing, canoeing, boating, and nature observation. With the exception of boat launches

and docks, more active uses, such as parking, restrooms, and picnic areas, shall be located in areas away from the river and sensitive riparian habitat.

Policy OSR 2-14: Encourage recreational uses that emphasize a range of outdoor activities, such as hiking, drive-in camping, hike-in camping, picnics, off-highway vehicle use, and nature observation, at the Mendocino National Forest, East Park Reservoir, proposed Sites Reservoir, Sacramento River, and other outdoor recreation areas.

Policy OSR 3-1: Pursue partnerships with the private sector and non-governmental organizations to provide services and/or maintain all or components of park facilities, wherever practical.

Policy OSR 3-2: Encourage the joint-use of parks and recreation facilities owned and operated by school districts.

Policy OSR 3-3: Ensure that community parks and recreational facilities have stable and self-sufficient funding resources, paid by those who derive benefit from these facilities.

Actions

Action OSR 2-A: Develop a countywide outdoor recreation plan to link various outdoor recreation areas, including waterways, lakes, reservoirs, parks, wildlife refuges, and the Mendocino National Forest, to communities as well as to specific access points proximate to major roadways. The plan should address the following:

- Existing and potential recreation areas;*
- Existing and potential routes for walking, hiking, horseback riding, and mountain biking opportunities and specify access points to each outdoor recreational area;*
- Trail linkages between established communities, such as Arbuckle, Maxwell, Grimes, Princeton, College City and the cities of Colusa and Williams;*
- Connections to the various recreation areas where feasible;*
- Unified Countywide signage to identify recreation areas and equestrian, hiking, or bicycling trails.*

The outdoor recreation plan will serve as a plan for securing lands for a countywide recreation and trail system and funding the acquisition and maintenance of recreation areas and trails. This plan shall be developed in conjunction with the Bicycle and Pedestrian Master Plan (Policy CIRC 1-I).

Action OSR 2-B: Coordinate with park districts, other special districts, parks and recreation interests and related Federal and State agencies for the implementation of a unified directory sign program for equestrian, hiking, or bicycling trails.

Action OSR 2-E: Consider formation of a self-supporting parks and recreation system by employing user fees (where appropriate), concessionaire revenues, soliciting grants and private contributions, requesting volunteer help, and by other means that further cost-effective park operations.

Impact 3.12-3: Adverse Physical Impacts on the Environment Associated with Construction of New Parks and Recreation Facilities (Less than Significant)

Development under the 2030 General Plan would include new parks and recreation facilities to serve new growth and to meet existing parks and recreation needs. The 2030 General Plan supports the creation of new parks and recreation facilities, including new trails, campgrounds, an off-highway vehicle area, and outdoor hunting and recreation areas. These new parks and recreation facilities would be spread throughout areas proximate to new development in and around existing communities and may also include new regional parks located away from existing communities. Neighborhood and community parks can be accommodated in the Parks and Recreation and Urban Residential designations. The 2030 General Plan supports a broad range of parks and recreation activities, encouraging regional parks and recreation uses in most designations including Parks and Recreation, Commercial, Mixed Use, Forest Lands, Designated Floodway, Resource Conservation, Rural Service Center, and all agricultural designations.

At a ratio of five acres of parkland per 1,000 residents, development during the planning horizon of the 2030 General Plan would result in the need for approximately 200 acres of new parks and recreation facilities. However, more facilities may be provided to serve existing and visitor-based needs, in addition to the needs of new development.

As future parks and recreation projects are considered by the County, each project will be evaluated for conformance with the 2030 General Plan, Zoning Ordinance, and other applicable regulations. Parks and recreation projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The 2030 General Plan establishes policies and actions (listed below) that would ensure that parks and recreational facilities and opportunities are provided to serve new growth, the County's existing population, and tourists. The environmental impacts associated with constructing and operation new parks and recreation facilities would be consistent with impacts associated developments allowed under the 2030 General Plan, such as impacts associated with construction activities including air quality, drainage, and noise, and impacts associated with operation including traffic, noise, air quality, hazards, and land stability. These impacts as described in the relevant chapters (Chapters 3.1 through 3.14 and 4.0) of this Draft EIR.

This Draft EIR addresses the potential impacts of development that may occur under the 2030 General Plan, including residential, commercial, public facilities, recreation facilities, and a range of other uses that are accommodated by the 2030 General Plan. Where potentially significant or significant impacts are identified, this Draft EIR identifies mitigation measures to reduce the impact and discloses which impacts cannot be reduced to a less than significant impact. There are no additional significant adverse environmental impacts, apart from those disclosed in the relevant chapters of this Draft EIR, that are anticipated to occur associated with the development and

operation of new parks and recreation facilities. Therefore, this impact is considered **less than significant** and no mitigation is necessary.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy OSR 2-3: Encourage the expansion of public access and recreation facilities along the Sacramento River, East Park Reservoir, and the Mendocino National Forest.

Policy OSR 2-4: Support efforts of citizens and non-profit groups to establish trails or to improve access and recreational amenities within public and private open space areas.

Policy OSR 2-5: Public access to the water and shoreline areas of lakes, reservoirs, rivers and streams, should be provided where appropriate.

Policy OSR 2-13: Encourage recreational uses that emphasize use of the waterways in locations directly on the Sacramento River, East Park Reservoir, and the proposed Sites Reservoir. Examples include fishing, canoeing, boating, and nature observation. With the exception of boat launches and docks, more active uses, such as parking, restrooms, and picnic areas, shall be located in areas away from the river and sensitive riparian habitat.

Policy OSR 2-14: Encourage recreational uses that emphasize a range of outdoor activities, such as hiking, drive-in camping, hike-in camping, picnics, off-highway vehicle use, and nature observation, at the Mendocino National Forest, East Park Reservoir, proposed Sites Reservoir, Sacramento River, and other outdoor recreation areas.

Policy OSR 2-16: Support the location and creation of Sites Reservoir in Colusa County. (See Policies LU 4-1 through 4-5.)

Policy OSR 2-15: Require future water development projects, including reservoirs, marinas, and water-front developments, to include provisions for public access to the water and shoreline areas.

Policy OSR 2-16: Require future forest recreation projects to include provisions for public access and a range of amenities, including off-highway vehicles, hiking trails, drive-in campgrounds, and hike-in campgrounds, to serve a variety of visitors.

Actions

Action OSR 2-A: Develop a countywide outdoor recreation plan to link various outdoor recreation areas, including waterways, lakes, reservoirs, parks, wildlife refuges, and the Mendocino National Forest, to communities as well as to specific access points proximate to major roadways. The plan should address the following:

- *Existing and potential recreation areas;*
- *Existing and potential routes for walking, hiking, horseback riding, and mountain biking opportunities and specify access points to each outdoor recreational area;*

3.12 PUBLIC SERVICES AND RECREATION

- *Trail linkages between established communities, such as Arbuckle, Maxwell, Grimes, Princeton, College City and the cities of Colusa and Williams;*
- *Connections to the various recreation areas where feasible;*
- *Unified Countywide signage to identify recreation areas and equestrian, hiking, or bicycling trails.*

The outdoor recreation plan will serve as a plan for securing lands for a countywide recreation and trail system and funding the acquisition and maintenance of recreation areas and trails. This plan shall be developed in conjunction with the Bicycle and Pedestrian Master Plan (Policy CIRC 1-I).

Action OSR 2-D: Amend the Zoning Ordinance to create a new zoning district for Resort Commercial uses. This designation shall allow for a mix of commercial uses oriented towards tourists and other visitors to the County, including but not limited to, agriculturally based tourism, sports fishing, hunting, and other related uses. Allowable uses may include, but are not limited to, marinas, hotels, RV camping, entertainment services, restaurants, and other visitor serving uses. The district would provide flexible use and development standards including a set of performance standards that:

- *Allows, as a priority, the development of boating facilities, such as docks and boat launching ramps along the Sacramento River and other water way recreation areas.*
- *Achieves commercial development which is sensitive to the scale and character of the surroundings;*
- *Ensures that commercial development places the most minimal possible economic and natural resource demands on the area and on public services;*
- *Controls sprawl and strip commercial development, and provides for the effective control of commercial signs;*
- *Avoids significant residential development, including mobile home or RV parks with full time residents; and*
- *Encourages the continuation of surrounding farming and ranching uses to minimize the disruption of agriculture by new development.*

Action OSR 2-E: Consider formation of a self-supporting parks and recreation system by employing user fees (where appropriate), concessionaire revenues, soliciting grants and private contributions, requesting volunteer help, and by other means that further cost-effective park operations.

Action OSR 2-F: Assist Off Highway Vehicle (OHV) interests in identifying location(s) for future OHV areas and facilitate development of these facilities.

This chapter describes the potential impacts to the transportation system associated with adoption of the Colusa County General Plan. The impact analysis examines the roadway, transit, bicycle, pedestrian, rail, and aviation components of the overall transportation system. To provide a context for the impact analysis, this chapter begins with a description of the environmental setting. The setting describes the existing physical and operational conditions for the transportation system. Following the setting is the regulatory framework influencing the transportation system and providing the basis for impact significance thresholds used in the impact analysis. Next, a summary of proposed General Plan policies that affect the transportation system are described. The chapter concludes with the impact analysis findings and recommended mitigation measures.

3.13.1 TRANSPORTATION SETTING

The existing physical and operational conditions for the Colusa County transportation system are described below. This description is organized by transportation system component, beginning with the regional roadway system followed by public transportation, non-motorized transportation, aviation, and goods movement.

This report is based on review of local and regional transportation plans and on physical review of the existing transportation system. Existing roadway traffic was determined using traffic counts already performed by the County and the California Department of Transportation (Caltrans).

EXISTING ROADWAY NETWORK

Colusa County's preservation of agricultural land and concentration of growth within incorporated cities has created a unique transportation system. Most travel in the County is by automobile.

The roadway network within the unincorporated parts of the County is rural in character, mainly serving small communities and agriculture uses. Interstate 5 and State Routes 20 and 45 are the primary transportation corridors extending through the County and serve all of the County's major population centers, including Colusa, Williams, Arbuckle, Maxwell, and Princeton. Other County arterials and a network of local public and private roads constitute the remainder of the roadway system.

Figure 3.13-1 shows the major routes in the regional roadway system according to operational classification. These classifications indicate the operational hierarchy of the roadway system.

Regional Roads

The state highway network serves primarily intercity and intercounty regional travel, while the County's roadways serve local trips. Notable exceptions are Lone Star Road and Maxwell Road, which serve some intercounty trips and have traffic volumes as high as some of the state highways.

STATE HIGHWAYS

State highways in Colusa County are listed below and include freeways and conventional highways, which are operated and maintained by Caltrans.

3.13 TRANSPORTATION AND CIRCULATION

- State Route (SR) 16
- SR 20
- SR 45

Interstate routes are also part of the state highway system that is maintained by Caltrans. The unincorporated portion of Colusa County has one Interstate route, I-5.

I-5: I-5 is an important north/south route that in Colusa County primarily provides for the transportation of goods by trucks. The agricultural industry in Colusa County generates high truck traffic along I-5 during the harvest seasons. Existing daily travel on I-5 in Colusa County ranges from approximately 30,000 to 40,000 vehicles per day for average and peak conditions, respectively. From the Yolo County line to the Glenn County line, I-5 is a four-lane freeway and provides connections to the communities of Arbuckle, Williams, and Maxwell.

SR 16: SR 16 extends south as a two-lane conventional highway from SR 20 in Colusa County to Yolo County about three miles east of the Lake County line. SR 16 provides a connection to the Cache Creek Resort Casino located near the town of Brooks, passes through the Cache Creek Regional Park area and is one of the routes used by trucks to access Yolo County. SR 16 is an eligible State Scenic Highway but is not officially designated. Existing daily traffic ranges from about 700 to 900 vehicles per day.

SR 20: SR 20 is a two-lane rural highway with 12-foot lanes and paved shoulders that vary from two to six feet depending on location. SR 20 enters Colusa County at the Sutter County border near the town of Meridian, where daily traffic ranges from 8,000 to 10,000 trips. SR 20 is busiest through the City of Colusa, where volumes range from 20,000 to 26,000 vehicles per day. SR 20 exits the County at the Lake County border, approximately 3.5 miles west of the intersection of SR 16 and SR 20, where daily travel is approximately 7,000 vehicles per day.

SR 45: SR 45 is a two-lane rural highway with 12-foot lanes and paved shoulders that vary from two to six feet depending on location. It extends from the Yolo County border, with daily volumes of about 2,300 vehicles, to Highway 20 east of the City of Colusa, where the facility merges with Highway 20. SR 45 then re-emerges northwest of the City of Colusa, to Princeton and further north to Glenn County, where traffic volumes are roughly 2,300 vehicles per day.

COUNTY ROADS

The County maintains approximately 716 miles of roadways – an extensive system that provides a high level of access compared to the relatively low levels of traffic on most roadways.

Numerous County roadways provide intermediate and localized access to rural areas of the County, as well as the more populated cities of Colusa and Williams and the communities of Arbuckle, Maxwell, and others. Many County roads are two-lane roadways with substandard cross sections, limited shoulder widths, and poor pavement conditions.

Major County roads are also part of the regional roadway system and typically provide the connections to the highway and freeway system. Roads such as Walnut Drive, Maxwell Road, and Lone Star Road are

key County roadways carrying more than 2,000 daily trips. These three roadways are heavily used by motorists traveling between Colusa, I-5, and SR 20.

EXISTING PUBLIC TRANSPORTATION

Public transportation within Colusa County is provided by Colusa County Transit Agency (CCTA) through a general public paratransit service. The bus service currently operates Monday through Friday, between the hours of 7:00 AM and 5:00 PM, with the exception of County holidays. The bus service operates on a Dial-A-Ride basis and includes five routes – three that operate five days a week and two that operate only on select days. CCTA has 10 full time staff, including six drivers, one mechanic, and three administrative staff. The CCTA has 11 vehicles with 19-passenger capacity, and each can accommodate two wheelchair positions.

The CCTA completed a recent planning study to identify transit needs for routes, facilities, personnel, and equipment.

The CCTA currently provides medical escort services for residents who need transportation to medical services outside of Colusa County. Transportation is provided to Yuba City, Chico, Woodland, Sacramento, and Roseville, where needed services such as dialysis are available.

Table 3.13-1 shows transit operational information for Fiscal Year (FY) 2005/06 through FY 2007/08.

TABLE 3.13-1: COLUSA COUNTY TRANSIT AUTHORITY OPERATING DATA SUMMARY

FISCAL YEAR	RIDERSHIP	VEHICLE HOURS	VEHICLE MILES	PASSENGERS PER HOUR	PASSENGERS PER MILE
05/06	52,535	8,150	159,799	6.4	.33
06/07	51,998	8,625	159,238	6.0	.33
07/08	54,588	9,501	168,996	5.7	.32

SOURCE: COLUSA COUNTY TRANSIT AUTHORITY

Since FY 05/06, ridership has increased approximately 4 percent. During this same three year period, vehicle hours increased approximately 16 percent and vehicles miles 6 percent. The number of passengers per vehicle hour has declined slightly since FY 05/06.

Figure 3.13-2 shows the CCTA routes and Dial-A-Ride service coverage.

PEDESTRIAN AND BICYCLE SYSTEM

Pedestrian facilities include sidewalks, crosswalk, and pedestrian signals, and are generally located in the developed communities. Except for the Central Valley Bike Trail paralleling I-5, the County has no formal bicycle facilities that provide regional interconnection. However, the cities of Colusa and Williams and the communities of Arbuckle and Maxwell have some bicycle lanes striped on several facilities that provide primarily local access but there is not a countywide bicycle network.

3.13 TRANSPORTATION AND CIRCULATION

AVIATION SYSTEM

Colusa County has one public general aviation airport, one special-use airport, one heliport, and numerous landing strips used primarily for crop dusters. The Colusa County Airport, the public general aviation airport, has one 60' x 3000' asphalt-concrete and concrete surfaced runway, 22 T-hangars and three conventional hangars. Two of the conventional hangars are leased for aerial agricultural chemical applicator and the remainder is used by the Fixed Based Operator (FBO) for aircraft repair. Medium-intensity runway lights are provided from dusk to dawn. A special-use airport is privately owned by Williams Gliderport, providing flight-training, general aviation, and rides in glider aircraft. The heliport is located at the Colusa County Hospital and is used for medical-related aerial transportation needs.

Operations in the past five years have been relatively stable. The Colusa County airport estimates that it operates 28,000 landings or departures per year. Residents generally travel by vehicle to Sacramento or the Bay Area for long-distance air travel. The Colusa County Airport does not offer commercial air charter service. Limousine service is available to the Sacramento and Bay Area airports.

While many flight operations out of the Colusa County airport are agricultural-related (given the County's high production of rice), flights also include business, recreational, hunters, emergency, and law enforcement. Currently, 36 aircraft are based at the Colusa County airport.

Regularly scheduled major airline service is available from the Sacramento International Airport, 30 miles south of the County line, along I-5. The Sacramento Airport handled 10.6 million passengers and 172 million pounds of airfreight in 2008. The Colusa County Airport, with a 3,000 ft. paved runway has 24-hour fuel service, flights, Unicom, and published instrument approach.

GOODS MOVEMENT

Existing trends in truck traffic are expected to continue. Agricultural products will continue to move primarily by truck, and truck traffic will grow modestly. However, truck travel continues to be the primary source of roadway degradation for local facilities. In addition, truck travel mixed with agricultural uses results in roadway conditions that are substantively different during harvest seasons (late summer/fall) than in non-agricultural counties. Thus, truck traffic will continue to drive the need for roadway restoration and maintenance.

Table 3.13-2 summarizes 2009 truck volumes on state facilities in Colusa County. The highest volumes occur on I-5 and SR 20 in the Williams area and on SR 45 near Grimes-Arbuckle Road.

ROUTE	LOCATION	TRUCK PERCENTAGE OF TOTAL TRAFFIC
I-5	SR 20	29.1
SR 16	SR 20	14.2
SR 20	SR 16	10.6
	I-5	19.0
	SR 45	8.0
SR 45	SR 20	12.1
	Lurline Avenue	5.8

SOURCE: 2009 ANNUAL DAILY TRUCK TRAFFIC ON THE CALIFORNIA STATE HIGHWAY SYSTEM, DECEMBER 2010

RECREATIONAL TRAVEL

Northwestern Colusa County is one of the gateways to the Mendocino OHV (Off-Highway Vehicle) Corridor. This corridor connects the Fouts Springs/Davis Flat OHV Staging Area, located in Colusa County, and the Middle Creek OHV Staging Area in Lake County, and contains 200 miles of what is considered some of the most challenging and enjoyable OHV routes in the nation. This venue has created a substantial volume of recreational trips and this trend will likely continue.

RAILROAD FACILITIES AND AT-GRADE CROSSINGS

The California Northern Railroad Company provides freight service throughout the County and operates 254 miles of track within California, linking freight customers in Northern California with the Union Pacific Railroad. The mainline tracks traverse the County adjacent to I-5. The company operates a 110-mile railroad line that runs from the City of Davis in Yolo County to the town of Tehama near Red Bluff. The connections to Union Pacific allow goods to be shipped within their network that serves 23 states in the western two-thirds of the United States. Transported commodities include lumber, wine, beer, food products, agricultural products, steel pipe, manufactured goods, and construction materials. The following roadways have at-grade crossings:

- Eddy Road
- Perkins Road
- Grimes-Arbuckle Road
- Hall Street
- Laurel Street
- Hahn Road
- Meyers Road
- Ware Road
- Husted Road
- E Street (Williams)
- North B Street (Williams)
- Freshwater Road
- Lurline Avenue
- Fairview Road
- Comet Lane
- Central Avenue
- Maxwell Colusa Road
- Lenahan Road
- Delevan Road

There are also numerous private at-grade crossings. Most of these provide access to agriculture-related business.

According to the Federal Railroad Administration Office of Safety Analysis website, there have been no reported train accidents in Colusa County on the California Northern Railroad for the period of January 2002 through May 2011.

EXISTING CONDITIONS

This section describes the operations of the transportation system within Colusa County under existing conditions. The roadway, bicycle, pedestrian, and transit systems are considered in this analysis.

Roadway System

Roadway system operations were evaluated on the following State and County facilities:

FREEWAYS AND STATE ROUTES

1. I-5 – Yolo County to Arbuckle
2. I-5 – Arbuckle to Williams
3. I-5 – Williams to Tehama County

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4. SR 20 – East of SR 45
5. SR 20 – SR 45 to Wescott Road
6. SR 20 – Wescott Road to Fremont Street
7. SR 20 – Colusa to Williams
8. SR 20 – West of Williams
9. SR 45 – South of SR 20
10. SR 45 – North of Colusa
11. SR 16 – Lake County Line

ROADWAYS

1. Wildwood Road – South of Hillgate Road
2. Hillgate Road – Wildwood Road to Cortina School Road
3. Cortina School Road – Hillgate Road to Hahn Road
4. Hahn Road – Lone Start Road to Grimes-Arbuckle Road
5. Grimes-Arbuckle Road – Hahn Road to Tule Road
6. Tule Road – Grimes-Arbuckle Road to Poundstone Road
7. City College Road – North of White Road
8. Lone Star Road – Myers Road to Abel Road
9. Abel Road – East of Lone Star Road
10. Lone Star Road – Abel Road to SR 20
11. Zumwalt Road – Myers Road to Walnut Drive
12. Walnut Drive – West of Zumwalt Drive
13. Zumwalt Road – North of Walnut Drive
14. Freshwater Road – West of I-5
15. Wilson Avenue – North of SR 20
16. Loraine Avenue – SR 45 to I-5
17. Maxwell Sites Road – East of McDermott Road
18. Maxwell Road – I-5 to 4 Mile Road

METHODS OF ANALYSIS

The operations of roadway facilities are described in terms of Level of Service (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined, from LOS A and B, which represent uncongested operating conditions, to LOS C and D, which represent moderate levels of congestion, to LOS E, which represents at-capacity conditions. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

Roadway Segments

Roadway segments were evaluated by comparing daily roadway segment traffic volumes (two-way total) to daily service thresholds based on the *Highway Capacity Manual*, 2000. Table 3.13-3 summarizes daily roadway segment capacity thresholds by operational class. The average daily traffic thresholds are initially calculated on a peak hour capacity basis and then modified to reflect daily traffic

conditions. This is accomplished using a peak period percent of traffic for that particular type of roadway.

TABLE 3.13-3: OPERATIONAL CLASS AND DAILY LEVEL OF SERVICE THRESHOLDS

OPERATIONAL CLASS	DAILY LEVEL OF SERVICE CAPACITY THRESHOLD				
	LOS A	LOS B	LOS C	LOS D	LOS E
Minor County Highway	900	2,000	6,800	14,100	17,400
Major County Highway	1,200	2,900	7,900	16,000	20,500
2-Lane, Arterial	--	--	9,700	17,600	18,700
4-Lane, Arterial, Undivided	--	--	17,500	27,400	28,900
4-Lane, Arterial, Divided	--	--	19,200	35,400	37,400
6-Lane, Arterial, Divided	--	--	27,100	53,200	56,000
8-Lane, Arterial, Divided	--	--	37,200	71,100	74,700
2-Lane, Class I Highway	1,200	3,700	7,600	13,600	21,000
2-Lane, Class II Highway	1,700	4,100	8,200	16,600	21,200
4-Lane Major Freeway	25,400	41,600	58,400	71,000	79,200

SOURCE: HIGHWAY CAPACITY MANUAL, TRANSPORTATION RESEARCH BOARD, 2000.

ROADWAY SYSTEM ANALYSIS RESULTS

Figure 3.13-3 shows the existing daily traffic volumes on the regional roadway system. These volumes were compared to the thresholds in Table 3.13-3 to produce the LOS shown in Table 3.13-4.

Most County roads operate at LOS A, B, or C, which represents stable operating conditions, at the average daily traffic (ADT) level. Roadway segments of Lone Star Road, Lurline Road, and Maxwell Road operate at LOS C, where drivers can be substantially affected by other drivers on the roadway. State Route 20 east of Colusa operates at LOS E. There are eastbound and westbound passing lanes on SR 20 east of SR 16 and between SR 45 and Sycamore Cutoff.

TABLE 3.13-4: DAILY ROADWAY TRAFFIC VOLUMES AND LEVEL OF SERVICE – EXISTING CONDITIONS

ROADWAY	SEGMENT	ROADWAY CLASSIFICATION	NUMBER OF LANES	EXISTING CONDITIONS	
				ADT	LOS
I-5	South of Arbuckle	Freeway	4	35,800	B
	Arbuckle to Williams	Freeway	4	39,400	B
	North of Williams	Freeway	4	32,800	B
SR 20	East of SR 45	Class I Highway	2	7,600	C
	SR 45 to Wescott Road	Class I Highway	2	15,000	E
	Wescott Road to Fremont Street	Class I Highway	2	20,900	E
	Colusa to Williams	Class I Highway	2	4,200	C
	West of Williams	Class II Highway	2	7,100	C
SR 45	South of SR 20	Class I Highway	2	2,200	B
	North of Colusa	Class I Highway	2	2,300	B
SR 16	Lake County Line	Class II Highway	2	800	A

3.13 TRANSPORTATION AND CIRCULATION

TABLE 3.13-4: DAILY ROADWAY TRAFFIC VOLUMES AND LEVEL OF SERVICE – EXISTING CONDITIONS

				EXISTING CONDITIONS	
Wildwood Road	South of Hillgate Road	Minor County Highway	2	1,420	B
Hillgate Road	Wildwood Road to Cortina School Road	Minor County Highway	2	978	B
Cortina School Road	Hillgate Road to Hahn Road	Minor County Highway	2	568	A
Hahn Road	Lone Start Road to Grimes-Arbuckle Road	Minor County Highway	2	947	B
Grimes-Arbuckle Road	Hahn Road to Tule Road	Minor County Highway	2	600	A
Tule Road	Grimes-Arbuckle Road to Poundstone Road	Minor County Highway	2	1,231	B
City College Road	North of White Road	Minor County Highway	2	1,178	B
Lone Star Road	Myers Road to Abel Road	Minor County Highway	2	2,041	C
Abel Road	East of Lone Star Road	Minor County Highway	2	747	A
Lone Star Road	Abel Road to SR 20	Minor County Highway	2	1,883	B
Zumwalt Road	Myers Road to Walnut Drive	Minor County Highway	2	989	B
Walnut Drive	West of Zumwalt Drive	Minor County Highway	2	1,620	B
Zumwalt Road	North of Walnut Drive	Minor County Highway	2	1,578	B
Freshwater Road	West of I-5	Minor County Highway	2	642	A
Wilson Avenue	North of SR 20	Minor County Highway	2	579	A
Lorraine Avenue	SR 45 to I-5	Minor County Highway	2	3,103	C
Maxwell Sites Road	East of McDermott Road	Minor County Highway	2	1,599	B
Maxwell Road	I-5 to 4 Mile Road	Minor County Highway	2	2,735	C

SOURCE: FEHR & PEERS, 2011.

3.13.2 REGULATORY SETTING

This section describes transportation policies, laws, and regulations that would apply to the Circulation Element of the proposed General Plan Update. This information provides a context for the impact discussion related to the proposed General Plan Update's consistency with applicable regulatory conditions.

FEDERAL AND STATE

Caltrans

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways in San Joaquin County. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the state highway system in Colusa County must be approved by Caltrans.

STATE OF CALIFORNIA TRANSPORTATION CONCEPT REPORTS

Caltrans prepares a Transportation Concept Report (TCR) for each of its facilities. The TCR is a long-term planning document that each Caltrans district prepares for every state highway or portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of a TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period. These are indicated in the "route concept." In addition to the 20-year route concept level, the TCR includes an "ultimate concept," which is the ultimate goal for the route beyond the 20-year planning horizon. The concept LOS for I-5, SR 16, SR 20, and SR 45 are outlined below.

Interstate 5

I-5 in Colusa County has a route concept level of LOS D. The 20-year concept facility remains a four-lane freeway. The ultimate facility is a six-lane freeway.

State Route 16

SR 16 in Colusa County has a route concept level of LOS D. The 20-year concept and ultimate facility remains a two-lane conventional highway.

State Route 20

Caltrans has identified the following four segments for SR 20 in Colusa County:

- Segment 1 (Lake County Line to Walnut Drive) – has a concept level of LOS D. The 20-year concept facility is a two-lane conventional highway with passing lanes. The ultimate facility is a four-lane expressway.
- Segment 2 (Walnut Drive to Harris Street in the City of Colusa) – has a concept level of LOS D. The 20-year concept facility is a two-lane conventional highway with passing lanes. The ultimate facility is a four-lane expressway.
- Segment 3 (Harris Street to Moon Bend Road in the City of Colusa) – has a concept level of LOS E. The 20-year concept facility is a two- to four-lane conventional highway. The ultimate facility is a four-lane conventional highway.
- Segment 4 (Moon Bend Road in the City of Colusa to the Sutter County Line) – has a concept level of LOS E. The 20-year concept facility is a two-lane conventional highway with passing lanes. The ultimate facility is a four-lane conventional highway.

3.13 TRANSPORTATION AND CIRCULATION

State Route 45 (SR 45)

Caltrans has identified the following two segments for SR 45 in Colusa County:

- Segment 1 (Yolo County Line to SR 20) – has a concept level of LOS D. The 20-year concept facility is a two-lane conventional highway. The ultimate facility is also a two-lane conventional highway.
- Segment 2 (SR 20 to Glenn County) – has a concept level of LOS D. The 20-year concept facility is a two-lane conventional highway. The ultimate facility is also a two-lane conventional highway.

LOCAL

Colusa County Transportation Commission

The 2008/09 *Colusa County Regional Transportation Plan (RTP)* (2008) is a long-range planning document for identifying and programming roadway improvements throughout Colusa County. The RTP guides transportation investments in the County involving local, state, and federal funding with a twenty year horizon. Transportation projects are categorized as Tier 1, Tier 2, and Tier 3. Tier 1 projects are considered fully fundable during the 2008 STIP, Tier 2 projects are considered fully fundable during the first ten years of the RTP, and Tier 3 projects are considered fundable give current (2008) revenue estimates by 2030.

Most of the Tier 1 and Tier 2 transportation projects in the 2008/09 RTP are needed for safety and system preservation, except for several Tier 2 State Highway Operations and Protection Program (SHOPP) projects that are needed for both safety and congestion relief. The SHOPP projects are identified for SR 20 and include operational and capacity improvements, two-way left-turn lanes in the City of Colusa, and passing lanes.

3.13.3 IMPACTS AND MITIGATION MEASURES

This section describes the transportation analysis of the Draft General Plan and indentifies potential impacts and mitigation measures that would be associated with adoption of the draft General Plan. Quantitative roadway impact analysis was conducted for 2030 conditions. A discussion of the transportation analysis methodology is included below, followed by the significance criteria, impact statements and mitigation measures.

TRANSPORTATION ANALYSIS METHODOLOGY

The transportation analysis for the roadway system followed the methodology described below. For other components of the transportation system, the policy framework and implementation program for the Draft General Plan were evaluated against the significance criteria.

A Colusa County travel demand forecasting model was developed and used to forecast future traffic volumes for the Colusa County Draft General Plan. The traffic model roadway network and regional travel characteristics were calibrated to ensure that the model accurately estimated traffic volumes and could be used in the analysis process to determine the number of travel lanes for major roadway

segments based on anticipated future population and employment growth. Appendix C includes a detailed summary of the model validation. The following summarizes the overall modeling process.

Land use inputs for the Colusa County model were based on the land use contained in the Colusa County 2030 General Plan, as described in Chapter 2.0, Project Description, and shown on Figure 2.0-3. For the incorporated cities of Williams and Colusa, the land use estimates were based on population and employment growth projections from the California Department of Finance and the California Economic Development Department. These growth numbers are consistent with the respective General Plan documents, but do not represent build-out conditions.

The 2030 land use forecasts were allocated to the traffic model traffic analysis zones (TAZs). The TAZs are geographic polygons used to organize land use input data for the travel demand model. The TAZs are defined by natural borders like roads, waterways, and topography and typically represent areas of homogenous travel behavior. A map of the Colusa County TAZs is contained in Appendix C.

The land use forecasts for 2030 were input to the Colusa County travel demand model and the model was run to generate daily (two-way total) traffic volume forecasts. The Colusa County travel demand model was used to compare relative differences in VMT within Colusa County for existing conditions and the 2030 General Plan.

Given the substantial increase in non-residential land use planned for Colusa County, VMT comparisons were made for all existing and planned land uses. The evaluation followed the three-step process described below:

Step 1 – Estimate Total VMT for all roads in Colusa County by trip origin and destination. Trips were classified as I-I (originates and remains with the County), X-I and I-X (one end of the trip has an origin or destination in Colusa County and the other end occurs in an adjacent County), or X-X (trip travels through the County but is not associated with land use in the County).

Step 2 – Reduce X-I and I-X VMT by 50 percent. This reduction is made in recognition that 50 percent of the responsibility of an I-X or X-I trip is assigned to the adjacent jurisdiction from which the trip originates or is destined.

Step 3 – Summarize Resulting VMT and Normalize Based on Development Levels. Table 3.13-5 displays the population and employment totals within Colusa County for existing and Draft General Plan conditions. The 2030 General Plan scenario has about 29 percent more population and employment.

SCENARIO	POPULATION AND EMPLOYMENT
Existing	30,100
2030 General Plan	38,700

3.13 TRANSPORTATION AND CIRCULATION

Table 3.13-6 compares existing VMT to Draft 2030 General Plan conditions. As shown, total VMT with the 2030 General Plan would increase by about 28 percent while VMT per service population (i.e., population and employment) would remain generally unchanged.

TABLE 3.13-6: VMT COMPARISON

SCENARIO	VMT	POPULATION AND EMPLOYMENT	VMT / POPULATION AND EMPLOYMENT
Existing	1,069,200	30,100	35.5
2030 General Plan	1,370,700	38,700	35.4

SOURCE: FEHR & PEERS, 2011

The VMT forecasts shown in Tables 3.13-7 likely underestimate actual or projected VMT associated with Colusa County. This occurs because the Colusa County traffic model is a countywide. Consequently, travel that is external to the county (i.e., IX and XI trip described above in Step 2) are estimated based on the closest major destination (e.g., Yuba City to the east on SR 20). However, actual travel outside Colusa County does and would continue to have a range of trip lengths.

Figure 3.13-4 shows daily (two-way total) traffic volume forecast under Draft 2030 General Plan conditions. These forecasted volumes were compared to the thresholds in Table 3.13-3. The resulting LOS is shown in Table 3.13-7 for State facilities and in Table 3.13-8 for County facilities. The analysis presented in Table 3.13-6 represents the future traffic conditions that would occur with implementation of the 2030 General Plan and proposed Land Use Map within a year 2030 horizon.

TABLE 3.13-7 : DAILY ROADWAY TRAFFIC VOLUMES AND LEVEL OF SERVICE 2030 GENERAL PLAN CONDITIONS – STATE FACILITIES

ROADWAY	SEGMENT	ROADWAY CLASSIFICATION	NUMBER OF LANES	EXISTING CONDITIONS		2030 GENERAL PLAN	
				ADT	LOS	ADT	LOS
I-5	South of Arbuckle	Freeway	4	35,800	B	46,900	C
	Arbuckle to Williams	Freeway	4	39,400	B	51,000	C
	North of Williams	Freeway	4	32,800	B	43,600	C
SR 20	East of SR 45	Class I Highway	2	7,600	C	11,300	D
	SR 45 to Wescott Road	Class I Highway	2	15,000	E	18,400	E
	Wescott Road to Fremont Street ¹	Class I Highway/4-Lane Divided Arterial	2/4	20,900	E	24,900	D
	Colusa to Williams	Class I Highway	2	4,200	C	5,500	C
	West of Williams	Class II Highway	2	7,100	C	8,600	D
SR 45	South of SR 20	Class I Highway	2	2,200	B	3,200	B
	North of Colusa	Class I Highway	2	2,300	B	4,400	C
SR 16	Lake County Line	Class II Highway	2	800	A	1,000	A

SOURCE: FEHR & PEERS, 2011.

TABLE 3.13-8 : DAILY ROADWAY TRAFFIC VOLUMES AND LEVEL OF SERVICE 2030 GENERAL PLAN CONDITIONS – COUNTY FACILITIES

ROADWAY	SEGMENT	ROADWAY CLASSIFICATION	NUMBER OF LANES	EXISTING CONDITIONS		2030 GENERAL PLAN	
				ADT	LOS	ADT	LOS
Wildwood Road	South of Hillgate Road	Minor County Highway	2	1,420	B	1,600	B
Hillgate Road	Wildwood Road to Cortina School Road	Minor County Highway	2	978	B	1,200	B
Cortina School Road	Hillgate Road to Hahn Road	Minor County Highway	2	568	A	800	A
Hahn Road	Lone Star Road to Grimes-Arbuckle Road	Minor County Highway	2	947	B	1,200	B
Grimes-Arbuckle Road	Hahn Road to Tule Road	Minor County Highway	2	600	A	900	B
Tule Road	Grimes-Arbuckle Road to Poundstone Road	Minor County Highway	2	1,231	B	1,600	B
City College Road	North of White Road	Minor County Highway	2	1,178	B	1,400	B
Lone Star Road	Myers Road to Abel Road	Minor County Highway	2	2,041	C	2,900	C
Abel Road	East of Lone Star Road	Minor County Highway	2	747	A	1,000	B
Lone Star Road	Abel Road to SR 20	Minor County Highway	2	1,883	B	2,800	C
Zumwalt Road	Myers Road to Walnut Drive	Minor County Highway	2	989	B	1,200	B
Walnut Drive	West of Zumwalt Drive	Minor County Highway	2	1,620	B	1,900	B
Zumwalt Road	North of Walnut Drive	Minor County Highway	2	1,578	B	2,300	C
Freshwater Road	West of I-5	Minor County Highway	2	642	A	700	A
Wilson Avenue	North of SR 20	Minor County Highway	2	579	A	2,400	C
Lurline Avenue	SR 45 to I-5	Minor County Highway	2	3,103	C	4,000	C
Maxwell Sites Road	East of McDermott Road	Minor County Highway	2	1,599	B	1,700	B
Maxwell Road	I-5 to 4 Mile Road	Minor County Highway	2	2,735	C	4,100	C

SOURCE: FEHR & PEERS, 2011

THRESHOLDS OF SIGNIFICANCE

The standards of significance used for the impact analysis of the proposed project were developed by considering the State CEQA Guidelines Appendix G. The 2030 General Plan would have a significant impact on transportation and circulation if it causes any of the follow outcomes that address and include CEQA Appendix G criteria:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; and
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: Implementation of the proposed General Plan would result in acceptable traffic operation on County roadways (less than significant)

Development allowed under the 2030 General Plan would result in increased use of the County's circulation system associated with increased residential, commercial, industrial, agricultural, recreational, and other uses accommodated under the 2030 General Plan. In the unincorporated area of the County, the General Plan establishes the measure of effectiveness for the circulation system that is managed by the County (see Impacts 3.13-2 and 3.13-3 for analysis of impacts to municipal and Caltrans facilities). The General Plan establishes LOS thresholds for roadway operations; the County does not have plans, ordinances, or policies that establish thresholds for pedestrian, bicycle, or transit traffic. The LOS threshold for roadways in the unincorporated County, excluding those under the jurisdiction of Caltrans, is LOS C, as established by the 1989 General Plan. The 2030 General Plan would maintain LOS C, as described under Policy CIRC 1-5. The 2030 General Plan also includes measures to reduce vehicle miles travelled and associated traffic effects through encouraging alternative modes of travel, including public transit, bicycle, and pedestrian modes.

Figure 3.13-4 shows daily (two-way total) traffic volume forecast under 2030 General Plan conditions. These volumes were compared to the thresholds in Table 3.13-3. The resulting LOS is shown in Table 3.13-8. The analysis presented in Table 3.13-8 represents the development potential of the 2030

General Plan within the planning horizon (2030). Countywide, travel is forecast to increase an average of about 31 percent.

As shown in Table 3.13-8, implementation of the 2030 General Plan would result in acceptable operation (LOS C or better) on all study roadways that are under the jurisdiction of Colusa County. This would be a **less than significant** impact. While no mitigation measures are necessary, the 2030 General Plan includes a set of policies and actions designed to ensure acceptable travel conditions on local roadways through adequately planning and funding roadway improvements. Applicable General Plan policies and actions will ensure that subsequent development projects address their project-level impacts (e.g., localized impacts on intersections and roadway segments that are peculiar to the individual project), pay their fair-share of roadway improvements, and/or provide necessary off-site improvements. These policies and actions will ensure that impacts to County roadways remain less than significant.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CIRC 1-1: Provide a circulation system that is consistent with the roadway network shown in the Circulation Element Diagram Figure CIRC-1.

Policy CIRC 1-5: Maintain LOS C or better for County roadways and intersections in the unincorporated County .

Policy CIRC 1-9: Periodically evaluate the adequacy of traffic impact fees and roadway financing programs to ensure sufficient funding is provided for circulation network improvements necessitated by existing and planned future growth.

Policy CIRC 1-10: Ensure adequate funding and planning mechanisms are in place to identify needed roadway improvements and establish methods to finance roadway improvements, particularly those improvements that may not be provided in full by new development.

Policy CIRC 1-11: Require new development to finance and construct all off-site circulation improvements (including safety improvements) necessary to mitigate a project's transportation impacts, consistent with the policies of the General Plan. Right-of-way dedication should be requested as a condition of a proposed new or widened major or minor collector.

Policy CIRC 1-12: Require new development and other projects with transportation impacts to pay their fair share cost of all feasible transportation improvements, including bicycle/pedestrian, transit, and safety, necessary to reduce the severity of cumulative transportation impacts.

Policy CIRC 1-13: Require specific plans, commercial and industrial projects, subdivisions, and other large-scale projects to implement appropriate transportation control measures to reduce vehicle miles traveled and traffic congestion.

Policy CIRC 1-14: Ensure that transportation and circulation improvements are constructed and operational prior to or concurrent with the need for the improvements, to the extent feasible.

Policy CIRC 1-37: Explore and pursue all available state, federal, and private funding for the development of its transportation systems, where the County has a reasonable chance of receiving funding or developing a successful program.

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Policy CIRC 4-1: Ensure that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects.

Policy CIRC 4-2: All transportation improvement projects proposed for inclusion in local and regional transportation plans (Regional Transportation Plan, Regional Transportation Improvement Program, Congestion Management Plan, Capital Improvement Program, etc.) shall be consistent with the air quality, transportation, land use, and other goals and policies of the General Plan.

Policy CIRC 4-3: Projects included in the Capital Improvement Program and proposed for regional transportation plans should prioritize, in the following order: 1) projects that improve operations on existing roads without increasing capacity, 2) projects that encourage alternative transportation modes, 3) projects that increase capacity on existing roadways, and 4) new roadways.

Policy CIRC 4-4: Coordinate with Caltrans, the Colusa County Air Pollution Control District, and Colusa County Regional Transportation Commission to minimize air quality and transportation impacts associated with planned and existing transportation facilities.

Policy LU 1-5: Ensure that the density and intensity of allowed development in established communities and rural areas is consistent with the existing and planned capability of public services and infrastructure.

Policy LU 3-7: Require a public facilities financing plan for development projects that will not adequately be served by existing and planned infrastructure and facilities and/or those improvements identified in the County's Capital Improvement Program that are funded through the County's development impact fee program. The financing plan shall identify needed public improvements and shall include a plan to pay for and develop the required public improvements.

Policy LU 3-17: Ensure that zoning and land use designations at the Interstate 5 freeway interchanges at Arbuckle, Maxwell, and the unincorporated area near Williams are used for highway-oriented commercial use. These uses, which include hotels, restaurants, and service stations, should be oriented to interstate travelers, tourists, and visitors to the County's various open space recreation and agricultural opportunities. Development at these interchanges should be planned to minimize traffic and safety hazards on local streets to the extent feasible.

Policy LU 3-21: Locate commercial lands within or contiguous to developed areas convenient to public services, such as near the boundaries of cities and communities; in locations served by the publicly-maintained circulation network; and within or proximate to planned growth areas.

Actions

Action CIRC 1-A: Develop and adopt transportation impact study (TIS) guidelines for development, infrastructure, and public projects that consider all modes of travel and define, at a minimum, the need for transportation impact studies, analysis methodology, and CEQA significance criteria.

Action CIRC 1-B: Pursue all available sources of funding and protect existing sources for the development, improvement, and maintenance of the existing roadway system.

Action CIRC 1-C: Establish a County transportation impact fee program that addresses impacts to Countywide transportation facilities and establish or update community-level fee programs to address impacts to local roadways in communities projected to accommodate the majority of growth in the next 5-10 years, including Arbuckle, Maxwell, and the unincorporated areas around Colusa and Williams. The

program should address: timely construction of necessary improvements to accommodate existing needs and projected growth, a stable source of funding for necessary road improvements, and that new development pays for its fair share of impacts to local and regional facilities.

Action CIRC 1-D: Review and revise roadway standards for community and rural areas to ensure that the standards are adequate to accommodate complete streets, addressing the following factors as applicable: number of travel lanes, lane width, medians, drainage control, shoulder width, parking lanes, bike lanes, fire and emergency response standards, curb and gutter design, landscaped strip and sidewalk width. The revised standards should also include a requirement for a 40-foot minimum easement width when creating an access easement or road when one or more parcels is to be accessed.

Action CIRC 1-F: As part of the development review and planning process, review general plan amendments, zone change requests, specific plans, subdivisions, commercial and industrial projects, as well as other large-scale development projects to ensure that adequate transportation control measures are included.

Impact 3.13-2: Implementation of the Draft General Plan would contribute vehicle trips to roadway project to operate worse than the LOS thresholds of the incorporated Cities of Colusa and Williams (significant and unavoidable)

Development allowed under the 2030 General Plan would result in increased traffic in the County; some of this traffic would travel to/from or through the Cities of Williams and Colusa. Each of these cities has established thresholds for traffic operations for roadways under their jurisdiction. The following applicable thresholds were used to identify potential roadway impact in incorporated cities with implementation of the Draft General Plan.

CITY OF COLUSA

Impacts to roadway and intersection within the City of Colusa were evaluated based on the City's minimum LOS threshold established by the City of Colusa General Plan (Adopted October 30, 2007), which identifies the following policy:

Policy CIR-1.1: The City shall ensure that the maintenance of acceptable Levels of Service (LOS) on City streets and intersection when considering new development within Colusa.

Implementing Action CIR-1.1.a: Streets and Roadways Master Plan

The city will prepare, adopt, and periodically update a Streets and Roadways Master Plan that establishes LOS C as the minimum acceptable LOS for City streets and intersections, except in the downtown area on SR 20/45 and SR 20 (Market, Bridge, 10th, and Main Streets), where LOS D is established as the minimum acceptable LOS, consistent with Caltrans LOS standards for state highways through urban areas. If conditions of LOS D or worse area already present, future proposed project may not cause roadway volumes to increase by five percent or more and be accompanied by other mitigation measures intended to reduce trip generation.

Consistent with Action CIR-1.1.a, the City of Colusa prepared Streets and Roadways Master Plan. The Final Draft of the City of Colusa Streets and Roadways Master Plan, September, 2009, identifies deficiencies and recommended improvements under 2030 conditions that are needed to satisfy the LOS

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standards of Policy CIR-1.1. The Streets and Roadway Master Plan identified the following improvements and recommendations:

- Widening Bridge Street between Market Street and Fremont Street to provide a third lane for left-turn movements;
- Widen Bridge Street between Fremont Street and Wescott Road to four lanes with a two-way left-turn lane and dedicated left-turn lanes at major intersection;

Note that this segment of Bridge Street (SR 20) is shown in Table 3.13-5 as operating at LOS D, which assumes improvements consistent with those outlined above; and

- Installation of traffic signal or roundabout at the SR 45/Lruline Avenue, 10th Street/Fremont Street, 10th Street/Sioc Street, Bridge Street/Market Street, and SR 20/Wescott Road intersections.

CITY OF WILLIAMS GENERAL PLAN

The City of Williams 1988 General Plan does not establish circulation or traffic thresholds. Therefore, impacts to roadway and intersection within the City of Williams were evaluated based on the City's minimum LOS threshold identified in the City of Williams General Plan (Draft April 5, 2011), which identifies the following LOS threshold:

LOS D has been taken as the City's threshold for acceptable/tolerable operations for all study roadway facilities except in downtown area. LOS E has been taken as the threshold for acceptable/tolerable operations in downtown area. In both cases, (with exception to State Highways) the City Council may allow exceptions to these standards when there is a clear public benefit that overrides the need to maintain the specified LOS.

The City of Williams General Plan Circulation Element (Table 8.7 – Buildout Year 2030 Conditions Intersections Level of Service) identifies deficiencies at 19 of the 21 study intersections, which would exceed the LOS threshold outlined above under year 2030 conditions. Improvements for the impacted intersections are identified and include the installation of traffic signal control.

ANALYSIS

Implementation of the 2030 General Plan would contribute vehicle trips to the municipal circulation facilities of the Cities of Colusa and Williams. Under the buildout conditions associated with the adopted City of Colusa General Plan and the Williams Draft General Plan, roadways and intersections within each city would operate at unacceptable conditions as described in the City of Colusa General Plan Master EIR (City of Colusa, 2007) and the Omni-Means Technical Memorandum prepared for the 2010 Circulation Update Study (Omni-Means, 2011). Since the 2030 General Plan would accommodate additional development that would result in increased traffic on roadways under the jurisdictions of the Cities of Colusa and Williams that are projected to operate at unacceptable levels, the 2030 General Plan could contribute to significant impacts.

Subsequent development allowed under the 2030 General Plan would be required to comply with the policies and action of the 2030 General Plan, as well as comply with the requirements of CEQA regarding identification and mitigation associated with significant transportation impacts. While implementation of improvements identified in the City of Colusa Streets and Roadways Master Plan and the Williams Draft Circulation Element/Omni-Means Memorandum would result in acceptable LOS on municipal roadways, the timing and funding for the needed improvements is not certain. The 2030 General Plan includes Policy CIRC 1-12, which identifies the collection of fair-share cost of all feasible transportation improvements necessary to reduce the severity of cumulative transportation impacts. In addition, Policy LU 1-25 calls for the County to negotiate with the cities to achieve mutually beneficial outcomes including development impact fees for funding of regional roadways. These policies are crafted so that future development addresses its fair-share of the need for regional circulation improvements.

While implementation of the policies and actions included in the 2030 General Plan would encourage subsequent projects address their contribution to roadway impacts in the cities, there is no guarantee that the cities will agree to a new funding mechanism or construct the roadway capacity expansion and operational projects to reduce the identified impacts. The County does not have jurisdiction within the cities to ensure that improvements necessary to mitigate potential impacts are made and there is currently not an inter-jurisdictional method in place to collect fees and assure necessary improvements for cross-jurisdictional impacts. While the 2030 General Plan includes measures to provide for the funding of improvements, the implementation of mitigation measures within the Cities of Colusa and Williams is beyond the control of the County. Therefore, this impact would remain **significant and unavoidable** and no additional mitigation, beyond those policies and actions identified in the 2030 General Plan, is available to fully mitigate this impact.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CIRC 1-9: Periodically evaluate the adequacy of traffic impact fees and roadway financing programs to ensure sufficient funding is provided for circulation network improvements necessitated by existing and planned future growth.

Policy CIRC 1-10: Ensure adequate funding and planning mechanisms are in place to identify needed roadway improvements and establish methods to finance roadway improvements, particularly those improvements that may not be provided in full by new development.

Policy CIRC 1-11: Require new development to finance and construct all off-site circulation improvements (including safety improvements) necessary to mitigate a project's transportation impacts, consistent with the policies of the General Plan. Right-of-way dedication should be requested as a condition of a proposed new or widened major or minor collector.

Policy CIRC 1-12: Require new development and other projects with transportation impacts to pay their fair share cost of all feasible transportation improvements, including bicycle/pedestrian, transit, and safety, necessary to reduce the severity of cumulative transportation impacts.

Policy CIRC 1-13: Require specific plans, commercial and industrial projects, subdivisions, and other large-scale projects to implement appropriate transportation control measures to reduce vehicle miles traveled and traffic congestion.

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Policy CIRC 1-14: Ensure that transportation and circulation improvements are constructed and operational prior to or concurrent with the need for the improvements, to the extent feasible.

Policy CIRC 1-35: Local transportation funds shall be allocated to the cities of Colusa and Williams and the County by the Local Transportation Commission based on the most current Department of Finance population estimate for each area.

Policy CIRC 4-1: Ensure that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects.

Policy CIRC 4-2: All transportation improvement projects proposed for inclusion in local and regional transportation plans (Regional Transportation Plan, Regional Transportation Improvement Program, Congestion Management Plan, Capital Improvement Program, etc.) shall be consistent with the air quality, transportation, land use, and other goals and policies of the General Plan.

Policy LU 1-25: Work cooperatively and negotiate with each of the cities to achieve mutually beneficial outcomes related to, among other things: planning within spheres of influence; development impact fees for funding of regional parks and amenities, regional roadways and government services that benefit the entire County (including incorporated areas) and “replacement” funding for revenues foregone to protect agriculture and rural character.

Policy LU 3-7: Require a public facilities financing plan for development projects that will not adequately be served by existing and planned infrastructure and facilities and/or those improvements identified in the County’s Capital Improvement Program that are funded through the County’s development impact fee program. The financing plan shall identify needed public improvements and shall include a plan to pay for and develop the required public improvements.

Policy CC 1-13: Encourage the preparation of Specific Plans for developments of large areas of land within the unincorporated communities to ensure that a mix of land uses, a range of housing types/densities, and adequate public facilities, and infrastructure improvements are provided.

Actions

Action CIRC 1-A: Develop and adopt transportation impact study (TIS) guidelines for development, infrastructure, and public projects that consider all modes of travel and define, at a minimum, the need for transportation impact studies, analysis methodology, and CEQA significance criteria.

Action CIRC 1-F: As part of the development review and planning process, review general plan amendments, zone change requests, specific plans, subdivisions, commercial and industrial projects, as well as other large-scale development projects to ensure that adequate transportation control measures are included.

Impact 3.13-3: Implementation of the Draft General Plan would Result in Increased Traffic on State Highways and Facilities (significant and unavoidable)

Development allowed under the 2030 General Plan would result in increased use of the County’s circulation system associated with increased residential, commercial, industrial, agricultural, recreational, and other uses accommodated under the 2030 General Plan. For state roadway facilities, Caltrans establishes standards for the operation of the roadway system that is within its jurisdiction. The TCRs for I-5, SR 16, and SR 45 establish the route concept for each of these facilities as LOS D. The

TCS for SR 20 establishes a route concept for the segment from Lake County line to Harris Street in the City of Colusa as LOS D, the segment from Harris Street to the Sutter County line has a route concept of LOS E.

The analysis presented in Table 3.13-7 represents the development potential of the 2030 General Plan and proposed Land Use Map within the planning period (year 2030 horizon) that will result in an increase in countywide travel of about 31 percent. Interstate 5, SR 16, SR 20, and SR 45 serve as the backbone infrastructure for the County and are the primary roadways serving longer regional trips. In addition to longer regional trips, SR 20 in the City of Colusa also serves shorter local trips. Consequently, the segment of SR 20 between Wescott Road to Fremont Street will continue to be one of the busiest roadways in the County. Under the 2030 planning horizon, the segment of SR 20 from Wescott Road to Fremont Street is planned to be widened from one- to two-lanes in each direction (with turn lanes) in the City of Colusa General Plan and the City's Streets and Roadways Master Plan, which would result in operations above the acceptable LOS concept. As shown in Table 3.13-7, development under the 2030 General Plan would result in increased traffic on state facilities but would not cause any of the facilities to exceed the established route concept LOS, with implementation of planned improvements.

In addition to the improvements shown in the Circulation Diagram, the 2030 General Plan also includes measures to reduce vehicle miles travelled and associated traffic effects through encouraging alternative modes of travel, including public transit, bicycle, and pedestrian modes. Subsequent development allowed under the 2030 General Plan would be required to comply with the policies and action of the 2030 General Plan, as well as comply with the requirements of CEQA regarding identification and mitigation associated with significant transportation impacts. The 2030 General Plan includes Policy CIRC 1-12, which identifies the collection of fair-share cost of all feasible transportation improvements necessary to reduce the severity of cumulative transportation impacts. Policy CIRC 1-6 endeavors to maintain LOS on state highways consistent with Caltrans standards and Policy CIRC 1-9 and 1-10 is in place to establish methods to finance roadway improvement that may not be fully funded by new development. These policies are crafted to ensure that subsequent development pays a fair share proportion of the cost for regional circulation improvements, thus providing a funding mechanism for each project's fair-share of impacts to roadways, including state facilities.

While implementation of the 2030 General Plan would result in acceptable LOS, implementation of future improvements on state facilities is uncertain because the implementation of such improvements is outside of the County's jurisdiction. The State budget has been shown to be uncertain in recent years and the ability of Caltrans to fund and implement planned improvements cannot be assured. Further, the planned development in the unincorporated area of the County only accounts for a portion of the need for future improvements on state facilities and the remaining cost of necessary improvements associated with out of County and local traffic would need to be funded separately.

While implementation of the policies and actions included in the 2030 General Plan would ensure the County's fair-share of funding from new development projects toward roadway impacts on state facilities, there is no guarantee that full funding for the identified improvements will be available, that mechanisms will be in place for the collection and administration by the state of such funding, or that the roadway capacity expansion project to reduce the identified impacts will actually be constructed. While the policies and actions in the 2030 General Plan would mitigate potential impacts to address the

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County's fair-share of the impacts, full mitigation of the impacts is beyond the County's control. Therefore, this impact would remain **significant and unavoidable** and no further mitigation is available.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CIRC 1-6: Maintain levels of service on state highways consistent with Caltrans standards, to the extent feasible.

Policy CIRC 1-9: Periodically evaluate the adequacy of traffic impact fees and roadway financing programs to ensure sufficient funding is provided for circulation network improvements necessitated by existing and planned future growth.

Policy CIRC 1-10: Ensure adequate funding and planning mechanisms are in place to identify needed roadway improvements and establish methods to finance roadway improvements, particularly those improvements that may not be provided in full by new development.

Policy CIRC 1-11: Require new development to finance and construct all off-site circulation improvements (including safety improvements) necessary to mitigate a project's transportation impacts, consistent with the policies of the General Plan. Right-of-way dedication should be requested as a condition of a proposed new or widened major or minor collector.

Policy CIRC 1-12: Require new development and other projects with transportation impacts to pay their fair share cost of all feasible transportation improvements, including bicycle/pedestrian, transit, and safety, necessary to reduce the severity of cumulative transportation impacts.

Policy CIRC 1-13: Require specific plans, commercial and industrial projects, subdivisions, and other large-scale projects to implement appropriate transportation control measures to reduce vehicle miles traveled and traffic congestion.

Policy CIRC 4-1: Ensure that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects.

Policy CIRC 4-2: All transportation improvement projects proposed for inclusion in local and regional transportation plans (Regional Transportation Plan, Regional Transportation Improvement Program, Congestion Management Plan, Capital Improvement Program, etc.) shall be consistent with the air quality, transportation, land use, and other goals and policies of the General Plan.

Policy CIRC 4-3: Projects included in the Capital Improvement Program and proposed for regional transportation plans should prioritize, in the following order: 1) projects that improve operations on existing roads without increasing capacity, 2) projects that encourage alternative transportation modes, 3) projects that increase capacity on existing roadways, and 4) new roadways.

Policy CIRC 4-4: Coordinate with Caltrans, the Colusa County Air Pollution Control District, and Colusa County Regional Transportation Commission to minimize air quality and transportation impacts associated with planned and existing transportation facilities.

Policy LU 1-5: Ensure that the density and intensity of allowed development in established communities and rural areas is consistent with the existing and planned capability of public services and infrastructure.

Policy LU 3-7: Require a public facilities financing plan for development projects that will not adequately be served by existing and planned infrastructure and facilities and/or those improvements identified in

the County's Capital Improvement Program that are funded through the County's development impact fee program. The financing plan shall identify needed public improvements and shall include a plan to pay for and develop the required public improvements.

Policy CC 1-13: Encourage the preparation of Specific Plans for developments of large areas of land within the unincorporated communities to ensure that a mix of land uses, a range of housing types/densities, and adequate public facilities, and infrastructure improvements are provided.

Actions

Action CIRC 1-A: Develop and adopt transportation impact study (TIS) guidelines for development, infrastructure, and public projects that consider all modes of travel and define, at a minimum, the need for transportation impact studies, analysis methodology, and CEQA significance criteria.

Action CIRC 1-C: Establish a County transportation impact fee program that addresses impacts to Countywide transportation facilities and establish or update community-level fee programs to address impacts to local roadways in communities projected to accommodate the majority of growth in the next 5-10 years, including Arbuckle, Maxwell, and the unincorporated areas around Colusa and Williams. The program should address: timely construction of necessary improvements to accommodate existing needs and projected growth, a stable source of funding for necessary road improvements, and that new development pays for its fair share of impacts to local and regional facilities.

Action CIRC 1-F: As part of the development review and planning process, review general plan amendments, zone change requests, specific plans, subdivisions, commercial and industrial projects, as well as other large-scale development projects to ensure that adequate transportation control measures are included.

Action CIRC4-A: County transportation planning decisions shall be coordinated with all affected public and private agencies.

Impact 3.8-4: Potential Hazards Due to Design Features of Incompatible Uses (less than significant)

Colusa County maintains improvement standards that guide the construction of new transportation facilities to minimize design hazards for all users of the system. Through the environmental review process, land use proposals that would add traffic to streets not designed to current standards are carefully evaluated. If needed, mitigations are identified and the project is conditioned to construct or provide funding for an improvement that would minimize or eliminate the hazard. Typical improvements include shoulder widening, special signage and striping, adding turn pockets, adding sidewalks or crosswalks, realigning sharp curves, prohibiting certain turning movements, and other improvements.

The implementation of the Draft General Plan Update would increase the amount of vehicle traffic. However, County roadways will operate at acceptable levels as previously described. New and upgraded roadways needed to accommodate new development will be designed according to applicable federal, state, and local design standards.

Subsequent development, infrastructure, and planning projects would be required to comply with the 2030 General Plan, the County Code, and applicable state and local regulations. The 2030 General Plan establishes policies and actions that would ensure potential hazards associated with project design and

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compatibility of uses are addressed. Specifically, the 2030 General Plan includes Policies CIRC 3-4 to provide appropriate signage to warn of potential hazards, CIRC allow for the Further, Policy CIRC 3-5 to limit driveway intersections and curb cuts along roadways to provide improved safety, and a range of policies to ensure adequate emergency access. Policy CIRC 3-8 calls for widening of state highways to allow the safe movement of farm vehicles and equipment and Policy CIRC 3-9 that calls to limit the intrusion of agricultural vehicles and heavy trucks on new residential streets, which would address compatibility issues between residential uses and agricultural and industrial uses. Actions identified to support these policies would ensure that the County's roadway standards are reviewed and updated as necessary (CIRC 1-D), to ensure that commercial, industrial, and industrial agricultural uses have a public access plan to address public safety and site access (CIRC 3-B), bi-annual review of truck routes (3-C), and to bi-annually review the County's circulation system to identify and address any existing traffic hazards. Implementation of these policies and actions would ensure that potential transportation hazards associated with project design and compatibility of uses is addressed and mitigated. Further, the 2030 General Plan Update does not contain any provisions that would increase hazards due to design features of incompatible uses. Therefore, this impact is **less than significant**.

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Policies

Policy CIRC 1-2: Roadway classifications shall be built to the standards described below and illustrated in Figures CIRC-2a and CIRC-2b.

Policy CIRC 1-3: Address the concept of "complete" streets, which requires more complete consideration of all users of the street, in new development and roadway improvement projects.

Policy CIRC 3-4: Install stop signs, railroad crossing guards, and warning signs where appropriate and warranted.

Policy CIRC 3-5: Limit driveway intersections and curb cuts along arterial and collector roadways in order to provide improved mobility and safety for all travel modes.

Policy CIRC 3-6: Ensure adequate access for emergency vehicles.

Policy CIRC 3-7: Ensure adequate access to emergency facilities and between major communities.

Policy CIRC 3-8: Encourage the widening of State highways to allow the safe movement of farm vehicles and equipment.

Policy CIRC 3-9: Limit the intrusion of agricultural vehicles and heavy trucks on new residential streets.

Policy CIRC 4-3: Projects included in the Capital Improvement Program and proposed for regional transportation plans should prioritize, in the following order: 1) projects that improve operations on existing roads without increasing capacity, 2) projects that encourage alternative transportation modes, 3) projects that increase capacity on existing roadways, and 4) new roadways.

Policy LU 3-17: Ensure that zoning and land use designations at the Interstate 5 freeway interchanges at Arbuckle, Maxwell, and the unincorporated area near Williams are used for highway-oriented commercial use. These uses, which include hotels, restaurants, and service stations, should be oriented to interstate travelers, tourists, and visitors to the County's various open space recreation and agricultural opportunities. Development at these interchanges should be planned to minimize traffic and safety hazards on local streets to the extent feasible.

Actions

Action CIRC 1-D: Review and revise roadway standards for community and rural areas to ensure that the standards are adequate to accommodate complete streets, addressing the following factors as applicable: number of travel lanes, lane width, medians, drainage control, shoulder width, parking lanes, bike lanes, fire and emergency response standards, curb and gutter design, landscaped strip and sidewalk width. The revised standards should also include a requirement for a 40-foot minimum easement width when creating an access easement or road when one or more parcels is to be accessed.

Action CIRC 3-A: Work with federal and state funding agencies to create a funding plan to implement improvements for emergency access, evacuation, fire protection, public safety, and drainage, and work with appropriate agencies to identify and prioritize projects.

Action CIRC 3-B: As part of the development review process, ensure that roadside commercial uses, large-scale industrial uses, and large-scale commercial or industrial agricultural uses have an approved public access plan. The plan should address public safety and ease of access to the site.

Action CIRC 3-C: Bi-annually review truck routes and revise, where necessary, to reduce truck traffic through residential and pedestrian-oriented areas.

Action CIRC 3-D: Bi-annually review the County's circulation system for areas with traffic hazards, such as the approach to the one-lane bridge near Sites, and prioritize installation of warning signage, stop signs, or other appropriate measures for locations with significant accident rates.

Impact 3.8-5: Increased Demand for Public Transit Services would Not Conflict with Applicable Plans or Exceed Capacity (less than significant)

Implementation of the 2030 General Plan would accommodate increased growth, including an increase in the County's population and employment, that would likely increase the demand for transit services. Funding for transit operations and maintenance includes two sources from the Transportation Development Act (TDA) that are based in part on local sales tax revenue, with allocation based on population and transit operator revenue. Historically, TDA funds have kept pace with inflation. The County currently has limited public transit services. There are not established standards regarding transit level of service that have been adopted by the County or public transit agency serving the County.

The 2030 General Plan recognizes that there is an existing need for improved transit services and that there will be a need to provide additional transit services to serve growth in the County. Policy CIRC 1-20 through 1-22 would ensure coordination with regional transit providers and encourage efforts to improve existing transit services. Action CIRC 1-H would require new development to accommodate transit facilities (bus stops, turn-arounds) and to fund its fair share of transit services. Subsequent development, infrastructure, and planning projects would be required to comply with the 2030 General Plan, the County Code, and applicable state and local regulations. Implementation of the identified 2030 General Plan policies and actions would ensure that new growth funds its fair-share of transit impacts and transit service is provided and sustained in Colusa County. Therefore, this impact is **less than significant**.

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Policies

Policy CIRC 1-20: Ensure that residents have convenient transit service to employment centers, County service centers, other government centers, and regional destinations (i.e., Sacramento International Airport), as funding allows.

Policy CIRC 1-21: Work with Colusa County Transit and neighboring transit providers, including Yuba/Sutter Transit, Yolo Bus, and Glenn County Transit, to ensure that Colusa County residents have access to destinations throughout the region.

Policy CIRC 1-22: Prioritize providing public transit connections, through Colusa County Transit and Dial-a-Ride, from the major unincorporated communities to locations that connect with other regional transit providers (e.g., Yuba/Sutter Transit, Yolo Bus, and Glenn County Transit) and to the incorporated cities and make every effort to provide daily service, at a minimum, to the unincorporated communities of Arbuckle, College City, Grimes, Princeton, Maxwell, and Stonyford.

Policy CIRC 1-23: Apply for Urban Mass Transit Act (AMTA) Section 18 formula and discretionary funds.

Policy CIRC 1-24: Limit use of State Transit Assistance funds to transit facilities and service.

Policy CIRC 1-25: Encourage the continuation of privately operated bus service between unincorporated communities, Colusa, Williams, and connections to regional transit.

Policy CIRC 1-26: Prioritize providing public transportation for the elderly, handicapped, economically disadvantaged, and others with unmet transportation needs. Secondary priority is given to diverting automobile trips to transit.

Policy CIRC 1-27: Support applications by private non-profit rural transit providers for federal subsidies. Explore and support opportunities for private operation of the transit system as needed to fill gaps in public transit options.

Actions

Action CIRC 1-G: Support regional transit planning efforts to develop and implement intra-regional transit service.

Action CIRC 1-H: As part of the development review process, ensure that development and planning projects accommodate transit facilities (bus stops, sheltered bus stops, turnarounds, etc.) where appropriate and that development contributes its fair share to transit facilities and services.

Impact 3.8-6: Increased Demand for Pedestrian and Bicycle Infrastructure would Not Exceed Capacity or Disrupt Existing or Planned Facilities (less than significant)

Implementation of the Draft General Plan Update would accommodate growth that would result in increased pedestrian and bicycle use. One of the objectives of the 2030 General Plan is to: Promote and Ensure the Provision of Safe, Convenient and Attractive Sidewalks, Bikeways, and Trails where Appropriate for Local, Regional and Recreational Travel.” The 2030 General Plan would establish a regional Bicycle Master Plan that would provide improved facilities for cyclists and pedestrians. The 2030 General Plan would also improve bicycle and pedestrian facilities at the community level. The 2030 General Plan includes policies and actions related to support development of a multi-modal transportation system and improved livability through land use and transportation decisions that

provide travel choices. Subsequent projects would be required to comply with 2030 General Plan policies and actions, including those that require bicycle lanes, sidewalks, and improved bicycle/pedestrian facility connectivity. Policies CIRC 1-28 through CIRC 1-34 are identified to promote and improve bicycle and pedestrian facilities, with Policy CIRC 1-29 specifically requiring a complete bikeway and sidewalk system within each community. Action CIRC 1-I calls for the development and adoption of a bicycle master plan. Figure CIRC 5 displays proposed bicycle facilities for Colusa County. Policy CIRC 1-12 calls for new development and other project to pay their fair share cost for bicycle and pedestrian improvements. Implementation of the 2030 General Plan would provide improved pedestrian and bicycle facilities to serve existing and future needs. Therefore, the project would have a **less than significant** impact on pedestrian and bicycle facilities.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CIRC 1-3: Address the concept of “complete” streets, which requires more complete consideration of all users of the street, in new development and roadway improvement projects.

Policy CIRC 1-11: Require new development to finance and construct all off-site circulation improvements (including safety improvements) necessary to mitigate a project’s transportation impacts, consistent with the policies of the General Plan. Right-of-way dedication should be requested as a condition of a proposed new or widened major or minor collector.

Policy CIRC 1-12: Require new development and other projects with transportation impacts to pay their fair share cost of all feasible transportation improvements, including bicycle/pedestrian, transit, and safety, necessary to reduce the severity of cumulative transportation impacts.

Policy CIRC 1-13: Require specific plans, commercial and industrial projects, subdivisions, and other large-scale projects to implement appropriate transportation control measures to reduce vehicle miles traveled and traffic congestion.

Policy CIRC 1-14: Ensure that transportation and circulation improvements are constructed and operational prior to or concurrent with the need for the improvements, to the extent feasible.

Policy CIRC 1-19: Include safe routes to schools in new development projects, where appropriate.

Policy CIRC 1-29: Create a complete bikeway and sidewalk system within each community, including the completion of existing systems and provide connections to the regional system. Create walkways and bikeways that connect existing paths where feasible, and that connect to downtown/community core areas, schools, grocery stores, parks, and other community features.

Policy CIRC 1-30: Ensure that existing and new pedestrian facilities are compliant with the Americans With Disabilities Act (ADA).

Policy CIRC 1-31: Protect abandoned rail corridors for re-use as trails and other forms of alternative transportation.

Policy CIRC 1-32: Support development of facilities that link bicyclists and pedestrians with other modes of transportation.

Policy CIRC 1-33: Require residential development at urban densities (3.5 units per gross acre or greater) to include provisions for bicycle and pedestrian travel. Where possible, these bicycle and pedestrian routes should be integrated with trails serving the rest of the community.

3.13 TRANSPORTATION AND CIRCULATION

Policy CIRC 1-34: Sidewalks should be required within all new development at urban densities if such development is contiguous or within the communities of Arbuckle, Maxwell, Grimes, or Princeton. This requirement also applies to the unincorporated portions of Colusa and Williams, and its adoption by each of these two cities is encouraged.

Actions

Action CIRC 1-D: Review and revise roadway standards for community and rural areas to ensure that the standards are adequate to accommodate complete streets, addressing the following factors as applicable: number of travel lanes, lane width, medians, drainage control, shoulder width, parking lanes, bike lanes, fire and emergency response standards, curb and gutter design, landscaped strip and sidewalk width. The revised standards should also include a requirement for a 40-foot minimum easement width when creating an access easement or road when one or more parcels is to be accessed.

Action CIRC 1-E: Seek funding for the Safe Routes to Schools program.

Action CIRC 1-I: Develop and adopt a Bicycle Master Plan that provides for and encourages the development of an integrated system of bikeway facilities. These facilities would provide for safe and convenient travel for bicyclists and access to recreational bicycling opportunities throughout the County.

The Bicycle Master Plan should include provisions that:

- Provide safe bicycle routes within communities between residential, commercial areas, schools, downtown/community core areas, and essential services.*
- Provide regional bicycle routes establishing access between the larger communities, incorporated cities, recreation destinations, and scenic areas as generally shown in Figure CIRC-3*
- Utilize existing linear features such as levees and public utility right-of-ways.*
- Provide access to recreational areas such as the Sacramento River, East Park Reservoir, Mendocino National Forest, and proposed Sites Reservoir.*
- Prioritize construction of bikeways, including off-road bikeways in locations that have the highest demand, both at the local community and regional recreation levels.*
- Require development to dedicate rights-of-way or easements to construction.*
- Consider Bicycle/Pedestrian Master Plans adopted by the Cities of Colusa and Williams.*

Action CIRC 1-J: Pursue funding for construction and maintenance of bikeways and sidewalks, including off-road bikeways where feasible.

Action CIRC 1-K: Develop an Americans With Disabilities Act (ADA) transition and compliance program for pedestrian facilities.

Impact 3.8-7: Increased Demand for Aviation Facilities and Services (less than significant)

Demand for aviation facilities and services may increase with population and employment growth in Colusa County, accommodated under the 2030 General Plan. While the 2030 General Plan includes Policy CIRC 2-6 to encourage expansion of the airport, the 2030 General Plan does not include specific types or locations of development (e.g., air park, residential/office uses with on-site hangars and airport connectivity, etc.) or other provisions that would directly result in an increased need for flights. The Colusa County Airport and existing airstrips have relatively low levels of usage and could accommodate

planned and projected use. The 2030 General Plan is not expected to cause operation problems at airports.

Implementation of the 2030 General Plan would include policies and actions to maintain and improve the airport. Policies CIRC 2-6 and CIRC 2-7 are identified to improve and enhance air services. Policy CIRC 2-6 calls for the expansion of existing airports and seeking of State and Federal funding for facility expansion. Policy LU 3-27 encourages the compatibility of surrounding land uses and development, so as not to impede the existing and planned operation of public airports, while Policy CIRC 2-7 calls for establishing a use-based funding mechanism to support maintenance and improvement of the Colusa County Airport. The 2030 General Plan does not identify specific improvements to the airport or development associated with the airport and does not propose any changes to air traffic patterns. The 2030 General Plan would not change the location of air traffic; flight zones would be anticipated to remain the same under the 2030 General Plan. The 2030 General Plan would have a **less than significant** impact.

2030 GENERAL PLAN POLICIES THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CIRC 2-6: Promote the expansion and improvement of existing airport facilities. When there is a reasonable chance of approval, the County shall apply for available State and Federal aeronautics funds.

Policy CIRC 2-7: Establish a use-based funding mechanism to support maintenance and improvement of the Colusa County Airport.

Policy LU 3-27: Maintain the compatibility of surrounding land uses and development, so as not to impede the existing and planned operation of public airports, landfills and related facilities and community sewage treatment facilities.

Impact 3.8-8: Emergency Access (less than significant)

Development under the 2030 General Plan would result in increased development densities and intensities, result in new roadways, and would increase the number of users on the County's transportation system. There will be a need to ensure that adequate emergency access provisions are made to accommodate increased population and growth. Implementation of the Draft General Plan would result in LOS D or better operations on all study roadways, so is not expected to result in congestion that would impede emergency access.

The 2030 General Plan includes policies and actions to ensure that adequate emergency access is provided to serve growth and that existing emergency access conditions are improved. Emergency vehicles would incur little or no additional delay compared to current conditions. Policy CIRC 3-1 would ensure that roads are developed as all-weather facilities, to ensure accessibility during flood events. Policy CIRC 3-3 would ensure that future projects provide adequate access and features to accommodate evacuations and movement of people to critical services during emergency situations. Policies CIRC 3-6 and CIRC 3-7 specifically call for providing adequate access for emergency vehicles and access to emergency facilities and between major communities. Actions CIRC 1-D and 3-A would implement these policies. With implementation of the identified policies and actions, the 2030 General Plan would not result in inadequate emergency access. This impact is **less than significant**.

2030 GENERAL PLAN POLICIES AND ACTIONS THAT MITIGATE POTENTIAL IMPACTS

Policies

Policy CIRC 3-1: Ensure that roadway design standards include all-weather dual-purpose function, as appropriate, to increase capacity, improve safety, and enhance flood control.

Policy CIRC 3-3: Ensure that development, roadway, and planning projects include adequate access and features to accommodate evacuations and movement of people to critical services during emergency conditions.

Policy CIRC 3-6: Ensure adequate access for emergency vehicles.

Policy CIRC 3-7: Ensure adequate access to emergency facilities and between major communities.

Actions

Action CIRC 1-D: Review and revise roadway standards for community and rural areas to ensure that the standards are adequate to accommodate complete streets, addressing the following factors as applicable: number of travel lanes, lane width, medians, drainage control, shoulder width, parking lanes, bike lanes, fire and emergency response standards, curb and gutter design, landscaped strip and sidewalk width. The revised standards should also include a requirement for a 40-foot minimum easement width when creating an access easement or road when one or more parcels is to be accessed.

Action CIRC 3-A: Work with federal and state funding agencies to create a funding plan to implement improvements for emergency access, evacuation, fire protection, public safety, and drainage, and work with appropriate agencies to identify and prioritize projects.

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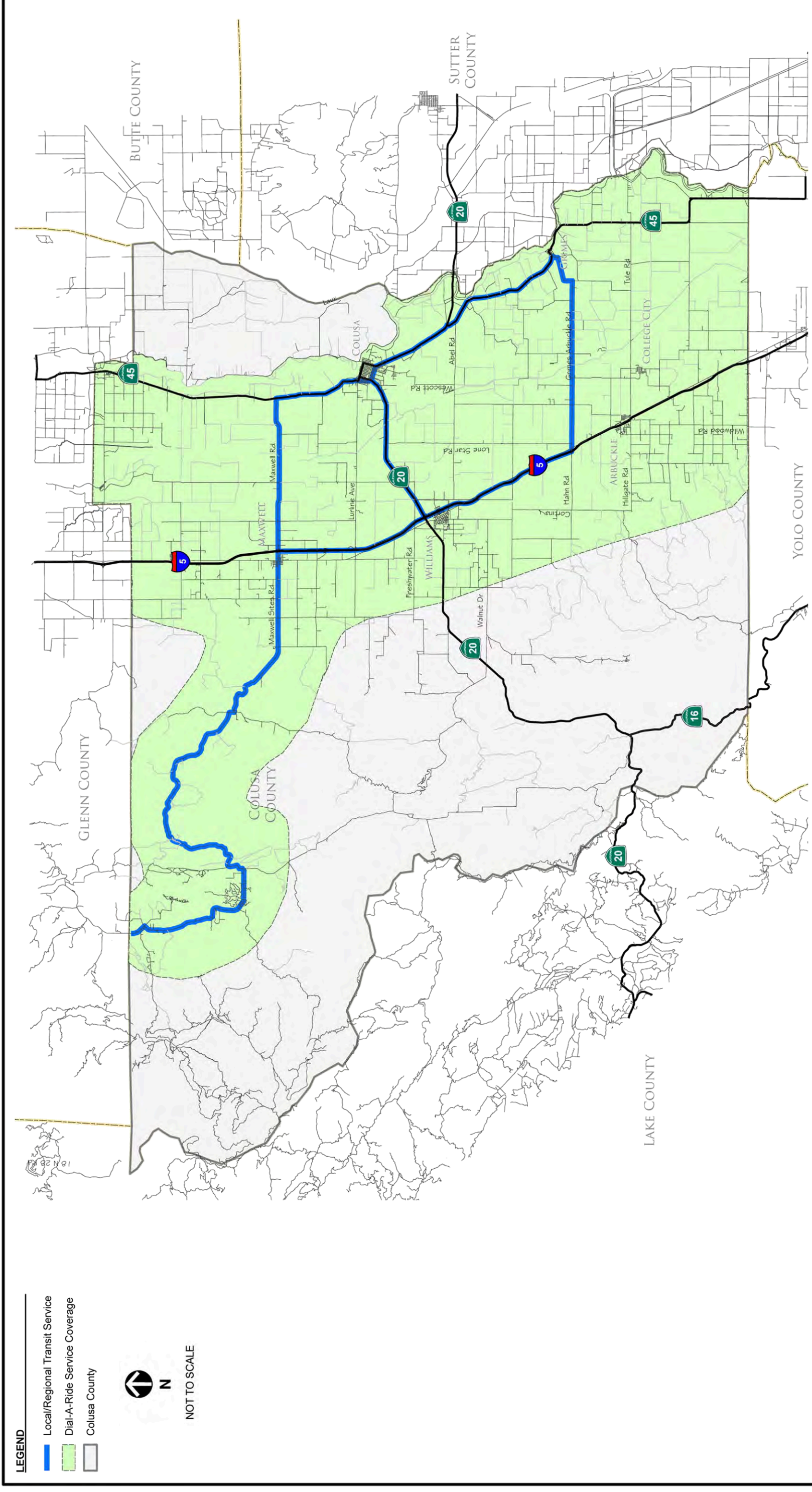
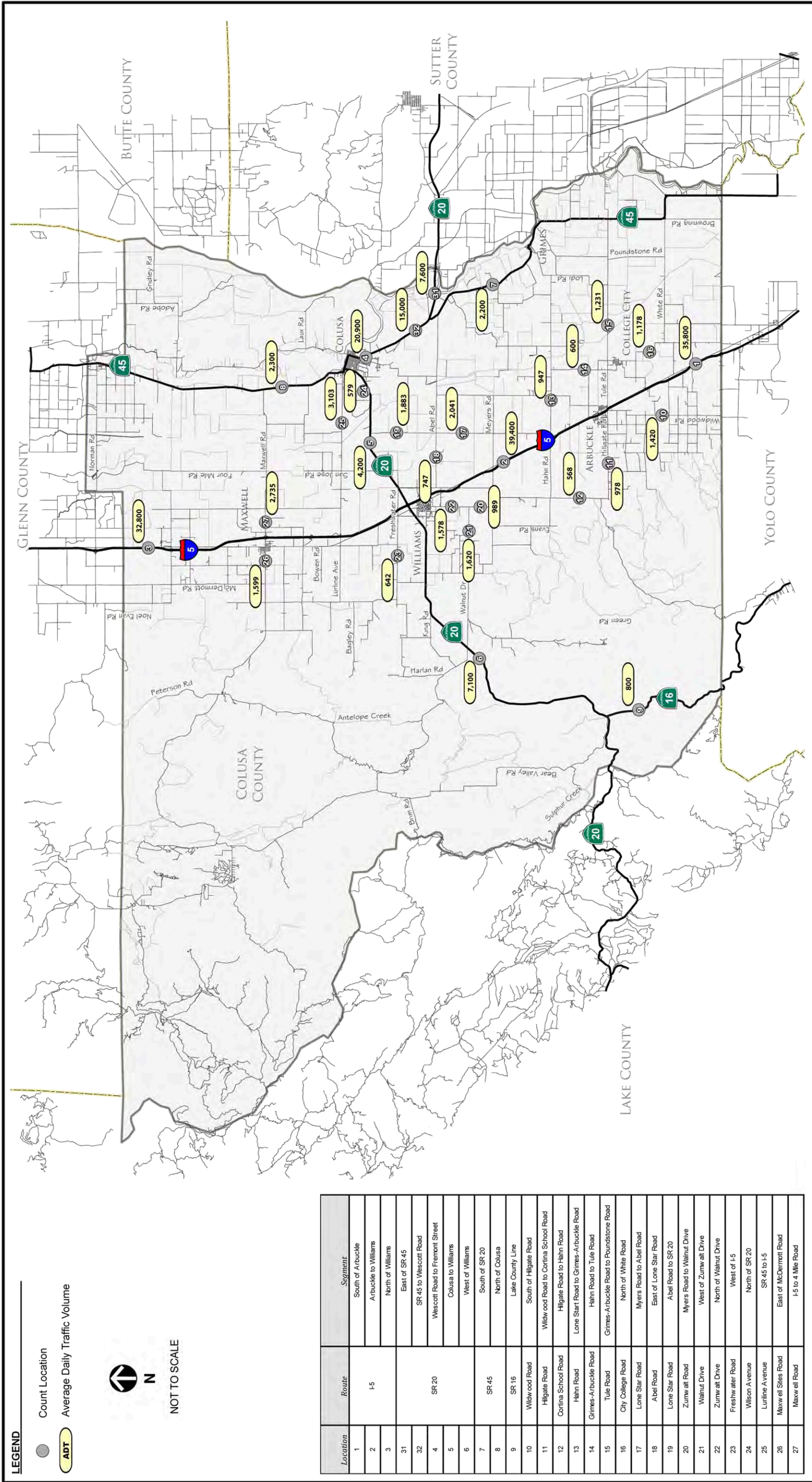


Figure 3.13-2
Major Transit Routes

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Location	Route	Segment
1	I-5	South of Arbuttle
2	I-5	Arbuttle to Williams
3	I-5	North of Williams
31	SR 45	East of SR 45
32	SR 45	SR 45 to Wescott Road
4	SR 20	Wescott Road to Fremont Street
5	SR 20	Colusa to Williams
6	SR 20	West of Williams
7	SR 20	South of SR 20
8	SR 45	North of Colusa
9	SR 16	Lake County Line
10	Widowood Road	South of Hilgate Road
11	Hilgate Road	Widowood Road to Cortina School Road
12	Cortina School Road	Hilgate Road to Hahn Road
13	Hahn Road	Lone Star Road to Grimes-Arbuttle Road
14	Grimes-Arbuttle Road	Hahn Road to Tule Road
15	Tule Road	Grimes-Arbuttle Road to Foundstone Road
16	City College Road	North of White Road
17	Lone Star Road	Myers Road to Abel Road
18	Abel Road	East of Lone Star Road
19	Lone Star Road	Abel Road to SR 20
20	Zumwalt Road	Myers Road to Walnut Drive
21	Walnut Drive	West of Zumwalt Drive
22	Zumwalt Drive	North of Walnut Drive
23	Freshwater Road	West of I-5
24	Wilson Avenue	North of SR 20
25	Lurline Avenue	SR 45 to I-5
26	Maxwell Sites Road	East of McDermott Road
27	Maxwell Road	I-5 to 4 Mile Road

Figure 3.13-3
 Existing Average Daily Traffic Volumes

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LEGEND

● Count Location

ADT Average Daily Traffic Volume



NOT TO SCALE

Location	Route	Segment
1	I-5	South of Arbutle
2		Arbutle to Williams
3		North of Williams
31	SR 20	East of SR 45
32		SR 45 to Vescoff Road
4		Vescoff Road to Fremont Street
5		Colusa to Williams
6	SR 45	West of Williams
7		South of SR 20
8	SR 16	North of Colusa
9		Lake County Line
10		Willowood Road
11		Hilgate Road
12		Corlina School Road
13		Hahn Road
14		Grimes-Arbutle Road
15		Tule Road
16		City College Road
17		Lone Star Road
18	SR 45 to I-5	Abel Road
19		East of Lone Star Road
20	SR 16	Abel Road to SR 20
21		Myers Road to Walnut Drive
22	SR 45 to I-5	West of Zumwalt Drive
23		North of Walnut Drive
24		West of I-5
25	SR 45 to I-5	North of SR 20
26		Lurline Avenue
27		East of McDermott Road

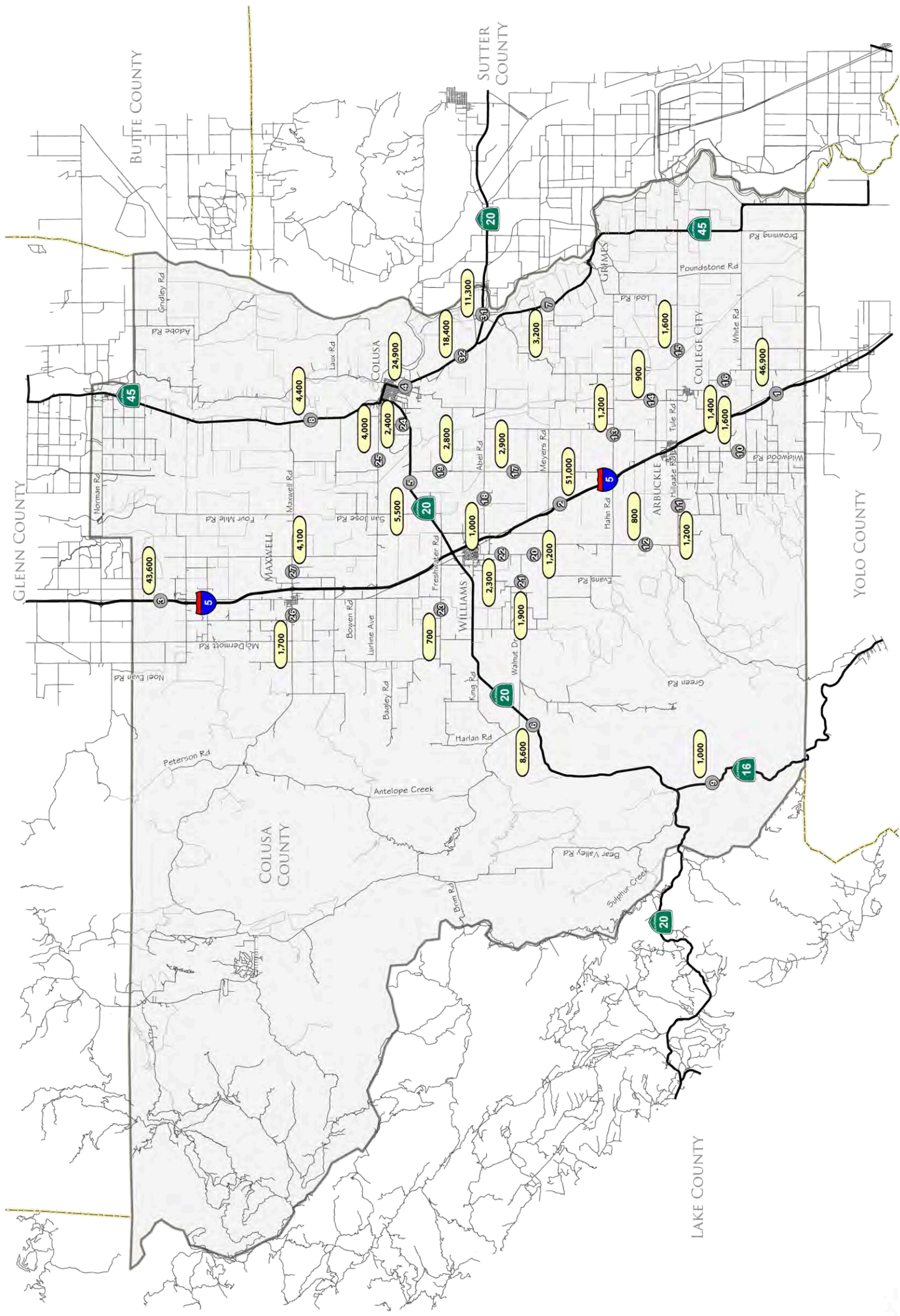


Figure 3.13-4
2030 Average Daily Traffic Volumes

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Utilities are critical to providing safe drinking water, disposal and treatment of wastewater, and solid waste disposal. This section provides a background discussion of the utility systems in Colusa County including water supplies, wastewater, and solid waste. This section is organized with an existing setting, regulatory setting, and impact analysis. One comment was received regarding utilities during the Notice of Preparation scoping process. The Colusa Local Agency Formation Commission (LAFCO) requested that the Draft EIR include an analysis of potential impacts to agricultural lands, as well as potential impacts to established service providers (such as water and wastewater providers).

3.14.1 WATER SUPPLIES

Water supplied to Colusa County comes from two sources: groundwater and surface water. All domestic water systems in the County are supplied with groundwater, while most irrigation systems are supplied with surface water from the Tehama-Colusa or Glenn-Colusa Canals, the Colusa Drain, or the Sacramento River. The surface water supplies available for use in Colusa County are significant. Surface water is used on 74 to 86 percent of the irrigated land within the Sacramento Valley portion of the County. Whereas, groundwater is used on 10 to 22 percent of that land. Of the land where groundwater is used, 6 to 11 percent is not within the service area of any organized entity (Colusa County Groundwater Management Plan, 2008).

There are community water systems located in Arbuckle, Maxwell, Princeton, Grimes, Stonyford, and the Cities of Colusa and Williams. There are also numerous private groundwater wells located throughout the County that serve individual parcels throughout the unincorporated areas of the County.

A detailed description of hydrology issues relevant to Colusa County, including key terms, groundwater basins, relationship between groundwater and geology, groundwater levels, groundwater quality, groundwater infrastructure, surface water bodies, surface water supply contracts, and surface water quality, is provided in Chapter 3.9.

WATER USE

Annual water use in Colusa County is approximately 1,070,730 AFY, as described below.

Agricultural Water Use: Agricultural uses in Colusa County use approximately 1,066,000 acre-feet of water annually; only 16 percent of this water is applied to land for which no organized entity exists for water management. During a dry year, the applied water could increase by about 40,000 acre-feet for the same crop mix. Surface water accounts for approximately 80 percent of total agricultural water use, while groundwater comprises approximately 20 percent of agricultural water use. With approximately 501,941 harvested acres of agricultural land (based on the highest amount of harvested acreage from 1995 to 2008) the average annual water use is 2.12 acre-feet of water per acre of cropland.

Urban/Community Water Use: Water for urban and community use in Colusa County is solely from groundwater. In 2010, approximately 7,555 persons lived in or near established communities

and used approximately 3,736 acre-feet of water per year. This amount represents less than 1 percent of the total applied water for agriculture, and less than 3 percent of the estimated groundwater use for agriculture.

Rural/Domestic: The population residing outside a city or community is estimated to be about 2,761. This population uses groundwater entirely, and is estimated to use about 994 acre-feet annually.

For the purposes of the General Plan update, some of the land surrounding the urbanized area of a community was included as part of the population calculation of the community; this has resulted in a higher population in communities and a lower rural/domestic population than shown in the 2008 GMP. However, the total combined water use of the urban/community and rural/domestic areas is unchanged.

DOMESTIC WATER SYSTEMS

Arbuckle Public Utility District

The Arbuckle Public Utility District provides domestic water service to 820 connections, or a population of approximately 2,500. Arbuckle has four groundwater wells, but generally only runs one or two at a time. The most recent well was drilled in 2008. The average amount of water pumped each day is approximately one MG, with a yearly total of approximately 350 MG. Total pumping capacity is 3.6 MGD. Most of the original pipes have been replaced with AC pipes, though some small ductile iron pipes remain in use. The distribution system consists of mostly 6-inch, 8-inch, and 10-inch pipes. Water is treated with chlorine at the wellheads as it is pumped out of the ground. There are no major problems with the system and there are no planned upgrades or changes. The most recent change in the system was the addition of the new well in 2008 (Scheimer, 2009).

The current system has the capacity to pump an additional 2.6 MGD above existing pumping levels. This additional pumping capacity is adequate to serve approximately 2,132 additional connections without making any significant upgrades to the system. The existing water distribution infrastructure is in good working order (Scheimer, 2009).

Colusa County Waterworks District #1

The Colusa County Waterworks District #1 provides potable water to 100 residential connections, five commercial connections, and one agricultural connection in the community of Grimes. The District has one primary well 223 feet deep, and one back-up well. The District provides approximately 36 MG of water annually. July is the peak flow month with five MG. The water supply infrastructure in the District is comprised of pipes ranging in size from 2-inch to 8-inch diameter. While the 2-inch pipes are generally PVC or metal, the larger pipes are generally AC. Water is treated with sodium hypochlorite for Coliform bacteria. The Colusa County Waterworks District #1 also provides water to 10 fire hydrants as part of an agreement with the Sacramento River Fire Protection District. However, this water is not sufficient to maintain fire flows and the

Sacramento River Fire Protection District must also rely on water tenders to help achieve adequate supply.

On February 5, 2009 the Colusa County LAFCO Executive Officer presented a staff report to the LAFCO Commission regarding the Municipal Service Review (MSR) and Sphere of Influence (SOI) Update for services provided by Colusa County Waterworks District #1. The MSR concluded that the proposed SOI will support planned land uses shown in the Colusa County General Plan and Zoning Code. The MSR further identifies the need for future upgrades to the water distribution system, and the establishment of a fee program to fund future infrastructure upgrades in order to ensure that adequate water is available in the future. Based on the LAFCO analysis of the water availability in the 2009 MSR, there are adequate supplies available to meet projected residential growth in this area, consistent with the County General Plan Land Use designations.

Maxwell Public Utilities District

The Maxwell Public Utilities District receives all water for municipal purposes from groundwater sources. The District pumps with a total of three wells, Well 1, Well 4 and Well 5 (Well 5 came online in 1997). The District has an elevated steel storage tank with a 100,000-gallon storage capacity.

The District's three wells have the following capacities (1998 Department of Health Services Annual Inspection):

- Well 1 @ 250 GPM
- Well 4 @ 550 GPM (has limitations for drinking water)
- Well 5 @ 425 GPM

Total: 1,225 GPM maximum pumping capacity although the District cannot run Well 4 which is 550 GPM capacity in series with running Well 5.

The District's sources produce 1,225 GPM (of which 550 GPM meets drinking water standards but has an undesirable odor), well above the District's annual, monthly and peak day demand of 119.17 MG, 17.05 MG, and .64 MGD respectively. The District serves 402 connections (residential, commercial, and agricultural) for a total service population of approximately 1,000 people. Peak water usage is 1,384 GPD per Equivalent Dwelling Unit (GPD/EDU). Maximum daily pumping capacity is 2,016,000 GPD compared to an average daily pumping demand of 326,493 GPD. Demand is well below the District's source capacity.

The District's distribution system is set in a grid pattern with approximately seven dead-ends (1998 Department of Health Services Annual Inspection Report). The District's water system was upgraded in 1983. The system is composed entirely of C-900 PVC pipe ranging from 4-inch up to 8-inch installed (C-900 PVC) with cast-iron valves, new hydrants, and metering equipment. The District has a main pressure zone with approximately 52 to 54 pounds per square inch (psi) at all times. The District has four backflow prevention devices on the system. The distribution system is properly maintained and is in good working order.

In order to meet the increased demand that would be generated through development of the residential parcels identified in the existing General Plan land use map, the District would need to add one or two new wells to the system. Additionally, new development sites would need to extend conveyance infrastructure to the site. The District has already begun engineering work and studies to establish a new well (Well #6). It is feasible that this new well could be online and operational within 1-2 years.

Princeton Water Works District

The Princeton Water Works District provides water service to approximately 110 residential and commercial customers. The District extracts groundwater from two different wells, drilled in 1984. The South Well is the principal well (utilized 90 percent of the time) and is equipped with a 20-horse power motor. This well was drilled to 307 feet bgs, with a 12-inch casing and a pumping capacity of 200 GPM. The North Well is predominantly used as an emergency well when the South Well is at or near capacity. The North Well has a pumping capacity of 120 GPM. Each well is equipped with an 1,800-gallon hydro-pneumatic pressure storage tank and auto-chlorination system (LAFCO, 2007).

The District pumps 50,000 GPD in winter months and between 250,000 and 280,000 GPD in the summer months. The District is able to meet peak water usage of up to 300,000 GPD during high demand periods. The average peak water usage is 2,545 GPD (LAFCO, 2007).

The initial distribution system infrastructure consisted of 4-inch welded Steel Pipe. The entire distribution system was reconstructed in 1984 with a combination of 4-inch (3,320 feet), 6-inch (6,050 feet) and 8-inch (2,100 feet) AC pipe. The distribution system is currently in good working order (LAFCO, 2007). Each well has a 1600-gallon pressure tank and chlorination system for a total combined storage of 3,200 gallons. The District's water pressure usually fluctuates between 45 to 65 psi (LAFCO, 2007).

The District has adequate water capacity from two wells to serve the 110 existing connections (residential, schools and commercial) with average demands of 50,000 to 60,000 GPD in winter months, and 250,000 to 280,000 GPD in the summer months. According to the District, it can meet peak demands of up to 300,000 GPD, which is below the District's capacity of 320 GPM. At 320 GPM, at peak flows, the District can pump up to 460,800 gallons per day (LAFCO, 2007).

With respect to the number of additional connections, during peak summer usage days, a remaining pumping capacity of 180,800 GPD ($460,800 - 280,000 = 180,800$) could support up to 71 more water connections (assuming current water usage of 2545 GPD, which is based on a peak usage of 280,000 divided by the number of connections being 110) (LAFCO, 2007). If more than 71 additional connections were required, the District would need to explore the possibility of adding new wells to the system. Groundwater levels in the area would support additional pumping from new wells.

Stonyford Water District

The Stonyford Water District is a County Service Area (CSA #2), formed in 1983, and serves the community of Stonyford. CSA #2 was formed in response to water supply shortages and concerns over groundwater contamination in the existing groundwater system. The water system was upgraded in 2007-2008 to include a \$1.1 million water infiltration system. There are approximately 60 municipal hookups on the Stonyford system, 55 of which are private residences and five are allocated to the U.S. Forest Service. Water is drawn from two local wells, one of which serves as a backup to the primary well. The main well has a pumping capacity of 20 GPM, and both the main well and the backup well are in generally good condition. A 75,000 gallon containment tank is located adjacent to the main well, and a 300,000 gallon storage tank is located south of Stonyford, near the landfill. Water from the 300,000 gallon storage tank is conveyed from the tank to the municipal distribution system via a system of 8-inch and 10-inch lines that feed into the 3-inch and 4-inch lines that connect directly to users. The larger distribution lines are relatively new and are in good condition, however, the smaller municipal conveyance lines are aging and in need of repair and upgrade.

Although water for the Stonyford system is pumped from the ground via wells, it has been determined by DWR and the federal government that the water pumped from the ground is hydrogeologically connected to Stony Creek, and is therefore, classified as a surface water source. The Stonyford water system is allocated up to 40 acre-feet/year of water from this source. The allocation between October 1 and May 31 is 30 acre-feet and the allocation between June 1 and September 31 is 10 acre-feet. The system has historically exceeded this allocation. However, once a tiered pricing system for water use was implemented there have not been exceedences of this allocation. The allocation of water to the Stonyford system is administered by the Federal Water Master, based in Orland, CA. New municipal hookups and the drilling of new wells require approval from the Federal Water Master and a review committee, and applications are reviewed on a case-by-case basis. In general, the current hookups use the majority of the annual water allocation, and growth in the area is constrained by the 40 acre-feet/year annual allocation (Hackney, 2009).

Century Ranch

The Century Ranch Subdivision, developed in the mid-1960's, is located in northwest Colusa County, south of the East Park Reservoir. Groundwater supplies in this portion of the County are very limited. Wells drilled in this area typically encounter hard rock formations without significant water storage or availability. Certain wells at Century Ranch are placed in, or near, the creek bed of Little Stony Creek, and collect underflow from the Creek.

From the outset, water source capacity has been a critical problem for the Century Ranch Subdivision. Water shortages during peak summer and early fall demand periods have been an annual concern, and have necessitated severe water restrictions and water conservation mandates in dry years (i.e., a ban on all outdoor water use during these critical months). Despite these concerns, the already critical source capacity situation worsened through the early 1990's as the Century Water Company continued to add new service connections. In response to the Company's noncompliance with California Health and Safety Code requirements to provide a reliable and

adequate supply of potable drinking water, the California Department of Health Services issued a compliance order in 1994, which imposed a service connection moratorium on the Century Ranch Water Company and its successors and assignees.

In 1996 Colusa County acquired ownership of the Century Ranch water system, and designated it County Service Area No. 1 (CSA #1). The County has taken steps to try to solve the critical water shortage problems faced by this water system, however, these actions have been largely unsuccessful. In 1998, with funding from the State's Safe Drinking Water Bond Law program, certain improvements were made to the Century Ranch water system. These improvements included a new 250,000 gallon bolted steel tank and the construction of Well No. 7, which is equipped with a 50 GPM pump. However, like other wells at Century Ranch, its ability to provide adequate water during the late summer and early fall months is very limited, and it has added no significant source capacity to the water system. The County has a 20-year contract with the USBR for approximately 90 afy, but only uses approximately 24 afy due to the lack of adequate available supply for the area.

In the summer months of 2001, with funding assistance from the California Emergency Clean Water Grant program, the County added an 80 GPM bag and cartridge system and made disinfection improvements to allow the use of surface water, collected as underflow from Little Stony Creek. While the use of this surface water has provided an additional approved source for the Century Ranch water system, the ability to capture underflow decreases significantly in late summer and early fall. In very dry years the underflow has reportedly decreased to the point that no significant quantities of water can be taken from Little Stony Creek. During drought condition years both the underflow in Little Stony Creek and the groundwater supplies are known to approach failure simultaneously. Thus, while the operation of the surface water treatment facilities does allow reduced usage of well sources, its net effect on the overall supply capacity is insufficient to ensure an adequate, reliable water supply. New residential units cannot be constructed in Century Ranch until new, long-term, and reliable supplies of water are found to serve the area.

City of Colusa

The City of Colusa provides potable water within the city limits, as well as the following areas outside of its boundaries: the Lurline Avenue area, the area east of Bridge Street, and restrooms at Moon Bend Road. The Walnut Ranch development, which is located in the City's SOI, currently receives water from the Del Oro Water Company. However, the analysis in the City's 2009 Water Master Plan assumes that this area will eventually receive treated water from the City. As described in the City's 2009 Water Master Plan (Eco:Logic, 2009), the City's well network has been gradually expanded over the years and now consists of five wells and a distribution system. The City relies on three of its wells to meet day-to-day demands and utilizes the two other wells as back-up supply. Two elevated tanks provide 0.25 MG of storage which supplements peak demands and maintains system pressure.

As of 2006, there were 2,126 active water service connections within the City. Of these connections, 1,914 were for residential customers, 195 were for commercial/institutional

customers, and the remainder for industrial and other users. All water used by the City comes from five wells. The depth of these wells exceeds 200 feet bgs, and each well is encased with a deep-water sanitary seal for a minimum of 50 feet to prevent infiltration. Water is treated with chlorine after it is pumped out of the ground and before it is conveyed to users.

The current well capacity with all wells operating simultaneously is approximately 7.0 MGD; however, the reliable well capacity is 4.9 MGD which is based on the largest well being out of service. The storage tanks provide about 1.2 MGD, and increase the total reliable system capacity to 6.1 MGD. As described in the 2009 Water Master Plan, the current peak hour demand for existing customers is approximately 5.8 MGD. The peak hour demand of 5.8 MGD can be reliably supplied with the capacity from the storage tank and four wells (6.1 MGD), with the largest well out of service.

The 2009 Water Master Plan includes an analysis of water demand associated with full buildout of the City's SOI. The Water Master Plan estimates that full buildout of the SOI will require an average of 6.8 MGD and a maximum day demand of 18.6 MGD.

Water supply, treatment, storage, pumping and distribution improvements have been identified in the Water Master Plan to meet future water demands and to correct existing deficiencies within the current system.

Remedies to eliminate existing deficiencies include providing additional source capacity through construction of two new wells with treatment, adding sequestering to Wells 4, 5, and 6 if needed, and eliminating the small diameter pipelines in the downtown area. Improvements to increase system capacity to serve future growth include provision of additional wells with treatment and extension of the distribution system. Additional storage and a booster pump stations may also be necessary depending on the capacity of future wells.

Distribution system improvements were developed to serve future growth. The most prominent feature of the future distribution system expansion is the construction of an outer loop around the City comprised of 12-inch diameter pipelines. The outer loop interconnects with existing pipelines to create further looping within the system, which increases operational flexibility and fire flows. The pipelines have been sized so that future wells or tanks/booster pumps can be anywhere on the perimeter and maintain flows, which will allow flexibility as future improvements are sited.

Future source capacity will be provided from new wells throughout the system. Future wells are expected to provide at least 1,300 GPM, but capacities could be higher. Seven new wells will be needed to serve future growth. If future wells have higher capacity, then fewer wells will be needed. New storage and pumping facilities may be included at some point in the future to reduce the number of new wells and treatment systems needed, but should be delayed until the capacity of new wells is determined. The Colusa Water Master Plan identifies the location of new conveyance infrastructure and well locations that would adequately serve full buildout of the SOI.

The Water Master Plan includes a proposed water serve connection charge for new development within the City's water service area.

In summary, the City of Colusa has adequate water supplies and distribution infrastructure to meet existing demand for potable water. The Water Master Plan includes specific and detailed measures to increase water supplies to meet full buildout of the SOI. The Water Master Plan includes specific measures to amend the current water fee program and increase connection charges in order to fund the identified improvements to meet water demand for full buildout of the SOI. The City's water distribution system has been designed to provide for maximum flexibility regarding the location of new wells and connections to the water distribution system that runs around the perimeter of the City. New residential growth in the SOI would occur in close proximity to existing water conveyance infrastructure. New residential development would be able to connect to the existing distribution system along the boundary of the city limits without the need to construct significant new conveyance infrastructure. By implementing the improvements identified in the Water Master Plan, the City of Colusa would ensure adequate supplies are available to meet new residential growth within the SOI. This does not pose a constraint to the development of housing within the Colusa SOI.

City of Williams

The City of Williams provides water service to 1,245 connections. The majority of these connections are residential. Only eight connections are outside of the city boundaries, in the unincorporated area of Colusa County. In 2008, water usage totaled 2,085,711 gallons. The City of Williams Public Works Department operates and maintains the water system. The system includes five wells, three of which are active while the other two wells are for stand-by only. The total capacity of all five wells totals 3,050 GPM. The system includes one 100,000 gallon water storage tank, but more storage capacity is needed. The average water usage is 13.5 MG per month. Peak usage in the summer is .814 MGD and 20.7 MG per month. Using Well 5 exclusively, the City could pump 1.7 MGD or .9 MG more than the current day usage (LAFCO, 2007). Two additional wells at the Plank Industrial Park can each produce 2000 GPM, equivalent to 5.7 MGD.

The City's water distribution system consists of approximately 69,000 linear feet of 6-inch to 12-inch diameter pipeline. Approximately 15 percent of the distribution system was replaced in 1996, which eliminated undersized and failing pipeline. The existing water distribution system provides sufficient domestic and fire flows to the City. The City continues to upgrade the water distribution system as funding becomes available.

REGULATORY SETTING – WATER SUPPLIES

STATE

California Department of Health Services

The Department of Health Services, Division of Drinking Water and Environmental Management, oversees the Drinking Water Program. The Drinking Water Program regulates public water systems and certifies drinking water treatment and distribution operators. It provides support for small water systems and for improving their technical, managerial, and financial capacity. It provides subsidized funding for water system improvements under the State Revolving Fund ("SRF") and Proposition 50 programs. The Drinking Water Program also oversees water recycling projects,

permits water treatment devices, supports and promotes water system security, and oversees the Drinking Water Treatment and Research Fund for MTBE and other oxygenates.

California Code of Regulations

California Code of Regulations (CCR) Title 22, Chapter 15, Article 20 requires all public water systems to prepare a Consumer Confidence Report for distribution to its customers and to the Department of Health Services. The Consumer Confidence Report provides information regarding the quality of potable water provided by the water system. It includes information on the sources of the water, any detected contaminants in the water, the maximum contaminants levels set by regulation, violations and actions taken to correct them, and opportunities for public participation in decisions that may affect the quality of the water provided.

Urban Water Management Planning Act

The Urban Water Management Planning Act has as its objectives the management of urban water demands and the efficient use of urban water. Under its provisions, every urban water supplier is required to prepare and adopt an urban water management plan. An “urban water supplier” is a public or private water supplier that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The plan must identify and quantify the existing and planned sources of water available to the supplier, quantify the projected water use for a period of 20 years, and describe the supplier’s water demand management measures. The urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Department of Water Resources must receive a copy of an adopted urban water management plan.

Senate Bill (SB) 610 and Assembly Bill (AB) 901

The State Legislature passed SB 610 and AB 901 in 2001. Both measures modified the Urban Water Management Planning Act.

SB 610 requires additional information in an urban water management plan if groundwater is identified as a source of water available to an urban water supplier. It also requires that the plan include a description of all water supply projects and programs that may be undertaken to meet total projected water use. SB 610 requires a city or county that determines a project is subject to CEQA to identify any public water system that may supply water to the project and to request identified public water systems to prepare a specified water supply assessment. The assessment must include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and water received in prior years pursuant to these entitlements, rights and contracts.

AB 901 requires an urban water management plan to include information, to the extent practicable, relating to the quality of existing sources of water available to an urban water supplier over given time periods. AB 901 also requires information on the manner in which water quality affects water management strategies and supply reliability. The bill requires a plan to describe

plans to supplement a water source that may not be available at a consistent level of use, to the extent practicable. Additional findings and declarations relating to water quality are required.

Senate Bill (SB) 221

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It also adds Government Code Section 66473.7, establishing detailed requirements for establishing whether a “sufficient water supply” exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring availability of a sufficient water supply. The applicable public water system must provide proof of availability. If there is no public water system, the city or county must undertake the analysis described in Government Code Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

LOCAL

Colusa County Groundwater Management Plan

Most of the information in the following sections was derived from the Colusa County Groundwater Management Plan (2008). The Groundwater Management Plan (GMP) covers the entirety of Colusa County and contains various groundwater management goals; Basin Management Objectives, which are measurable parameters or criteria related to data that can be scientifically collected; an Action Program, which includes specific actions that will be implemented to manage groundwater resources and to develop a better understanding of the groundwater resources; and a Groundwater Management Process, which should be followed in order to achieve the goals stated in the GMP. The GMP does not regulate the actions of procedures of water districts and non-County water providers within Colusa County.

Colusa County’s groundwater management goals represent the overarching intent of the County with regard to groundwater management. Basin Management Objectives and Management Actions must be consistent with these Groundwater Management Goals, and must contribute to achievement of the goals. Colusa County’s goals for groundwater management (as developed with input from the public through Plan Advisory Committee meetings, workshops, and surveys) are to:

- Ensure a Reliable Water Supply
- Ensure Long-Term Groundwater Sustainability
- Optimize Conjunctive Use of Surface Water and Groundwater
- Protect Water Rights
- Maintain Local Control
- Prevent Unnecessary Restrictions on Groundwater Use

COLUSA COUNTY CODE, CHAPTER 35: WELL STANDARDS

Chapter 35 of the Colusa County Code contains minimum requirements for the construction, reconstruction, repair, and destruction of water wells, cathodic protection wells, and monitoring wells. This section requires states that No person shall dig, bore, drill, deepen, modify, repair, or destroy a water well, cathodic protection well, observation well, monitoring well or any other excavation that may intersect ground water without first applying for and receiving a permit as provided in this ordinance unless exempted by law. Except as otherwise specified, the standards for the construction, repair, reconstruction, or destruction of wells shall be as set forth in the California Department of Water Resources Bulletin 74-81 "Water Well Standards, State of California" except as modified by subsequent revisions.

COLUSA COUNTY CODE, CHAPTER 43: GROUNDWATER MANAGEMENT ORDINANCE

The Colusa County Groundwater Management Ordinance states that it is essential for the protection of the health, welfare, and safety of the residents of the county, and the public benefit of the state, that groundwater resource of Colusa County be protected from harm resulting from the extraction of groundwater for use on lands outside the county, until such time as needed additional surface water supplies are obtained for use on lands of the county, or over-drafting is alleviated, to the satisfaction of the board. The county seeks to foster prudent water management practices to avoid significant adverse overdraft-related environmental, social, and economic impacts. It is therefore essential for the protection of the county's important groundwater resources that the county require a permit to extract groundwater for use outside the county. This chapter requires a permit for the export of groundwater outside the county and is not intended to regulate groundwater in any other way.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project may have a significant impact on the environment associated with Utilities if it would:

1. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
2. Have insufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements are needed.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-1: Increased Demand for Water Supply (Significant and Unavoidable)

Implementation of the 2030 General Plan would result in the need for additional water supply and associated infrastructure, including water treatment capacity, storage capacity, and conveyance facilities, to serve future growth.

Development under the 2030 General Plan could result in an increase of approximately 4,030 residents and 610,874 square feet of non-residential development during the planning horizon. In

3.14 UTILITIES

Colusa County, per capita water consumption averages 0.36 AFY, with a range from 0.21 to 0.42 AFY as shown in Table 3.14-1. The 2030 General Plan would accommodate a broad range of uses, so the use of a per capita figure is intended to provide an average figure that approximates the average water demand associated with the range of uses that could occur in each community with implementation of the 2030 General Plan.

As shown in Table 3.14-1, during the planning horizon, growth under the 2030 General Plan would increase the water need by up to 1,039 AFY. Since some future development will occur on irrigated farm land, some of the water demand associated with the 2030 General Plan would be off-set by the conversion of irrigated farm land to developed land. The water study conducted for the City of Colusa General Plan concluded that there would be a net decrease in water demand with development under the City's General Plan due to the higher rate of water use of agricultural lands than of developed urban lands (e.g., 100% of new water demand in the City and its planning area under the City of Colusa General Plan would be off-set by conversion from irrigated farmlands to urban development). On average, irrigated cropland in Colusa County uses 2.12 AFY. Some future urban uses, such as retail commercial uses, could require less than 2 AFY, while urban residential uses would generally require from 2 to 5 AFY, depending on the density of the project. Lower intensity urban uses would use less water than the average irrigated cropland in Colusa County, resulting in a 100% offset. Higher intensity uses would use more water and would typically have offsets of approximately 40% to 70%, depending on the specific use and intensity of the individual development project. For the purposes of this analysis, more conservative figures were used, ranging from 0% off-set in Stonyford-Lodoga to 50% off-set in the Colusa area, with a 25% off-set used in other areas.

TABLE 3.14-1: 2030 GENERAL PLAN – ANNUAL DOMESTIC WATER DEMAND (AFY)

UNINCORPORATED AREA	AVERAGE WATER USE PER CAPITA	2010		2030			
		POPULATION	WATER DEMAND	POPULATION GROWTH	INCREASE IN WATER DEMAND	AGRICULTURAL OFF-SET	NET INCREASE IN WATER DEMAND
Arbuckle	0.37	2,663	985	1,007	373	0.25	279
Colusa	0.32	1,625	520	594	190	0.5	95
Maxwell	0.4	1,294	518	937	375	0.25	281
Williams	0.21	323	68	323	68	0.25	51
Princeton	0.38	414	157	218	83	0.25	62
Grimes	0.38	364	138	41	15	0.25	12
College City	0.38	256	97	218	83	0.25	62
Stonyford-Lodoga	0.42	617	259	61	26	0	26
Rural/Other	0.36	2,761	994	631	227	0.25	170
Total	0.36	10,316	3,736	4,030	1,460	-	1,039

It is anticipated that groundwater would be the primary source for the 1,039 AFY of water necessary to supply development under the 2030 General Plan. While some of the water demand may be met by water rights transfers that would provide domestic water suppliers with surface water, the domestic water suppliers in Colusa County currently use groundwater only.

While significant increases in groundwater pumping could lower groundwater levels, cause subsidence, decrease groundwater quality, and affect surface water flow and quality, the change in pumping to accommodate 2030 General Plan development is not substantial. The increased water demand is less than 0.1 percent of the County's total water usage and would change groundwater pumping rates by less than 0.5 percent. While the increase in water usage would not be substantial at the County-wide level, there are areas of the County, particularly in the mountainous areas of the eastern County (e.g., Stonyford, Century Ranch, and Lodoga areas), where there is limited water supply to support new development at urban densities.

The GMP describes historical changes in groundwater levels, which have generally stabilized with increased surface water use over time, and also states that there has been 0.025 feet of seasonal elastic subsidence and no indication of any inelastic subsidence in the two years since DWR established its network of sensometers. The GMP provides measures to ensure continued pumping and extraction of groundwater can be conducted in a sustainable manner that would not adversely affect the groundwater basin. The GMP and the Groundwater Management Ordinance were adopted to ensure that groundwater could provide a reliable and sustainable long-term water source for Colusa County and to ensure that environmental effects associated with the use of groundwater would be minimized.

Future development and the related increase in demand for water supply would also require additional water wells, water diversion structures, water treatment facilities, and water conveyance infrastructure. In communities such as Arbuckle, the basic system and capacity is in place to accommodate growth. However, other communities, such as Princeton, Maxwell, Century Ranch, Stonyford, and Grimes, would require significant infrastructure improvements to accommodate growth during the planning period. The infrastructure and facilities necessary to serve new growth would involve development of some of these facilities on-site, some facilities off-site on appropriately designated land, and may also involve improvements to existing facilities and disturbance of existing rights-of-way. The specific impacts of providing new and expanded facilities cannot be determined at this time, as the 2030 General Plan does not propose development nor does it designate specific sites for new or expanded public facilities. Water supply facilities would be evaluated at a project-level in association with subsequent development projects. However, the facilities would be primarily provided on sites with land use designations that allow such uses and the environmental impacts of constructing and operating the governmental facilities would likely be similar to those associated with new development, redevelopment, and infrastructure projects under the 2030 General Plan, such as impacts associated with construction activities including air quality, drainage, and noise, and impacts associated with operation including traffic, noise, air quality, hazards, and land stability. These impacts would generally occur as described in the relevant chapters (Chapters 3.1 through 3.14, and 4.0) of this Draft EIR and as summarized in Table 3.14-2 below. Where potentially significant or significant impacts are identified, this Draft EIR identifies mitigation measures in the relevant chapter of this Draft EIR to reduce the impact and discloses which impacts cannot be reduced to a less than significant impact.

TABLE 3.14-2: TYPES OF POTENTIAL ENVIRONMENTAL IMPACTS THAT COULD BE CAUSED BY NEW WATER SUPPLY PROJECTS, WATER RIGHTS TRANSFERS, AND RELATED INFRASTRUCTURE

<i>TYPES OF POTENTIALLY AFFECTED RESOURCES</i>	<i>RELATED AND POTENTIAL IMPACTS</i>
Surface Water Hydrology	Changes in the magnitude and timing of flows in affected streams; changes in the level of affected reservoirs and lakes.
Geology and Soils	Increase in erosion and sedimentation from construction activities; change in sediment transport in streams; geologic hazards could cause problems for new facilities and their operators if they are not sited carefully.
Water Quality	Changes in stream and reservoir/lake temperature, dissolved oxygen, turbidity, total suspended solids, and other water quality parameters of concern during construction and operation of new facilities.
Fishery Resources including Special-status Species	Change in the amount and quality of fishery habitat in affect streams and reservoirs/lakes, and potential fish entrainment at possible diversion sites in lakes and streams.
Wetlands and Riparian Habitat	Changes in the amount or functions and values of various types of wetlands from the construction of new facilities, or in riparian areas from changes in the operation of reservoir/lakes and changes in streamflows. Riparian habitat could be affected by hydrology changes or new construction and is especially important habitat for wildlife and botanical species.
Botanical Resources including Special-status Species	Disturbance to rare plants and their habitat and other types of vegetation from construction activities or changes in hydrology along streams and at reservoirs and lakes.
Wildlife Resources including Special-status Species	Changes in the amount and quality of affected wildlife habitat near affected reservoir/lakes, and streams and where appurtenant facilities would be located.
Recreation	Changes in the quantity or quality of recreation opportunities, including fishing, boating, hiking, and rafting in affected reservoirs/lakes and in affected streams; some impacts could also occur during construction and operation of new conveyance, treatment, storage, and pumping facilities.
Visual Resources	Changes in reservoir/lake levels, and streamflows and the addition of new project facilities could affect the visual environment. New pipelines, pumping stations, or transmission lines near or in residential areas or highly visited areas would cause negative impacts.
Agriculture	Some irrigated land or grazing land could be taken out of production where project conveyance facilities need to be located and to accommodate growth. The availability of surface water supplies for agricultural uses could increase.
Cultural Resources	Historic, prehistoric, and ethnographic resources could be affected by hydrology changes or the construction and maintenance of new facilities.
Compatibility with Existing Land Uses and Other Policies and Plans	Some new project facilities may not be compatible with surrounding land uses, or may be inconsistent with related federal, state, tribal, and local plans and policies (including those of the U.S. Forest Service, USFWS, and California Department of Fish and Game).
Mineral Resources	New project facilities could interfere with the extraction of minerals at known or yet-

TABLE 3.14-2: TYPES OF POTENTIAL ENVIRONMENTAL IMPACTS THAT COULD BE CAUSED BY NEW WATER SUPPLY PROJECTS, WATER RIGHTS TRANSFERS, AND RELATED INFRASTRUCTURE

<i>TYPES OF POTENTIALLY AFFECTED RESOURCES</i>	<i>RELATED AND POTENTIAL IMPACTS</i>
	to-be-discovered mineral sites.
Public Utilities	The routing and siting of new project facilities could interfere with the operation or maintenance of existing or planned public utilities, including communication and energy infrastructure.
Socioeconomic Resources	Customers of the water purveyors and other would enjoy the socioeconomic benefits associated with a more reliable water supply and related economic growth. Water rates would likely increase to help pay for new facilities. Facility construction would cause short-term and beneficial employment and income impacts. Energy or mineral impacts would also cause related socioeconomic effects.
Air Quality and Noise	Air emissions from construction equipment and traffic and loud noises could occur during the construction phase of new projects. New pumping stations would likely cause adverse noise impacts for nearby residents and recreationists.
Transportation	Local roads would experience traffic increases during construction.
Public Health and Safety	Construction activities could create some safety hazards.
Growth-inducing Effects	New system infrastructure and water supply projects would likely cause growth-inducing impacts.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County’s General Plan, Zoning Ordinance, the Groundwater Management Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The 2030 General Plan includes policies and actions designed to ensure an adequate water supply for development and to minimize the potential adverse effects of increased water use. Policy PSF 1-2 requires that development, infrastructure, and other projects that will result in increased water demand to demonstrate adequate water supply as well as address any cumulative impacts to water users and on the environment. Policy PSF 1-3 requires coordination with water providers to manage water supplies in order to avoid groundwater overdraft, water quality degradation, and other adverse environmental impacts. Policy CON 1-33 requires development projects to incorporate best management practices and water conservation measures to reduce water demand. Policy CON 1-35 encourages use of water conservation measures by existing businesses, agricultural operations, and residences. Policies CON 1-29, 1-30, and PSF 1-5 encourage development of new and reliable sources of water. Policy PSF 1-6 supports efforts to restructure rates in order to fund necessary system improvements and maintenance. Policies PSF 1-9 and 1-10 address the timing of water system improvements to ensure that planned and prioritized development can be accommodated. Actions CON 1-G through 1-I and PSF 1-A through 1-K

implement the General Plan policies and requires adoption of a water efficient landscaping ordinance which would reduce water demands associated with residential, park, recreational, and commercial uses. Action CON 1-H requires that the policies, actions, and BMOs in the GMP would continue to be implemented.

While implementation of the 2030 General Plan, the County's Zoning Ordinance, and the County's Groundwater Management Ordinance would ensure that new development is only approved if there is adequate water supply and measures are implemented to reduce water demand, there would still exist the potential for adverse environmental effects associated with water usage, through increased groundwater pumping or future surface water diversions, to serve development in specific areas over the life of the General Plan. While the specific well sites and potential diversion locations are not known, increased water usage could result in adverse impacts groundwater levels, groundwater quality, surface water quality, surface water levels, and land stability (e.g., subsidence), including those effects described in Table 3.14-2. The only measure that would fully mitigate this impact would be to allow a minimal amount of new development, which is not consistent with the goals of the 2030 General Plan update project. Therefore, this impact is considered **significant and unavoidable**.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy CON 1-29: Support water development, treatment, and storage projects that are needed to meet existing and future local and regional demand.

Policy CON 1-30: Ensure that regional, state, and federal water projects, including proposed Sites Reservoir, protect local water rights and areas of origin.

Policy CON 1-31: Encourage municipal water purveyors to install water meters and abandon flat-fee water use rate structures where feasible.

Policy CON 1-32: Demonstrate leadership in water conservation by including water-efficient plumbing and landscaping at all new County facilities, and by reducing the County's own water use to the extent possible.

Policy CON 1-33: Require new development and expansion of existing uses to incorporate best management practices for water use and include water conservation measures.

Policy CON 1-34: Encourage the use of water conservation measures for agriculture and in existing residences and businesses.

Policy CON 1-35: Encourage the use of water conservation measures, including low flow plumbing that exceeds state requirements; reclaimed wastewater for non-potable uses; dual plumbing that allows grey water from showers, sinks, and washers to be reused for landscape irrigation in new developments; and native and drought-tolerant landscaping.

Policy PSF 1-1: Encourage and support the expansion of municipal water systems to areas identified for current or future development and growth on the General Plan land use map.

Policy PSF 1-2: Prior to the approval of development, infrastructure, Specific Plans, or other projects that would result in increased demand for public water conveyance and treatment, projects must demonstrate proof of adequate water supply (e.g., that existing services are adequate to accommodate the increased demand, or improvements to the capacity of the system to meet increased demand will be made prior to project implementation), and that potential cumulative impacts to water users and the environment will be addressed.

Policy PSF 1-3: Coordinate with water providers throughout the County to manage water supplies in a way that ensures adequate supplies for existing residents, agricultural uses, and businesses, and for projected growth, and avoids groundwater overdraft, water quality degradation and other adverse environmental impacts.

Policy PSF 1-4: Municipal water and wastewater services should only be extended to lands designated Urban Reserve Area if the following conditions are met:

- 1. The majority of the adjacent designated urban residential and commercial lands have been built out or are planned for build out,*
- 2. The extension of services would not facilitate creation of an island of urban uses in a rural or agricultural area,*
- 3. The extension of services would not facilitate leapfrog development, and*
- 4. A master or specific plan has been prepared for the lands requesting access to a municipal water and wastewater system.*

Policy PSF 1-5: Facilitate, and to the extent feasible, assist with the development of new and reliable sources of water, consistent with County land use plans and regional water needs.

Policy PSF 1-6: Support efforts by public water service providers to increase or restructure rates in order to increase available funding for necessary system improvements, upgrades and maintenance.

Policy PSF 1-7: Priority is given to serving existing water uses over new water uses.

Policy PSF 1-8: Require proof of an adequate (as defined by the County Environmental Health Division) potable water supply to serve the entire project prior to approval of any division of land or use permit.

Policy PSF 1-9: Make every effort to ensure that infrastructure is planned and available in a timely manner to accommodate development that supports the County's economic needs.

Policy PSF 1-10: Prioritize water system improvements to areas prioritized for economic growth (commercial and industrial development as well as related housing) in the next 5-10 years.

Policy PSF 1-11: New residential development on parcels two acres in size or smaller shall be required to connect to a public water system, with the exception of existing Rural Residential and Rural Service Center parcels which may be allowed to have an on-site well if approved by the County Department of Environmental Health.

3.14 UTILITIES

Policy PSF 1-12: Require a public facilities financing plan for development projects that will not adequately be served by existing and planned infrastructure and facilities and/or those improvements identified in the County's Capital Improvement Program that are funded through the County's development impact fee program. The financing plan shall identify needed public improvements and shall include a plan to pay for and develop the required public improvements.

Actions

Action CON 1-G: Adopt a Water Efficient Landscaping Ordinance for residential, park, recreational, and commercial uses, based on the state model ordinance as amended to address local concerns. The ordinance should address:

- 1. Water-efficient landscape designs using low water-use plants.*
- 2. Efficient irrigation systems.*
- 3. Minimized turf areas.*
- 4. Soil improvements and mulch.*
- 5. Regular maintenance and adjustment of irrigation systems.*
- 6. Scheduling irrigation during early or late hours.*
- 7. Water budgeting, when necessary.*
- 8. Education of residents, customers and employees regarding the importance of efficient water use.*

Action CON 1-H: Continue to implement the policies, actions, and Basin Management Objectives (BMOs) contained in the Colusa County Groundwater Management Plan.

Action CON 1-I: Continue to cooperate with Butte, Glenn, Tehama, Shasta and Sutter Counties through the Northern Sacramento Valley Integrated Regional Water Management Group, and continue to foster regional cooperation with other counties and water purveyors.

Action PSF 1-A: Coordinate with local water and wastewater agencies to assist in planning for adequate public services to support new residential, commercial, and industrial development in existing community areas. Particular effort shall be made to provide adequate infrastructure to accommodate the commercial, mixed use, industrial, R-2, R-3, and R-4 sites in Arbuckle, Maxwell, Princeton, and the unincorporated area of Colusa and commercial and industrial sites in the unincorporated area of Williams.

Action PSF 1-B: In conjunction with the effort associated with Housing Element Program 2-5, coordinate with County and local water and wastewater agencies to assist in planning for adequate water and wastewater service. The County will take the following actions, as needed, to provide service to developing areas:

All Service Providers

Each water and wastewater provider will be mailed a copy of the Land Use Element, upon its adoption, along with a letter that identifies 1) the amount of residential, commercial, and

industrial growth desired for its service area including the County's fair share of regional housing needs, 2) specific actions the provider should take to ensure adequate service (see below), and 3) the text of Government Code Section 65589.7 requiring water and wastewater providers to grant priority for service allocations to proposed developments that include housing units affordable to lower (including very low and extremely low) income households.

Princeton

Encourage the District to raise new connection fees in the near future to ensure adequate funds are available to finance capital improvements. The District should develop a cost of services study to ensure that fees bear a reasonable nexus to the cost of services. The study should determine whether a fee reduction may be allowed for lower income units.

The County will encourage the District to seek funding for the necessary study and will assist in obtaining Community Development Block Grant Planning/Technical Assistance or USDA utilities grants or loans to offset the planning costs.

Using the Water and Wastewater Feasibility Study and a Revenue Program, the Princeton Water Works District should apply for placement on a Grant priority list with both the USDA and the State Resources Control Board Small Communities Grant Program. Additionally, an application should be made for placement on State Revolving Fund Loan program. The District's fiscal revenues alone will not be enough to make the necessary and impending capital improvements in the near future.

Encourage the District to develop a fee schedule that promotes full cost-recovery of expenses associated with the District's services, including annexations into the Districts service area and subsequent new development.

Arbuckle, Maxwell, Colusa, and Williams

While these communities have planned for infrastructure to support new development, construction of various facilities (wells and associated water treatment, wastewater lift stations, extension of mains, etc.) may be necessary to serve newly developing areas. The County will take the following measures to expedite and assist with the development of necessary infrastructure:

Work with special districts and the cities of Williams and Colusa to assure that wastewater and water systems are improved to ensure that construction of new dwelling units can be accommodated in accordance with the quantified objectives in the Housing Element of this General Plan.

Encourage the responsible water and wastewater agencies to conduct the necessary studies to develop appropriate adjustments to water connection, wastewater connection, and development impact fees in order to ensure adequate funding for necessary infrastructure improvements.

Encourage the cities and districts to apply for available State and federal grants and loans to finance construction of necessary improvements.

Encourage developers to provide the necessary long-range infrastructure associated with development through the filing of reimbursement agreements with developers. Seek funding to

off-set the cost of infrastructure improvements for very low and low income units in order to encourage development of affordable units.

Rural Areas

Review potential treatment technologies that could be developed to provide water and wastewater service for rural market-rate and affordable housing; develop performance standards for potential treatment technologies to assist public and/or private wastewater and water providers in determining which will be most feasible in their locations within the County.

Allow a wide range of feasible alternative system sizes and treatment technologies to provide water and wastewater service for rural market-rate and affordable housing.

Action PSF 1-C: Coordinate with municipal domestic water providers in the County to address state Water Conservation Act requirements to adopt water management plans and water use targets by July 2011.

Action PSF 1-D: Coordinate with agricultural water suppliers in the County to address state Water Conservation Act requirements to price water based on the quantity delivered and implement efficient management practices by July 31, 2012 and to adopt agricultural water management plans by December 31, 2012.

Action PSF 1-E: Coordinate with water districts, municipal water providers, agricultural water purveyors, and industrial water purveyors to implement consistent water conservation policies and measures Countywide, including the application and enforcement of the Water Efficient Landscaping Ordinance (Action CON 1-G).

Action PSF 1-F: Explore opportunities for the development of community-serving wastewater and water systems in College City. Opportunities to explore should include the formation of an independent municipal district (such as a public utility district) or the development of a privately operated community system. New privately or mutually owned and operated systems will be allowed only if it can be demonstrated that system revenues, system design, operation and capacity are adequate to serve existing and projected growth for the life of the project. At the preliminary review stage for projects that propose privately or mutually owned and operated wastewater systems, a financial program shall be submitted for approval by the County that assures private funding of the system's long term capital improvements and operation and maintenance costs.

Action PSF 1-G: Explore opportunities for the development of a community-serving wastewater system in Grimes. Opportunities to explore should include the formation of an independent municipal district (such as a public utility district) or the development of a privately operated community system. New privately or mutually owned and operated systems will be allowed only if it can be demonstrated that system revenues, system design, operation and capacity are adequate to serve existing and projected growth for the life of the project. At the preliminary review stage for projects that propose privately or mutually owned and operated wastewater systems, a financial program shall be submitted for approval by the County that assures private funding of the system's long term capital improvements and operation and maintenance costs.

Action PSF 1-H: Coordinate with the City of Colusa to annex areas of existing or planned urban residential development that are adjacent, or in close proximity, to the City limits, which are not currently served by municipal water and wastewater services.

Action PSF 1-I: Coordinate with the City of Williams to annex areas of existing or planned urban residential development that are adjacent, or in close proximity, to the City limits, which are not currently served by municipal water and wastewater services.

Action PSF 1-J: Actively work with the Federal water regulators to secure additional surface water allocations for the Stonyford area.

Action PSF 1-K: Continue to explore opportunities to secure new reliable long-term water supplies for the Century Ranch area.

3.14.2 WASTEWATER

Wastewater in Colusa County is treated and disposed of using one of several methods. The primary methods are onsite disposal and centralized disposal. There are five communities in the County served by centralized wastewater disposal systems: Arbuckle, Maxwell, Princeton, and the Cities of Colusa and Williams. The areas served by onsite systems are generally more rural or agricultural in nature. Although most onsite systems serve an individual dwelling or commercial establishment, some serve groups of homes or businesses.

Key Terms

Effluent: Effluent is an outflowing of water from a natural body of water, or from a man-made structure. Effluent in the man-made sense is generally considered to be water pollution, such as the outflow from a sewage treatment facility or the wastewater discharge from industrial facilities. In the context of waste water treatment plants, effluent that has been treated is sometimes called secondary effluent, or treated effluent.

GPD: Gallons per day.

MGD: Million gallons per day.

NPDES: Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

WWTP: Wastewater treatment plant. Treatment of wastewater may include the following processes: screening to remove large waste items; grit removal to allow sand, gravel, and sediment to settle out; primary sedimentation where sludge can settle out of the wastewater;

secondary treatment to substantially degrade the biological content of the sewage; tertiary treatment to raise the quality of the effluent before it is discharged; and, discharge.

ON-SITE SYSTEMS

On-site systems, commonly referred to as septic systems, are useful for handling the wastewater disposal needs of individual dwellings or commercial establishments for which connection to community facilities is not feasible. An on-site system consists of a septic tank that receives wastewater, allows the heavier solids to settle in the tank, and releases the remainder to an attached leach field. The leach field consists of underground perforated parallel lines through which water can seep into the surrounding soil. The solids which settled out of the wastewater in the septic tank must be periodically removed.

Septic tanks work well in areas of low density development where there is sufficient room to separate leach lines from potable water wells and lines. On-site systems are relatively inexpensive, easy to maintain, and contribute to water recharge in the area. However, on-site systems require certain soil conditions, topography, and water table conditions in order to work. If the proper conditions are not present, the leach field can become saturated and groundwater may become contaminated.

A serious problem associated with on-site systems is the potential for groundwater contamination. On-site systems that serve commercial or industrial establishments may dispose of chemicals that are not adequately filtered prior to being leached into the soil. For industrial properties where groundwater contamination is a concern due to chemical waste, chlorine injection or evaporation ponds must be provided in order to ensure safe disposal of sewage.

On-site systems were once common in the communities of Arbuckle, Maxwell, and Princeton. With the increase in water consumption and the use of appliances such as dishwashers and washing machines, it became increasingly difficult to have adequate room on each lot for leach fields to properly dispose of wastewater. As more homes were constructed at higher densities, the lots were consequently too small for a proper leach field and centralized systems became necessary and appropriate.

The communities of Grimes, College City, Century Ranch, and Stonyford dispose of locally generated wastewater through individual on-site septic systems. Rural residences located throughout the County, but outside of the communities listed above are also served by on-site septic systems.

COMMUNITY SYSTEMS

The communities of Arbuckle, Colusa, Maxwell, Princeton, and Williams are served by community systems for wastewater disposal and treatment, as described in greater detail below.

Arbuckle Public Utility District

The Arbuckle Public Utility District has provided sewer service to the residents of Arbuckle since 1953. The Arbuckle Public Utility District currently serves 820 connections. The older portions of

the system convey wastewater through clay pipes, but development within the last 20 years has installed mostly PVC pipes (Scheimer, 2009).

Wastewater is conveyed from individual homes and businesses to the treatment facility located on Bailey Road. With the exception of a lift station at the WWTP, the system is operated by gravity flows. The WWTP includes a clarifier, a digester, and seven evaporation/percolation ponds. The ponds provide sufficient surface area for evaporation and filtration so no effluent is discharged. The Arbuckle facility treats approximately 0.27 MGD. The plant capacity is 0.5 MGD (Scheimer, 2009).

Based on full build out of the District and the District's existing SOI, an additional gross 300 acres (including roads, curb and gutters, and sidewalks) could be developed. Assuming .75 of each gross acre could be developed, a total 225 net developable acres exist in the existing SOI and assuming 8,000 square foot residential lots, the District and SOI would have the capability to accommodate an additional 1,225 EDU. Based on an average of 384 GPD per connection, the system could accommodate an additional 1,303 total EDU at 384 GPD/EDU (LAFCO, 2005).

This additional system capacity far exceeds potential residential growth identified in the existing General Plan. Individual projects may need to construct wastewater conveyance infrastructure to connect project sites to the existing wastewater conveyance system.

Maxwell Public Utilities District

The Maxwell Public Utilities District has provided sewage treatment to the Maxwell community since 1973 and currently serves approximately 414 customers. The Maxwell Public Utility District WWTP is located on the southeast end of town adjacent to I-5. The plant is owned and operated by the Maxwell Public Utility District. The treatment plant consists of headworks with a communicator, one aeration lagoon and three oxidation lagoons, chlorine contact and dechlorination with the effluent dissipating into a local agricultural ditch that flows toward Lurline Creek. Biosolids are disposed of on a 75-acre piece of agricultural land recently acquired by the District, and secondary disinfected effluent is also dispersed via spraying onto 198-acres of agricultural land recently acquired by the District.

The design and permitted capacity (RWQCB order R5-2002-0022) rating for the plant is for an average of 0.2 MGD. The plant was designed and built in 1973-74. The average flow is approximately 0.14 MGD. During wet weather, flows in the plant appear to be significantly impacted by Infiltration and Inflow (I and I). These flows can be about seven times the average, recording 0.6 MGD at times. All wastewater is collected through gravity, cement-pipe sewer system installed in the 1940s (Maxwell PUD Wastewater Treatment Plant System Improvements Report, 2002).

The District provides secondary treatment by way of aeration lagoon, three oxidation ponds, and a chlorine contact basin and dechlorination.

The collection system consists primarily of 6-inch and 8-inch concrete pipes and 12-inch clay pipes. Since 1982, work has progressed on replacing many of the concrete pipes with PVC. The entire

west side of the District's collection system consists of approximately 70-year old concrete piping. These stretches of pipe are antiquated and need to be replaced as soon as funding and time allows. The remainder of the Districts collection system is PVC and clay and is considered in good condition.

The wastewater treatment facility has the permitted capacity to service approximately 375 new connections. The biggest challenge the District is facing is regulations that took effect in 2009 regarding surface water discharges and the District's NPDES permit (the present system will not meet these new NPDES requirements). The stricter effluent limitations have made the District reconsider its present method of wastewater treatment to land disposal. The District recently acquired 273 acres of land for land disposal rather than moving to a more advanced form of treatment (tertiary). In June 2011 the District received approval from the Regional Water Quality Control Board to apply biosolids to 75 acres of agricultural land recently acquired by the District, and to apply secondary disinfected effluent to irrigate crops on approximately 198 acres of land recently acquired by the District.

Princeton Water Works District

The Princeton Water Works District has provided wastewater treatment for the community of Princeton since 1969. The WWTP is located on a 30-acre site northwest of town and includes a lift station, a concrete lined aeration ditch, and two evaporation/percolation ponds. The facility treats approximately 18,260 GPD, but has a capacity of 40,000 GPD (LAFCO, 2007).

The District provides wastewater services to about 105 customers (connections), with an average wastewater flow of 0.034 MGD or 324 GPD per connection. The system consists of a WWTP, a pump station and collection system made up of a 6-inch and 8-inch epoxy lined AC pipe. According to the Princeton Water Works District, approximately 369 people live in the District's service area (LAFCO, 2007). The two holding ponds facilitate further treatment and disposal by evaporation and percolation. Typically, one stabilization pond is used; the second pond is maintained for future expansion and operational maintenance purposes.

The method of discharge is as follows: Raw sewage from the collection system drains to a pump station. From there, it is pumped to an aeration ditch. The sewage is retained in the aeration ditch for approximately 40 hours, during which time it is aerated by means of a cage rotor. The effluent leaves the aeration ditch through a weir structure and flows into evaporation/percolation ponds.

Assuming 0.034 MGD average wastewater flow (324 GPD average per connection) with the total wastewater permitted/design capacity of 0.040, the District is nearly at its capacity and could serve an additional 19 connections to a total of 124 connections. This figure assumes the average wet weather flows do not exceed the maximum permitted and design capacity of the system. The design/permitted capacity and Waste Discharge Requirement Order #94-013 requires the system to not exceed a monthly average wastewater flow of 40,000 GPD. This is also the maximum flow that the system can accommodate (LAFCO, 2007).

The District has not developed a Capital Improvements Plan, although they prepared an Engineering Report in 2005 - *The Water and Sewer Feasibility Study* - that outlines various system

deficiencies and recommended solutions. While not the same as a Capital Improvements Plan, this study does identify various equipment deficiencies and the necessary upgrades to promote more efficient operation, along with the cost of implementation and financing suggestions. Possible funding sources include a Rural Utility Service within USDA Rural Development, which provides affordable financial assistance to develop and improve water and wastewater disposal systems in rural areas and towns with populations under 10,000. Funds are available to public entities such as municipalities, counties, special purpose districts and corporations operated on a non-profit basis.

The Princeton Water Works District should be eligible for the Small Communities Grant Program. The program is State funded as funds allow. If all grant funding has been exhausted, the State Revolving Fund program could loan at rate of 2.5 percent amortized over twenty years. A Revenue Program will be required together with environmental documents prior to obtaining a loan from this program (LAFCO, 2007).

City of Colusa

The City of Colusa operates a wastewater treatment facility at 2820 Will S. Green Road in Colusa, about a mile southwest of downtown. The facility was constructed in 1949, but was updated with new equipment in 2008. The new equipment includes a “Bio-lac” secondary aeration process, tertiary filtration, ultraviolet (UV) disinfection system sludge storage basins, and daily and monthly equalization storage ponds (NPDES Permit No. CA0078999). The old pond infrastructure may be used for emergency storage. The City’s existing wastewater collection system covers an area of approximately 900 acres and provides service to almost 5,700 residents as well as commercial and industrial users. The City owns, operates, and maintains a network of over 26 miles of sewer pipelines (ranging in size from 4- to 18- inches in diameter), force mains, and six existing pump stations, which convey an average dry weather flow of 0.58 MGD from the City’s service area to the City of Colusa WWTP (Ecologic, 2009).

According to the NPDES permit, the facility can treat and discharge up to 0.7 MGD. According to the 2010 Draft MSR for the City of Colusa, the design capacity of the WWTP is 0.9 MGD. The effluent discharges to an unnamed tributary which leads to Powell Slough. At the existing level of development, during average daily dry weather flows, model simulations predict all pipes to be flowing at less than 80 percent capacity with no manholes surcharging. Average daily dry weather flow is 0.58 MGD at the City of Colusa’s WWTP (Ecologic, 2009).

The 2009 City of Colusa Wastewater Collection System Master Plan (Master Plan) included an analysis of two phases of future growth within and surrounding the City. Phase I included infill of the existing city limits, redevelopment of parcels as defined in the General Plan, and “Special Consideration” areas. Special Consideration areas are existing areas outside the city limits that are currently on septic systems and future developments, which were identified by the City as likely to be accommodated within the existing collection system in the near-future. Phase II included build-out of the remainder of the General Plan SOI.

With the addition of flow from Future Developments – Phase I, the modeled peak hourly wet weather flow during the 10-year, 6-hour design storm event was estimated to be 4.2 MGD at the

City's WWTP. These peak hourly wet weather flows resulted in an increase in overflows, capacity-limited pipelines, and manhole surcharging. The majority of pipelines within the City are impacted by downstream conditions. These downstream restrictions are directly related to pump station capacity, specifically at the Screens, Primary, South Wescott, and Wye pump stations. Of the surcharged pipelines, the only pipelines that exceed the established surcharging criteria are the 8-inch line from the intersection of 3rd Street and Parkhill Street to the intersection of 9th Street and Harris Street. This portion of the collection system, referred to as the 6th Street Trunk, is a shallow trunk with manhole depths less than four feet, which does not allow for any surcharging (Ecologic, 2009).

Full development of Phase II is estimated to double the wastewater flow to 7.6 MGD and sufficient capacity does not exist in the existing collection system to accommodate this flow. New trunk sewers and upsizing of the Primary and South Wescott pump stations will be necessary to convey all future flow to the WWTP (Ecologic, 2009). However, as described and discussed in the City of Colusa 2010 Draft MSR, based on a design capacity of .9 MGD at its WWTP, the City has a adequate capacity to provide wastewater services to 3,352 EDU. The City has 2,123 units at this time and 177 acres of vacant land with a potential build out of 721 dwelling units. The City has an additional capacity to accommodate 1,229 additional units of which 508 could be developed within its SOI (LAFCO, 2010).

The Master Plan identifies numerous system improvements that would expand treatment and conveyance capacity to a level that would serve full buildout of the City's SOI. Total capital costs would reach approximately \$20.6 million at 2009 construction rates (Ecologic, 2009).

City of Williams

The City of Williams owns and operates the collection, treatment, and disposal system, and provides sewage service to the City of Williams and limited portions of the surrounding area and the SOI. The wastewater system collects wastewater and conveys it to the City's treatment plant located approximately one half mile north of the city limits along I- 5.

Current average dry weather flow (ADWF) is around 3.0 MGD (75 GPD/capita) and the current average annual flow is about 0.34 MGD (85 GPD/capita). Based on an ADWF of 250 GPD/EDU there are currently approximately 1,200 EDUs on the City's sewer system. The current plant is rated for 2,000 EDUs based on the permitted ADWF flow of .5 MGD. The current system can handle approximately 390 connections before reaching plant capacity (800 connections were available—300 units are committed to the Valley Ranch subdivision, 110 are committed to new development, leaving 390 available connections).

The treatment system consists of headworks, with grit removal, four aerated waste stabilization ponds and chlorination/dechlorination for reducing the number of pathogens. Sludge is removed from the ponds, dewatered and disposed of off-site. The pond system produces an equivalent secondary effluent. The City treats its wastewater using aerated ponds and disposes of the treated wastewater, (effluent), by discharging it to Salt Creek, a seasonal stream and tributary to Freshwater Creek and the Colusa Basin Drain.

The City's wastewater collection system consists of approximately 55,000 linear feet of 6-inch to 20-inch diameter pipeline. The general flow of wastewater is from south to north. There are currently two sewer lift stations. The collection system does not experience overflows during peak wet weather flows and is considered to have adequate capacity. Due to the flat terrain in the City, additional lift stations will be necessary depending on the location of new growth (LAFCO, 2007).

REGULATORY SETTING - WASTEWATER

In California, all wastewater treatment and disposal systems fall under the overall regulatory authority of the State Water Resources Control Board (SWRCB) and the nine California Regional Water Quality Control Boards (RWQCBs), who are charged with the responsibility of protecting beneficial uses of State waters (ground and surface) from a variety of waste discharges, including wastewater from individual and municipal systems. Colusa County falls within the jurisdiction of the Central Valley RWQCB.

The RWQCB's regulatory role often involves the formation and implementation of basic water protection policies. These are reflected in the individual RWQCB's Basin Plan, generally in the form of guidelines, criteria and/or prohibitions related to the siting, design, construction, and maintenance of on-site sewage disposal systems. The SWRCB's role has historically been one of providing overall policy direction, organizational and technical assistance, and a communications link to the State legislature.

The RWQCBs may waive or delegate regulatory authority for on-site sewage disposal systems to Counties, Cities or special districts. Although not mandatory, it is commonly done and has proven to be administratively efficient. In some cases this is accomplished through a Memorandum of Understanding (MOU), whereby the local agency commits to enforcing the Basin Plan requirements or other specified standards that may be more restrictive. The RWQCBs generally elect to retain permitting authority over large and/or commercial or industrial on-site sewage disposal systems, depending on the volume and character of the wastewater. The established protocol for involvement of the RWQCB in permitting and review is established by a routine understanding between the County and the RWQCB.

Community Systems Regulation

The RWQCB has direct oversight and permitting responsibility for large-flow systems of greater than 2,500 GPD and community systems, unless the RWQCB chooses to waive that authority and delegate their oversight to the County on a case-by-case basis. Some community systems in Colusa County fall within Public Utility Districts (PUDs), which have assumed responsibility for oversight and/or maintenance of the infrastructure. In these cases the PUD is considered the responsible party (discharger) under terms of the permit issued by the RWQCB.

Individual On-site Sewage Disposal System Regulations

Regulation of individual on-site sewage disposal systems in unincorporated Colusa County occurs at a variety of levels, including by the SWRCB, through the Central Valley RWQCB, and locally, by

the County. Recently, the State of California enacted legislation that will require the establishment of statewide standards for on-site sewage disposal systems.

Counties typically regulate septic systems via their Environmental Health and/or Building or Planning Departments. In Colusa County, septic systems are regulated by the Environmental Health Division of the Department of Health and Human Services. Local septic system ordinances often incorporate portions of the Uniform Plumbing Code and other specific requirements.

The following sections describe the primary regulatory mechanisms in place for on-site sewage disposal systems.

Regional Water Quality Control Board Basin Plan for the Central Valley

The Central Valley RWQCB has adopted policies and requirements pertaining to on-site sewage disposal systems, commonly referred to as the Basin Plan.

The on-site sewage disposal systems element of the Basin Plan sets forth various objectives, guidelines, general principles and recommendations for the use of on-site sewage disposal systems that cover a variety of topics. Mandatory requirements for the siting and design of on-site sewage disposal systems are reflected in the Basin Plan. Included for all on-site sewage disposal systems are specific criteria related to separation distances to groundwater, setbacks to water features, soil conditions, percolation rates, special design systems, and leachfield replacement area. Further discussion of these criteria is provided later in this section.

Assembly Bill 885 (AB 885) Chapter 4.5 of Division 7 of the California Water Code

AB 885 was passed by the California Legislature in September 2000, and mandates the establishment of statewide standards to regulate the placement and use of on-site wastewater treatment systems (OWTS). The SWRCB has been charged with developing this critical set of uniform statewide standards for on-site sewage disposal systems that are required to be incorporated into all RWQCB Basin Plans in the near future. For the past several years the SWRCB has been in the process of developing statewide regulations for on-site wastewater treatment systems per AB 885. The key aspects of the proposed regulations include:

Site Evaluation Practices. The proposed regulations will mandate more thorough and consistent soil and site evaluation practices for all new and repair/replacement OWTS for verification of soil depth and groundwater levels. Current practices focus primarily on attaining minimum horizontal setbacks and determination of groundwater separation, not on determination of soil texture, structure or depth. Proposed definitions for soil (especially rock content and weathered bedrock) will require more thorough and extensive soil profile evaluations and stricter interpretations of suitability than under current practices.

Operation and Maintenance (O&M) Manuals. The proposed AB 885 regulations require the preparation of an O&M manual for all new and repair/replacement OWTS. This will require that the County adopt regulations or policies mandating the preparation and submission of an O&M

manual for all new and repair/replacement OWTS. The County will also have responsibilities for reviewing and maintaining official copies of these documents.

Septic Tank Risers and Effluent Filters. Access risers to “near” grade and the use of effluent filters will be required under the proposed regulations. These requirements will apply to new standard systems as well as supplemental treatment systems, and for any tank replacements.

Supplemental Treatment Systems. The proposed regulations have minimum vertical separation requirements that will lead to increased use of supplemental treatment systems. Minimum vertical separation is the depth of continuous unsaturated, undisturbed earthen material between the bottom of the dispersal system and the top of the seasonal high groundwater level, impermeable strata, or bedrock.

Dispersal System Siting and Design Criteria. The proposed dispersal system siting and design requirements are generally consistent with and/or less restrictive than the current RWQCB Basin Plan. Many of the requirements are structured to allow for more latitude in the use of supplemental treatment to overcome soil depth/suitability constraints for OWTS. Based on the soil definitions in the proposed regulations, there is likely to be an increased need to specify supplemental treatment systems and shallow dispersal designs (including mounds) for sites that may have been permitted for conventional trench designs under current practices.

Groundwater Quality and Septic Tank Monitoring. The proposed AB 885 regulations will mandate new groundwater sampling and septic tank inspections requirements for new and existing OWTS. The proposed regulations do not explicitly require the County to enforce this requirement or to collect and maintain any of the results from sampling that is performed. However, as the local agency responsible for implementing the regulations, at a minimum, the County would be obligated to provide some level of oversight for these activities, the details of which would likely have to be specified in the RWQCB MOU or the Conditional Waiver from the SWRCB.

Record Keeping. The proposed requirements specify only that system owners maintain copies of the Record Plan and the O&M Manual for the OWTS. The County, as the implementing authority will also be required to collect, review and maintain records of these same items.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with Utilities if it will:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-2: The project would generate wastewater that would be conveyed and treated at an existing wastewater treatment plant (Significant and Unavoidable)

Development under the 2030 General Plan would result in increased wastewater flows, resulting in the need for additional wastewater treatment facilities and conveyance infrastructure. As shown in Table 3.14-3, the 2030 General Plan would generate an additional 1.24 mgd in wastewater effluent. This anticipates growth in or near communities served by a community wastewater treatment system during the planning horizon.

TABLE 3.14-3: ANNUAL WASTEWATER TREATMENT DEMAND – 2030 TO 2030 PLANNING HORIZON

	2030 TO 2030 PLANNING HORIZON	CONVERSION FACTOR	WASTEWATER RATE	WASTEWATER GENERATION
Residential	1,133 units ¹	1 EDU per unit	324 gpd	367,092 gpd / 0.38 mgd
Non-Residential	450 acres ²	6 EDU per acre	324 gpd	874,800 gpd / 0.87 mgd
Total	--	--	--	1,241,892 gpd / 1.24 mgd

¹252 of the 1,385 new units projected during the planning period are anticipated to be built in rural areas and use septic or alternative wastewater treatment.

²Approximately 560 to 600 acres of commercial, industrial, parks and recreation, mixed use non-residential, public/semi-public services, and other non-residential uses could develop during the planning horizon; of these acres, approximately 400 acres would connect to a community wastewater treatment facility.

Future development and the related increase in demand for wastewater treatment and disposal would also require additional wastewater treatment, wastewater conveyance, and wastewater disposal infrastructure. Several communities, including Arbuckle and Maxwell, have capacity to accommodate additional growth. In Princeton, College City (which is currently not served by a community wastewater treatment system) the Colusa area, and other areas of the County, new or expanded infrastructure would be necessary to accommodate growth.

Because the 2030 General Plan does not propose development or include specific projects, it would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board nor does it require any determinations from wastewater treatment providers regarding adequate capacity. Rather, the 2030 General Plan creates a planning framework for development and provides policies and actions to ensure that growth is timed such that wastewater demands from new development do not exceed wastewater treatment requirements and do not exceed available capacity.

The infrastructure and facilities necessary to serve new growth would involve development of some facilities on-site, some facilities off-site on appropriately designated land, and may also involve improvements to existing facilities and disturbance of existing rights-of-way. The specific impacts of providing new and expanded facilities cannot be determined at this time, as the 2030

General Plan does not propose development nor does it designate specific sites for new or expanded public facilities.

Wastewater treatment and conveyance facilities would be evaluated at the project-level in association with subsequent development projects. However, the facilities would be primarily provided on sites with land use designations that allow such uses and the environmental impacts of constructing and operating the facilities would likely be similar to those associated with new development, redevelopment, and infrastructure projects under the 2030 General Plan, such as impacts associated with construction activities including air quality, drainage, and noise, and impacts associated with operation including traffic, noise, air quality, hazards, and land stability. These impacts would generally occur as described in the relevant chapters (Chapters 3.1 through 3.14, and 4.0) of this Draft EIR and may include temporary direct disruption of property access, permanent direct loss of agricultural productivity, and potential indirect conversion of agricultural land by expansion of urban services through agricultural lands. Other impacts that may occur include short-term direct visual impacts associated with construction activities; potential direct impacts on a variety of biological resources, including wetlands and riparian resources; loss of trees and other sensitive habitats; and loss or disturbance of special status plant and animal species. Additionally, air quality emissions of particulate matter, greenhouse gases, oxides of nitrogen, and reactive organic gases may be generated. Where potentially significant or significant impacts are identified, this Draft EIR identifies mitigation measures in the relevant chapter of this Draft EIR to reduce the impact and discloses which impacts cannot be reduced to a less than significant impact.

As future development and infrastructure projects are considered by the County, each project will be evaluated for conformance with the County's General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The 2030 General Plan includes policies and actions designed to ensure adequate wastewater treatment capacity is available to serve development, to minimize the potential adverse effects of wastewater treatment, and to ensure that development does not move forward until adequate wastewater capacity exists. Policy PSF 1-19 requires development that will result in increased wastewater demand to demonstrate adequate capacity or that improvements to provide adequate capacity will be made prior to project implementation. Policies PSF 1-12, 1-17, and 1-18 provide assurances that adequate funding will be available, either through a public facilities plan prepared for a development or through rate re-structuring by the local wastewater treatment provider, to provide necessary improvements. Actions PSF 1-A, 1-B, and 1-F through 1-H, and 1-L through 1-N provide methods to apply applicable policies, including ensuring coordination with wastewater treatment providers to plan for necessary improvements to accommodate growth.

While implementation of the 2030 General Plan, the County's Zoning Ordinance, and the wastewater treatment requirements would ensure that new development is only approved if there is adequate wastewater capacity to serve the development, there would still exist the potential for adverse environmental effects associated with increased wastewater treatment, conveyance, and disposal to serve development in specific areas over the life of the General Plan.

However, wastewater treatment facility, conveyance, and disposal infrastructure improvements necessary to accommodate such service may result in significant environmental impacts. The only measure that would fully mitigate this impact would be to allow a minimal amount of new development, which is not consistent with the goals of the 2030 General Plan update project. Therefore, this impact is considered **significant and unavoidable**.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy PSF 1-4: Municipal water and wastewater services should only be extended to lands designated Urban Reserve Area if the following conditions are met:

- 1. The majority of the adjacent designated urban residential and commercial lands have been built out or are planned for build out,*
- 2. The extension of services would not facilitate creation of an island of urban uses in a rural or agricultural area,*
- 3. The extension of services would not facilitate leapfrog development, and*
- 4. A master or specific plan has been prepared for the lands requesting access to a municipal water and wastewater system.*

Policy PSF 1-9: Make every effort to ensure that infrastructure is planned and available in a timely manner to accommodate development that supports the County's economic needs.

Policy PSF 1-12: Require a public facilities financing plan for development projects that will not adequately be served by existing and planned infrastructure and facilities and/or those improvements identified in the County's Capital Improvement Program that are funded through the County's development impact fee program. The financing plan shall identify needed public improvements and shall include a plan to pay for and develop the required public improvements.

Policy PSF 1-13: Assist and facilitate in the planning, design and construction of municipal wastewater services to meet the demands of growth, as shown in the General Plan Land Use Map.

Policy PSF 1-14: Support municipal wastewater service providers in the maintenance and expansion of treatment and conveyance facilities to meet existing and projected wastewater service demand.

Policy PSF 1-15: Prioritize wastewater service assistance and improvements to areas within the County that pose a threat to public health and the environment as a result of deficiencies in existing wastewater or septic systems.

Policy PSF 1-16: Assist and facilitate the expansion of municipal wastewater services to residential areas adjacent to existing municipal systems which are currently served by septic systems, when such expansion does not create a new demand for growth. Residential areas with development densities of more than one unit per two acres where existing septic systems are failing shall be given top priority for assistance.

Policy PSF 1-17: Provide technical and financial assistance, when feasible, to municipal wastewater service providers to improve existing infrastructure and expand treatment capacity.

Policy PSF 1-18: Support efforts by municipal wastewater service providers to increase or restructure rates in order to increase available funding for necessary system improvements, upgrades and maintenance.

Policy PSF 1-19: Prior to the approval of new development that would result in increased demand for municipal wastewater conveyance and treatment, projects must demonstrate that existing services are adequate to accommodate the increased demand, or improvements to the capacity of the system to meet increased demand will be made prior to project implementation.

Policy PSF 1-20: New residential development on parcels smaller than two acres shall be required to connect to a municipal wastewater system. The use of septic systems on residential parcels smaller than two acres shall be prohibited.

Policy PSF 1-21: New residential development on parcels smaller than five acres shall be discouraged from using septic systems to dispose of wastewater.

Policy PSF 1-23: Discourage the extension of municipal wastewater services outside of residential, commercial and industrial lands within existing communities.

Policy PSF 1-24: Installation of new wastewater lines should occur concurrently with construction of new roadways to maximize efficiency and minimize impacts from construction activities.

Policy PSF 1-25: Prefer the creation of government (public) owned, designed, constructed and operated wastewater systems over privately or mutually owned systems to serve new growth. New privately or mutually owned and operated systems will be allowed only if it can be demonstrated that system revenues, system design, operation and capacity are adequate to serve existing and projected growth for the life of the project. At the preliminary review stage for projects that propose privately or mutually owned and operated wastewater systems, a financial program shall be submitted for approval by the County that assures private funding of the system's long term capital improvements and operation and maintenance costs. Financial programs to fund privately or mutually owned and operated wastewater systems, subject to County approval, shall be in place prior to project development.

Actions

Action PSF 1-A: Coordinate with local water and wastewater agencies to assist in planning for adequate public services to support new residential, commercial, and industrial development in existing community areas. Particular effort shall be made to provide adequate infrastructure to accommodate the commercial, mixed use, industrial, R-2, R-3, and R-4 sites in Arbuckle, Maxwell, Princeton, and the unincorporated area of Colusa and commercial and industrial sites in the unincorporated area of Williams.

Action PSF 1-B: In conjunction with the effort associated with Housing Element Program 2-5, coordinate with County and local water and wastewater agencies to assist in planning for adequate water and wastewater service. The County will take the following actions, as needed, to provide service to developing areas:

All Service Providers

Each water and wastewater provider will be mailed a copy of the Land Use Element, upon its adoption, along with a letter that identifies 1) the amount of residential, commercial, and

industrial growth desired for its service area including the County's fair share of regional housing needs, 2) specific actions the provider should take to ensure adequate service (see below), and 3) the text of Government Code Section 65589.7 requiring water and wastewater providers to grant priority for service allocations to proposed developments that include housing units affordable to lower (including very low and extremely low) income households.

Princeton

Encourage the District to raise new connection fees in the near future to ensure adequate funds are available to finance capital improvements. The District should develop a cost of services study to ensure that fees bear a reasonable nexus to the cost of services. The study should determine whether a fee reduction may be allowed for lower income units.

The County will encourage the District to seek funding for the necessary study and will assist in obtaining Community Development Block Grant Planning/Technical Assistance or USDA utilities grants or loans to offset the planning costs.

Using the Water and Wastewater Feasibility Study and a Revenue Program, the Princeton Water Works District should apply for placement on a Grant priority list with both the USDA and the State Resources Control Board Small Communities Grant Program. Additionally, an application should be made for placement on State Revolving Fund Loan program. The District's fiscal revenues alone will not be enough to make the necessary and impending capital improvements in the near future.

Encourage the District to develop a fee schedule that promotes full cost-recovery of expenses associated with the District's services, including annexations into the Districts service area and subsequent new development.

Arbuckle, Maxwell, Colusa, and Williams

While these communities have planned for infrastructure to support new development, construction of various facilities (wells and associated water treatment, wastewater lift stations, extension of mains, etc.) may be necessary to serve newly developing areas. The County will take the following measures to expedite and assist with the development of necessary infrastructure:

Work with special districts and the cities of Williams and Colusa to assure that wastewater and water systems are improved to ensure that construction of new dwelling units can be accommodated in accordance with the quantified objectives in the Housing Element of this General Plan.

Encourage the responsible water and wastewater agencies to conduct the necessary studies to develop appropriate adjustments to water connection, wastewater connection, and development impact fees in order to ensure adequate funding for necessary infrastructure improvements.

Encourage the cities and districts to apply for available State and federal grants and loans to finance construction of necessary improvements.

Encourage developers to provide the necessary long-range infrastructure associated with development through the filing of reimbursement agreements with developers. Seek funding to

off-set the cost of infrastructure improvements for very low and low income units in order to encourage development of affordable units.

Rural Areas

Review potential treatment technologies that could be developed to provide water and wastewater service for rural market-rate and affordable housing; develop performance standards for potential treatment technologies to assist public and/or private wastewater and water providers in determining which will be most feasible in their locations within the County.

Allow a wide range of feasible alternative system sizes and treatment technologies to provide water and wastewater service for rural market-rate and affordable housing.

Action PSF 1-F: Explore opportunities for the development of community-serving wastewater and water systems in College City. Opportunities to explore should include the formation of an independent municipal district (such as a public utility district) or the development of a privately operated community system. New privately or mutually owned and operated systems will be allowed only if it can be demonstrated that system revenues, system design, operation and capacity are adequate to serve existing and projected growth for the life of the project. At the preliminary review stage for projects that propose privately or mutually owned and operated wastewater systems, a financial program shall be submitted for approval by the County that assures private funding of the system's long term capital improvements and operation and maintenance costs.

Action PSF 1-G: Explore opportunities for the development of a community-serving wastewater system in Grimes. Opportunities to explore should include the formation of an independent municipal district (such as a public utility district) or the development of a privately operated community system. New privately or mutually owned and operated systems will be allowed only if it can be demonstrated that system revenues, system design, operation and capacity are adequate to serve existing and projected growth for the life of the project. At the preliminary review stage for projects that propose privately or mutually owned and operated wastewater systems, a financial program shall be submitted for approval by the County that assures private funding of the system's long term capital improvements and operation and maintenance costs.

Action PSF 1-H: Coordinate with the City of Colusa to annex areas of existing or planned urban residential development that are adjacent, or in close proximity, to the City limits, which are not currently served by municipal water and wastewater services.

Action PSF 1-I: Coordinate with the City of Williams to annex areas of existing or planned urban residential development that are adjacent, or in close proximity, to the City limits, which are not currently served by municipal water and wastewater services.

Action PSF 1-M: Investigate the feasibility of creating a Joint Powers Authority to assist municipal wastewater providers within the County in leveraging resources and securing funding for system improvements. The creation of a JPA should not result in the centralized administration of separate existing municipal wastewater systems or create a regional wastewater system.

Action PSF 1-N: Update County permitting requirements to include requirements and performance standards for small package wastewater systems to serve existing communities, such as College

City. Include requirements to ensure availability of long-term funding mechanisms that provides adequate long-term operation and maintenance of such systems.

3.14.3 SOLID WASTE

There are four types of solid waste generated in Colusa County: residential waste, commercial waste, industrial waste, and natural resource byproducts. Most of the waste brought to landfills is residential waste. Natural resource byproducts include rice stubble and straw, manures, gas well muds, cannery waste, and waste from prune dehydrators. Rice stubble and straw is usually burned or disked into the land, while manures are often used as fertilizer.

Key Terms

Transfer station: A facility for the temporary deposition of some wastes. Transfer stations are often used as places where local waste collection vehicles will deposit their waste cargo prior to loading into larger vehicles. These larger vehicles will transport the waste to the end point of disposal or treatment.

Class I landfill: A landfill that accepts for disposal 20 tons or more of municipal solid waste daily (based on an annual average); or one that does not qualify as a Class II or Class III municipal solid waste landfill.

Class II landfill: A landfill that (1) accepts less than 20 tons daily of municipal solid waste (based on an annual average); (2) is located on a site where there is no evidence of groundwater pollution caused or contributed by the landfill; (3) is not connected by road to a Class I municipal solid waste landfill, or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill; and (4) serves a community that experiences (for at least three months each year) an interruption in access to surface transportation, preventing access to a Class I landfill, or a community with no practicable waste management alternative.

Class III landfill: A landfill that is not connected by road to a Class I landfill or a landfill that is located at least 50 miles from a Class I landfill. Class III landfills can accept no more than an average of one ton daily of ash from incinerated municipal solid waste or less than five tons daily of municipal solid waste.

WASTE GENERATION

In 2009, Colusa County (including both cities) generated 20,896 tons of solid waste. The average waste generation rate in Colusa County was 5.2 pounds per day per resident and 14.5 pounds per day per employee for commercial and industrial uses, as reported by the California Department of Resources Recycling and Recovery for 2009.

EXISTING FACILITIES

Residential and commercial garbage pickup is provided by Recology Butte Colusa Counties, formerly Norcal Waste Systems of Butte County. Service is provided to the cities of Colusa and Williams, as well as the unincorporated communities of Arbuckle, Maxwell, and Princeton

(Recology, 2009). Garbage picked up from areas east of the Tehama-Colusa Canal is taken to the Maxwell Transfer Station, while garbage picked up from areas west of the Tehama-Colusa Canal is taken directly to the Stonyford Disposal Site (Azevedo, 2009).

Local Facilities

MAXWELL TRANSFER STATION

The Maxwell Transfer Station is located on SR 99 south of the community of Maxwell. It is a solid waste transfer station which receives up to 100 tons per day of mixed municipal and construction/demolition refuse. The facility has applied for a modified permit which would allow up to 180 tons daily (Azevedo, 2009). Garbage is brought to the transfer station by Recology's trucks, but the facility is also open to the public (Azevedo, 2009). The transfer facility handles e-waste and used oil, but cannot accept hazardous waste (Azevedo, 2009). There is currently no program in Colusa County to handle hazardous waste (Azevedo, 2009). The facility is owned and operated by Recology Butte Colusa Counties.

STONYFORD DISPOSAL SITE

The County of Colusa owns and operates the Stonyford Disposal Site, located on Lodoga-Stonyford Road, south of the community of Stonyford. It is a Class III landfill with a maximum permitted capacity of 149,219 cubic yards. As of April 30, 2001, the Stonyford Disposal Site had a remaining capacity of 55,683 cubic yards. This site receives agricultural waste, construction and demolition waste, mixed municipal waste, and tires (CIWMB, 2009).

Regional Facilities

In addition to the local facilities, solid waste from Colusa County is disposed at the following facilities.

Altamont Landfill and Resource Recovery in Alameda County: This facility has a closure date of January 2025. CalRecycle estimated the remaining capacity at 45,720,000 cubic yards in 2006, with a maximum daily permitted disposal of 11,500 tons.

Forward Landfill, Inc. in San Joaquin County: This facility has a closure date of January 2020. CalRecycle estimated the remaining capacity at 23,700,000 cubic yards in 2006, with a maximum daily permitted disposal of 8,668 tons.

Potrero Hills Landfill in Solano County: This facility's permit will be reviewed in December 2011. CalRecycle estimated the remaining capacity at 13,872,000 cubic yards in 2006, with a maximum daily permitted disposal of 4,330 tons.

Recology Ostrom Road Landfill in Yuba County: This facility has a closure date of December 2066. CalRecycle estimated the remaining capacity at 39,223,000 cubic yards in 2006, with a maximum daily permitted disposal of 3,000 tons.

Recology Hay Road in Solano County: This facility has a closure date of January 2077. CalRecycle estimated the remaining capacity at 30,433,000 cubic yards in 2006, with a maximum daily permitted disposal of 2,400 tons.

Yolo County Central Landfill: While this facility has a closure date of January 2081, CalRecycle indicates that the landfill is active with a permitted maximum disposal of 1,800 tons per day.

REGULATORY SETTING – SOLID WASTE

FEDERAL

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the Act as it stands today governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA, enacted in 1976, is an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes the Environmental Protection Agency (EPA) to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs, in lieu of the federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the federal program.

STATE

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (AB 939) requires every city and county in the State to prepare a Source Reduction and Recycling Element to its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory State waste diversion goals of 25 percent by 1995 and 50 percent by 2000. The purpose of AB 939 is to “reduce, recycle, and re-use solid waste generated in the State to the maximum extent feasible.” The term “integrated waste management” refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with the least adverse impact on human health and the environment. The Act has established a waste management hierarchy, as follows: Source Reduction; Recycling; Composting; Transformation; and Disposal. Norcal Waste Systems of Butte County, Inc. provides for source reduction through the collection of greenwaste and recycling as part of the waste disposal program, which is available in many areas of Colusa County.

California Integrated Waste Management Board Model Ordinance

Subsequent to the Integrated Waste Management Act, additional legislation was passed to assist local jurisdictions in accomplishing the goals of AB 939. The California Solid Waste Re-use and Recycling Access Act of 1991 (§42900-42911 of the Public Resources Code) directs the California Integrated Waste Management Board (CIWMB) to draft a “model ordinance” relating to adequate areas for collecting and loading recyclable materials in development projects. The model

ordinance requires that any new development project, for which an application is submitted on or after September 1, 1994, include “adequate, accessible, and convenient areas for collecting and loading recyclable materials.” For subdivisions of single family detached homes, recycling areas are required to serve only the needs of the homes within that subdivision.

LOCAL

Colusa County Code, Chapter 32: Solid Waste Management

As part of the state of California program for solid waste management and resource recovery and for the preservation of health, safety, and well being of the public, the County has determined that it is in the public interest that the County make provisions for solid waste handling services. Solid waste materials are primarily created by people who are residents of the county and not by any particular business, industries, commercial enterprises, agricultural pursuits or land uses. It is found by the board of supervisors that there is a direct relationship between the volume of solid wastes generated within the county and the number of families permanently residing in the county. It is further found that the cost and expense of acquiring, opening and maintaining solid waste disposal sites in Colusa County, in a manner compatible with good public health and environmental practices, should be borne directly by those who create the waste disposal problem. Therefore, for the purpose of solid waste disposal, all lands within the unincorporated area of the county are classified according to those parcels upon which dwelling units are situated and those parcels upon which dwelling units are not situated, without regard to other land use, zoning, assessed valuation or other criteria.

Chapter 32 of the Colusa County Code contains specific requirements related to:

- Pre-collection and storage of solid waste
- Waste removal time periods
- Waste ownership and responsibilities
- Waste collection
- Transfer station services
- Waste disposal, and
- Solid waste handling

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with Utilities if it will:

1. Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs.
2. Comply with federal, State, and local statutes and regulations related to solid waste.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-3: The project would be served by a landfill for solid waste disposal needs and will require compliance with various laws and regulations (Less than Significant)

Development under the 2030 General Plan will generate a population increase of approximately 4,030 persons and an increase in employment of approximately 2,400 jobs during the planning period. This growth would result in an increase of approximately 55,756 pounds per day of solid waste, which equals 27.9 tons per day or 9,924.6 tons of solid waste per year. The County's annual increase in solid waste generation is well within the permitted capacity of the regional landfills serving the County and does not even exceed the weekly permitted capacity of any of the regional landfills serving the County. The landfills serving the County have closure dates ranging from 2020 through 2081, with the exception of Potrero Hills. Landfills serving the County are anticipated to be operating with permitted capacity to accommodate the County's waste disposal needs during the 2030 General Plan planning horizon.

While there is adequate permitted capacity to accommodate future growth, the 2030 General Plan includes policies and actions to further reduce the project's impact on solid waste services. Policy PSF 2-7 requires the County to meet or exceed State-mandated waste diversion requirements. Policies PSF 2-6, 2-8, 2-10, 2-11, 2-12, and 2-13 encourage the recycling and re-use of materials to reduce solid waste disposal. Policies PSF 2-1, 2-4, and 2-5 encourage the diversion and proper disposal of hazardous materials. Actions PSF 2-A through PSF 2-H implement the 2030 General Plan's goals and policies to reduce solid waste, encourage recycling, and ensure proper disposal of solid waste and hazardous materials. The 2030 General Plan would not exceed the permitted capacity of the landfill's serving the County and the 2030 General Plan will comply with regulations related to solid waste. Therefore, impacts to solid waste are **less than significant** and no mitigation is necessary.

2030 GENERAL PLAN POLICIES AND ACTIONS

Policies

Policy PSF 2-1: Provide public education and outreach to inform residents and business of available resources for safe and legal disposal of solid waste and hazardous materials.

Policy PSF 2-3: Continue to implement and enforce Chapter 32: Solid Waste Management, of the Colusa County Municipal Code.

Policy PSF 2-4: Continue to implement and expand the County's "sharps-drop" program, which provides facilities for the safe disposal of needles and other sharp or hazardous solid waste.

Policy PSF 2-5: Support the continued operation of household hazardous waste material drop-off facilities.

Policy PSF 2-6: Encourage the salvage, re-use and/or recycling of demolition and construction material on all construction sites and encourage the re-use of salvage material in project construction.

Policy PSF 2-7: The County shall meet or exceed State mandated waste diversion requirements.

Policy PSF 2-8: Encourage agricultural waste diversion practices by the farming industry.

Policy PSF 2-9: County operations shall use recycled materials whenever feasible.

Policy PSF 2-10: Public buildings shall include facilities for the storage and disposal of recyclable materials.

Policy PSF 2-11: Support programs that re-use recycled materials and solid waste, such as the use of waste for bio-mass or bio-fuels for energy production.

Policy PSF 2-12: Provide adequate waste disposal, recycling and reuse services, including programs that improve public access to solid waste collection and recycling facilities.

Policy PSF 2-13: Collaborate with waste/recycling haulers to expand collection and recycling services.

Actions

Action PSF 2-A: Distribute public education materials regarding the proper handling and disposal of household hazardous waste, opportunities for recycling and composting, and resources for solid waste disposal available to County residents and businesses.

Action PSF 2-C: Evaluate the feasibility of establishing solid waste transfer and or processing facilities in other areas of the County, such as in Arbuckle.

Action PSF 2-F: Review with waste haulers the feasibility of establishing an expanded curbside pickup program to periodically pick up household hazardous waste and bulky items.

Action PSF 2-G: Establish a County-wide procurement process that favors the purchase of recycled products and/or materials that contain recycled materials.

Action PSF 2-H: Develop a program to encourage farms and other businesses to:

- 1. Establish a program that encourages diversion of agricultural waste through recycling, or reuse, such as use of natural resource byproducts like rice stubble, straw, manures, and cannery waste as soil amendments, fertilizers or fuel for biomass cogeneration facilities.*
- 2. Expand diversion rates of businesses through reuse and recycling efforts including proper recycling and hazardous waste disposal techniques.*
- 3. Increased use of recycled and green materials in the processing and production cycle.*
- 4. Reduced use of packing materials.*

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CEQA requires an EIR to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents discussion of CEQA-mandated analysis for cumulative impacts, irreversible impacts, and growth inducement associated with the 2030 General Plan.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

CUMULATIVE SETTING

Under CEQA, the discussion of cumulative impacts should focus on the severity of the impacts and the likelihood of their occurrence. The geographic scope for the cumulative analysis covers the unincorporated areas and incorporated cities within Colusa County.

Population and Housing

Population in the cumulative analysis area has steadily grown over the last several decades as shown by Table 4.0-1. The population has increased by 77 percent since 1970 with the unincorporated area increasing by 54 percent from 7,017 to 10,790 persons. Both cities have grown during this period, with the City of Williams' showing a significant increase of 236 percent while the City of Colusa's growth rate has been comparable to the unincorporated area. Over the past decade, the population in the unincorporated increased from 9,732 to 10,790 persons, an increase of 11 percent. The average annual change in the unincorporated area from 1970 to 2009 is 1.1 percent.

The population of the County increased by about 5,722 or by 35 percent over the last twenty years, while housing grew generally at proportional levels. The largest population growth period occurred between 2000 and 2005 when the area grew by more than 11 percent. Interestingly enough, housing units grew by about the same amount during this four year period after 2005, but due to the 2007-10 economic decline, population growth declined from 11.5 percent to about 5.3 percent. Due to this recent economic decline, growth over the next few years is anticipated to slow, but then increase again. The California Department of Finance has projected that cumulative analysis area will grow by 75 percent to 41,662 by the year 2050. This projected estimate is much more conservative compared to adjoining Counties of Sutter (176 percent) to the east and Glenn (105 percent) to the north, but is slightly higher than the Counties of Lake (58 percent) to the west and Yolo (59 percent) to the south.

TABLE 4.0-1: POPULATION GROWTH – COLUSA COUNTY AND CITIES

	1970	1980	1990	2000	2009	1970-2009 CHANGE	2000-2009 CHANGE	AVG. ANNUAL CHANGE
Colusa	3,842	4,075	4,934	5,402	5,889	53%	9%	1.1%
Williams	1,571	1,655	2,297	3,607	5,276	236%	46%	4.8%
Unincorporated	7,017	7,061	9,044	9,732	10,790	54%	11%	1.1%
Total County	12,430	12,791	16,275	18,741	21,955	77%	17%	1.6%

SOURCE: DEPARTMENT OF FINANCE, 2009

4.0 OTHER CEQA-REQUIRED TOPICS

Over the past decade, growth in the unincorporated area has been spread throughout the County, with significant amounts of growth occurring in Arbuckle, the rural area south of Arbuckle and west of I-5, and to the north and west of the City of Colusa. There are 7,864 housing units in the County, with 4,230 in the unincorporated area. The majority of housing units in the unincorporated area are single family, with mobile homes comprising the second largest type of housing unit. The vacancy rate in the unincorporated area is 13.6 percent, which means 3,656 of the housing units are occupied. The 3,656 households in the unincorporated area have an average household size of 2.93 persons.

Land Use

Existing land uses in the cumulative analysis area can be characterized in broad terms of agricultural cropland, rangeland, national forest and wildlife refuges, rural settlements, developed communities, and cities. As shown in Table 4.0-2, approximately 78 percent of the cumulative analysis total land area is devoted to cropland or underdeveloped rangeland based on the information from the California Department of Conservation. Twelve percent is in the national forest and national wildlife refuges. Approximately 85,187 acres are considered other lands, which include roadways, parkland, governmental/semi-public uses, industrial, commercial, and agricultural processing facilities located outside of developed communities and not included in the other categories. Less than one percent is devoted to urban and rural communities.

LAND USE CATEGORY	ACREAGE	PERCENT
Cropland	558,591	75%
Grazing Lands *	9,030	1%
National Forest	72,000	10%
National Wildlife Refuge	12,000	2%
Incorporated Cities (Colusa and Williams)	2,574	0.3%
Communities*	2,750	0.4%
Rural Subdivisions and Settlements **	1,200	0.2%
Other Lands	85,187	11%
Water Areas	2,000	0.3%
Total	740,932	100%

SOURCE: COLUSA COUNTY DEPARTMENT AGRICULTURAL

*Lands within the communities of Arbuckle, Maxwell, Princeton, Grimes, Stonyford, and in the unincorporated areas adjacent Colusa and Williams

**Includes vacant lots within Century Ranch and East Park Lake View Areas

URBAN AND RURAL COMMUNITIES

The two incorporated cities within the cumulative analysis area—Colusa and Williams—encompass about 2,574 acres. Adjoining these cities in the unincorporated portion of the cumulative analysis area, there is another approximately 600 acres of developed acreage with about 1,500 acres of land potentially developable. The largest unincorporated town and third largest community in the cumulative analysis area, Arbuckle, is somewhat smaller than Williams. There are five other

unincorporated communities in the cumulative analysis area, each originally laid out with narrow rectangular lots along a grid of right-angled streets. Maxwell is the largest of these communities, followed by Princeton, Grimes, Stonyford and College City. Together, these established incorporated and unincorporated towns cover a total area in “urban” uses of about 5,451 acres with a population that exceeds 17,000. This urbanized area has more than doubled in size over the last twenty years by 2,900 acres. The majority of urbanized and potentially urbanized areas in the County consist of residential use. Table 4.0-3 provides a distribution of land use between the various communities.

TABLE 4.0-3: DESIGNATED LAND USES BY COMMUNITY (UNINCORPORATED AREA)

LAND USE	ARBUCKLE		COLLEGE CITY		COLUSA		GRIMES	
	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS
Commercial	33.5	74	4.8	15	90.9	17	9.8	26
Industrial	61.8	30	139.5	9	799.8	19	7.6	12
No Label ¹	46.0	7	-	-	27.4	4	-	-
Parks & Recreation	24.8	3	7.9	2	252.4	10	-	-
Public/Semi-Public	77.5	8	-	-	159.9	3	6.3	2
Rural Residential	140.8	83	57.7	123	580.6	124	20.2	14
Urban Residential	319.1	928	-	-	529.2	399	39.6	102
Total	703.5	1,133	209.9	149	2,440.2	572	83.5	156
LAND USE	MAXWELL		PRINCETON		STONYFORD		WILLIAMS	
	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS	ACRES	PARCELS
Commercial	285.5	105	4.8	20	7.9	25	76.0	17
Industrial	749.5	32	-	-	-	-	277.4	18
No Label ¹	122.2	13	-	-	-	-	92.8	6
Parks & Recreation	-	-	-	-	-	-	10.6	1
Public/Semi-Public	19.6	3	30.7	11	141.3	10	11.8	1
Rural Residential	1,002.0	25	-	-	76	100.8	402.8	30
Urban Residential	278.3	403	78.0	131	-	-	513.2	138
Total	2,457.1	581	113.5	162	225.2	135.8	1,384.6	211

SOURCE: COLUSA COUNTY ASSESSOR DATA, 2009; DE NOVO PLANNING GROUP, 2010

¹No Label: This category includes all federal, state, and other agency lands that do not have a General Plan land use designation.

Approximately 60 percent of the population in the unincorporated portion of the cumulative analysis area resides within the eight identified primary communities. Table 4.0-4 provides estimates of population within the various communities. About 73 percent of all residents living within the primary unincorporated areas are located in the three largest communities of Arbuckle, Colusa, and Maxwell. Arbuckle and the unincorporated area around Colusa have experienced the greatest rates of growth over the last decade.

TABLE 4.0-4: COMMUNITY POPULATION, HOUSING UNITS, AND COMMERCIAL/INDUSTRIAL USES

COMMUNITY	POPULATION		POP. INCREASE	GROWTH RATE	HOUSING UNITS ¹	COMMERCIAL/ INDUSTRIAL SQ. FT. ²
	2000	2009				
Arbuckle	1,968	2,472	504	25.6%	962	104,892
College City	211	226	15	7.0%	88	7,818
Colusa Area	1,117	1,239	122	10.9%	482	127,387
Grimes	334	339	5	1.6%	132	21,113
Maxwell	999	1,015	16	1.6%	395	132,793
Princeton	379	398	19	5.0%	155	13,346
Stonyford/ Lodoga	464	501	38	7.9%	195	9,704
Williams Area	479	257	26	11.1%	100	21,771
Total	5,738	6,483	745	14.0%	2,464	438,824

SOURCE: U.S. CENSUS BUREAU 2000, CALIFORNIA DEPARTMENT OF FINANCE 2009, AND COLUSA COUNTY PLANNING AND BUILDING DEPARTMENT ESTIMATES BASED ON BUILDING PERMITS ISSUED.

¹Housing Units: Housing unit numbers are approximated based on Colusa County Assessor Data, which was extrapolated to the 2009 Department of Finance estimate of 4,230 units in the unincorporated area. These numbers include occupied housing units as well as seasonal residences, second units, and unoccupied housing units.

²Commercial and Industrial Square Feet (sq. ft.)

RURAL SETTLEMENTS

The remaining 4,265 people (41 percent) in the unincorporated portion of the cumulative analysis area live in isolated rural homesites, in small settlements with permanent populations of under 100 people, and on scattered farms. Only about three percent live in small rural communities. Some of the rural homesites are located on pockets of private land within the boundaries of the Mendocino National Forest. Others are scattered in the almond orchards southwest of Arbuckle, while still others are located in the Century Ranch and East of Park Lake View Acres in rural subdivisions near Stonyford. Table 4.0-5 provides rough estimates of population and acres for these rural communities.

TABLE 4.0-5: RURAL SETTLEMENT POPULATION (2009)

COMMUNITY	POPULATION	LAND AREA
Delevan	14	30 acres
Lambertville-Clarksville	26	26 acres
Leesville	6	10 acres
Miller's Landing	14	30 acres
Sites	10	30 acres
Sycamore	5	20 acres
Wilbur Springs	40	1,800 acres
Other Rural	4,114	NA
Total Rural:	4,229	NA

SOURCE: DE NOVO PLANNING GROUP, 2010

Pending and Approved Projects

Many of the approved and pending development projects in the cumulative analysis area have been placed on hold with the downturn in the economy. Several projects have been partially developed and are now developing at a slower pace or have ceased development. Table 4.0-6 lists recently approved and pending projects in the cumulative analysis area. The LAFCO has not received any annexation requests at this time. The last annexation that occurred in the cumulative analysis area was the Hoblit Annexation in 2001.

TABLE 4.0-6: APPROVED AND PENDING DEVELOPMENT PROJECTS

PROJECT	DESCRIPTION	STATUS
COUNTY OF COLUSA		
Reddington Ranch Arbuckle	Subdivision with 138 single-family residential lots and associated infrastructure for transportation and drainage purposes on approximately 34 acres.	Approved and map finalized. The site has been graded and partially constructed. 18 lots have been developed or are under construction; 120 lots remain to be developed.
The Richter Group Maxwell	Project with 19 single family residential lots and associated infrastructure for transportation and drainage purposes on approximately 5 acres.	Tentative map approved.
Wildwood Estates Arbuckle	Subdivision with 31 single family lots on approximately 6 acres.	Approved and map finalized. The site has been graded and partially constructed. Five lots have been developed; 26 lots remain to be developed.
Harris Court Partners Southwest of Williams	Tentative parcel map to divide 12 parcels totaling 2,467 acres into 19 large parcels zoned Agricultural Preserve.	Approved by Planning Commission, map not yet finalized.
LC Dennis Co.	Tentative subdivision map to divide 13.95 acres into nine single family residential parcels and a remainder.	Approved by the Planning Commission, pending approval by the Board of Supervisors of an associated General Plan Amendment.
TOTAL	Approved: 51 acres; 23 single family lots developed or under construction, 188 single family lots remain to be developed, 19 large Agriculture Preserve lots. Pending: 19 single family residential lots	
CITY OF COLUSA		
Brookins Ranch	161 acres, 586 single family homes, fire station, and supporting parks/recreation uses.	Application to annex into the City of Colusa has been withdrawn.
Colusa Industrial Properties (CIP) South of the city	Annexation of existing industrial and commercial campus. Detailed project information was not made available.	CIP entered into a 15-year agreement with the City of Colusa in 2003 but ended up receiving entitlements through the County. In 2009, Mr. Hulbert of CIP approached the City regarding re-engaging the agreement.

4.0 OTHER CEQA-REQUIRED TOPICS

		A formal application has not been made to LAFCO.
Riverbend Estates Northeast area – east of Bridge St/Market St	376-unit subdivision (271 single family units, and 105 multi-family units), rezone to Planned Development district, and supporting infrastructure.	Application is being processed.
Tennant Estates South area adjacent to Wescott	101 unit subdivision	Tentative map approved.
TOTAL	Approved: Approved 101 single family units. Pending: Approximately 1,000 single family units and supporting uses.	
CITY OF WILLIAMS		
Valley Ranch	Subdivision of approximately 550 single family residences.	Final map recorded. Approximately 370 units completed.
Meadowlands Subdivision	160-unit single family subdivision.	Tentative map approved.
George Estates	123-unit single family subdivision.	Tentative map approved.
McCarl Ranch	181-unit single family subdivision.	Tentative map approved.
V&R Investments - Unit 3	83-unit single family subdivision.	Tentative map approved.
Hotel Ruggieri Way	Approximately 100 room hotel.	Design review approved.
TOTAL	Approved: 370 single family units developed or under construction, 727 single family lots remain to be developed. One approved hotel remains to be developed.	

SOURCE: CITY OF WILLIAMS, 2010; CITY OF COLUSA ENGINEER'S REPORT, 2009; COLUSA COUNTY DEPARTMENT OF PLANNING AND BUILDING, 2010

CUMULATIVE EFFECTS OF THE PROJECT

Method of Analysis

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]). Cumulative impact analysis may be less detailed than the analysis of the Project's individual effects (State CEQA Guidelines 15130[b]).

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to identify potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. Because of the programmatic nature of the 2030 General Plan, this Draft EIR uses the projection approach for the cumulative analysis and considers buildout of the 2030 General Plan.

Cumulative Impacts

Cumulative impacts for most issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. In consideration of the cumulative scenario described above, the proposed project may result in the following cumulative impacts.

AESTHETICS

Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region (Considerable Contribution and Significant and Unavoidable)

The existing regional viewshed is composed primarily of large tracts of agricultural, grazing, and timber land with development concentrated in two incorporated cities and six unincorporated communities. While growth is anticipated to occur in the cumulative analysis area, the majority of growth is anticipated to occur in and around the incorporated cities and unincorporated communities. Development of land uses and associated infrastructure is planned to occur in the future to accommodate growth envisioned in the general plans that are effective within the cumulative analysis area.

The 2030 General Plan is representative of this planned development within the unincorporated portion of the cumulative analysis area. Regional growth has and will continue to result in a cumulative aesthetic effect by converting undeveloped land into developed and occupied areas and increasing overall levels of nighttime lighting. Cumulative development entails grading/landform alteration, the development of structures, and the installation of roadways and other infrastructure that has altered and will continue to permanently alter the region's existing visual character. Subsequent projects implemented under the 2030 General Plan would be required to be consistent with the policies and actions of the 2030 General Plan and adopted regulations pertaining to aesthetics and lighting of Colusa County. However, even with implementation of adopted policies and regulations, the 2030 General Plan has the potential to considerably contribute to permanent changes in visual character, such as obstruction of scenic views, conversion of existing visual character, and increased lighting. No feasible mitigation is available to fully reduce the cumulative effect on visual character, or to mitigate the proposed project's contribution to a less-than-significant level. Therefore, the 2030 General Plan's contribution to this cumulative impact is considerable and the impact is **significant and unavoidable**.

AGRICULTURAL AND TIMBER RESOURCES

Impact 4.2: Cumulative Impact on Agricultural and Timber Resources (Considerable Contribution and Significant and Unavoidable)

Cumulative development anticipated in the cumulative analysis area will result in the permanent loss of agricultural and/or timber land, including important farmlands, significant farmlands, land under Williamson Act contracts, and other farmlands. Cumulative levels of development in the region may also result in conflicts between agricultural or timber uses and uses that may consider operations a nuisance, such as residential uses, or otherwise conflict with agricultural or timber uses. Agricultural and timber land is a limited resource and the cumulative loss of this land is considered significant.

Subsequent projects implemented under the 2030 General Plan would be required to be consistent with the policies and actions of the 2030 General Plan. However, even with implementation of adopted policies and actions, the 2030 General Plan has the potential to considerably contribute to permanent conversion of agricultural and timber resources. No feasible mitigation is available to fully reduce the cumulative effect on these resources, or to mitigate the contribution to a less-than-significant level. Therefore, the 2030 General Plan's contribution to this cumulative impact is considerable and the impact is **significant and unavoidable**.

AIR QUALITY

Impact 4.3: Cumulative Impact on the Region's Air Quality (Considerable Contribution and Significant and Unavoidable)

Under the 2030 General Plan, the net change in mobile source emissions (ROG, NO_x, CO, and PM₁₀) in the cumulative analysis area over the planning horizon is a decrease (i.e. between 55 and 77 percent decrease for each criteria pollutant). Additionally, the net change in area-wide source emissions is a nominal increase (i.e. between two and six percent for each criteria pollutant with the exception of NO_x which has no change). There will be a net increase in construction source emissions in the cumulative analysis area as a result of new development. However, ROG, NO_x, and CO emissions are temporary and feasible control measures can be reasonably implemented to reduce particulate matter emissions during construction. The cumulative analysis area is not currently in federal non-attainment for CO or PM, there is a low likelihood of CO or PM hot-spots in the cumulative analysis area. The 2030 General Plan includes policies that will ensure that the potential for toxic emissions is appropriately evaluated on a project-by-project basis, and the exposure of toxics to sensitive receptors is avoided to the extent possible.

The 2030 General Plan is anticipated to result in additional stationary source emissions as a result of policies and actions that encourages the development of large-scale commercial energy projects that utilize renewable sources such as solar, biomass, and agricultural byproducts, and allows commercial alternative energy facilities, including solar and biomass in the Agriculture General, Agriculture Upland, Industrial, and Resource Conservation land use designations with a Conditional Use Permit. While these policies are specifically designed to benefit the overall air quality conditions and result in a per-capita decrease in emissions, they would result in an increase in

stationary source emissions in the cumulative analysis area. The 2030 General Plan includes policies and actions that require cooperation with the Colusa County Air Pollution Control District to monitor air pollution within the County, enforce APCD rules and regulations, and require mitigation of significant impacts to the maximum extent feasible. Any new stationary source within the cumulative analysis area would be subject to the requirements of the Colusa County APCD, including the requirements of the Authority to Construct and an Operating Permit. This permit process would ensure that the stationary source is designed and constructed with the best available control technology for reducing stationary source emissions. However, there are no mitigation measures that can eliminate emissions. The net change will be a significant increase in stationary source emissions in the cumulative analysis area as a result of increased non-residential uses and the addition of policies that encourage new stationary sources. Therefore, this is a **cumulatively considerable and significant and unavoidable** impact.

BIOLOGICAL RESOURCES

Impact 4.4: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Considerable Contribution and Significant and Unavoidable)

Cumulative development anticipated in the cumulative analysis area will result in impacts to biological resources, including the permanent loss of habitat for special-status species, corridor fragmentation, direct and indirect to special-status species, and reduction and degradation of sensitive habitat. Biological resources are a limited resource and the cumulative loss is considered significant.

Subsequent projects implemented under the 2030 General Plan would be required to be consistent with the policies and actions of the 2030 General Plan. However, even with implementation of adopted policies and actions, the 2030 General Plan has the potential to considerably contribute to a net reduction in habitat, and increased vehicle and human presence in the vicinity of special-status species and sensitive habitat. No feasible mitigation is available to fully reduce the cumulative effect on these resources, or to mitigate the contribution to a less-than-significant level. Therefore, the 2030 General Plan's contribution to this cumulative impact is considerable and the impact is **significant and unavoidable**.

CULTURAL RESOURCES

Impact 4.5: Cumulative Impacts on Known and Undiscovered Cultural Resources (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the 2030 General Plan may result in the discovery and removal of cultural resources, including archaeological, paleontological, historical, and Native American resources and human remains. The 2030 General Plan policies and actions, as well as state and federal regulations, will reduce the risk to people in the region. As discussed in Section 3.5, each project would require project-specific surveys for potential resources and to evaluate any resources discovered during construction activities. Adherence to these policies, actions and regulations will avoid and/or minimize a cumulative loss of these important resources if they are found during project-specific surveys or

construction. Therefore, the 2030 General Plan's incremental contribution to cumulative cultural resource impacts would be **less than cumulatively considerable**.

GEOLOGY, SOILS, AND MINERALS

Impact 4.6: Cumulative Impacts related to Geology and Soils (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the 2030 General Plan will result in risks associated with geology and soils. For example, there will always be a chance that a fault located anywhere in the state (or region) could rupture and cause seismic ground shaking, although the relative risk to safety from the potential ground shaking within most of the County is considered low. Additionally, grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Other geologic risk such as liquefaction, landsliding, lateral spreading, and soil expansion are also geologic risks that are present.

While some cumulative impacts will occur in the region as individual projects are constructed, the 2030 General Plan policies and actions, as well as state and federal regulations, will reduce the risk to people in the region. Considering the protection granted by local, state, and federal agencies and their requirements for the seismic design, as discussed in Section 3.6, the overall cumulative impact would not be significant. By the same token, the 2030 General Plan's incremental contribution to cumulative geologic and soil impacts would be **less than cumulatively considerable**.

GREENHOUSE GASES AND CLIMATE CHANGE

Impact 4.7: Increased Transportation Greenhouse Gas Emissions May Contribute to Climate Change (Less than Cumulatively Considerable)

The 2030 General Plan was developed to maximize the preservation of agricultural and open space lands, and to concentrate new urban development around and within existing established communities. The 2030 General Plan includes numerous policies that promote and encourage infill development, increased residential densities within existing communities, and permanent preservation of open space and agricultural lands. The Land Use Element includes two new land use designations that will further assist in the preservation of open space lands and the concentration of new development in and around existing developed areas. The Mixed Use land use designation provides for opportunities for increased development densities and a mix of land uses within a single parcel that can place housing in close proximity to retail and employment uses. The Urban Reserve Area land use designation provides for future areas of urban development adjacent to existing communities. The development of urban uses on the Urban Reserve Area parcels cannot occur until urban growth from the community center has reached the Urban Reserve Area, which avoids leapfrog development and results in more compact and cohesive urban areas.

The Agriculture Element includes policies and actions that facilitate the development of agricultural support uses, such as canning and processing, on agricultural lands, which reduces the

need to ship products long distances for processing, and creates additional in-County employment opportunities. The Agricultural Element also facilitates the approval and development of on-site alternative energy production to support agriculture and processing activities. Policies promote the development of on-site solar systems, which can reduce the demand for fossil fuel based energy.

The Circulation Element includes policies that require and promote the development of “complete streets”, which provide opportunities for multimodal transportation and reduced VMT. The Circulation Element also promotes the development and expansion of several forms of alternative transit, including bicycle transportation, rail, bus routes, and pedestrian connectivity.

The Conservation Element includes several policies that require water and energy conservation measures in new and existing development, and promotes the use of green building practices and sustainable farming practices.

The Open Space Element includes policies and actions that require the preservation of open space lands and the maintenance of open space buffers between urbanized areas.

All of the policies and actions provided in the 2030 General Plan would encourage the development of compact urban communities, while preserving the agricultural and open space resources within the cumulative analysis area. This comprehensive approach to this issue would result in increased local employment opportunities, increased opportunities for the local production of clean energy, increased transportation and transit options, and the incorporation of conservation and energy efficiency into new development. The proposed 2030 General Plan is consistent with the policy guidance provided by CAPCOA, and would assist the state in meeting the GHG reduction goals established by AB 32. The 2030 General Plan's incremental contribution to cumulative greenhouse gases and climate change impacts would be **less than cumulatively considerable**.

HAZARDS

Impact 4.8: Cumulative impacts from hazardous materials and human health risks. (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the 2030 General Plan may involve the transportation, use, and/or disposal of hazardous materials, which may involve the use of equipment that contains hazardous materials (e.g., solvents and fuels, diesel-fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated. Furthermore, because of the regional nature of the 2030 General Plan, some will inevitably transport or use hazardous materials within ¼ mile of a school, or other sensitive receptors such as hospitals and residences.

While some cumulative impacts will occur in the region as individual projects are constructed, the 2030 General Plan policies and actions, as well as state and federal regulations, will reduce the risk to people in the region. Considering the protection granted by local, state, and federal agencies

and their requirements for the use of hazardous materials in the region, as discussed in Section 3.8, the overall cumulative impact would not be significant. By the same token, the 2030 General Plan's incremental contribution to cumulative hazards and human health impacts would be **less than cumulatively considerable**.

HYDROLOGY AND WATER QUALITY

Impact 4.9: Cumulative impacts from to Hydrology and Water Quality. (Less than Cumulatively Considerable)

Construction of the individual development projects allowed under the land use designations of the 2030 General Plan has the potential to have construction and dewatering related water quality impacts, impacts to groundwater recharge, and cause flooding, erosion, or siltation from the alteration of drainage patterns.

While some cumulative impacts will occur in the region as individual projects are constructed, the 2030 General Plan policies and actions, as well as state and federal regulations, will substantially reduce the impacts. Considering the protection granted by local, state, and federal agencies and their permit and monitoring requirements, as discussed in Section 3.9, the overall cumulative impact would not be significant. By the same token, the 2030 General Plan's incremental contribution to cumulative hydrology impacts would be **less than cumulatively considerable**.

LAND USE AND POPULATION

Impact 4.10: Cumulative Impact on Communities and Local Land Uses (Less than Considerable Contribution)

Cumulative land use and planning impacts, such as the potential for conflicts with adjacent land uses and consistency with adopted plans and regulations, are typically site- and project-specific. It may be determined in the project-specific design phase of a development project that an individual project may require removal of homes and result in the displacement of people and housing; however, these effects are not cumulatively considerable because there is adequate replacement housing available under the 2023 General Plan. Additionally, any removal of homes would require adequate compensation to the homeowner in accordance with federal and state laws.

The land uses allowed under the 2030 General Plan provide opportunities for cohesive new growth at in-fill locations within existing communities, as well as new growth areas adjacent to existing communities, but would not create physical division within existing communities. New development and redevelopment projects would be designed to complement the character of existing communities and provide connectivity between existing development and new development within the cumulative analysis area. The 2030 General Plan does not include any new roadways, infrastructure, or other features that would divide existing communities. The 2030 General Plan's incremental contribution to cumulative land use and population impacts would be **less than cumulatively considerable**.

NOISE

Impact 4.11: Cumulative Exposure of Noise-Sensitive Land Uses to Noise in Excess of Normally Acceptable Noise Levels or to Substantial Increases in Noise (Considerable Contribution and Significant and Unavoidable)

Development in the cumulative analysis area would cause some areas to experience greater construction and operational noise disturbances relative to others. This would result as noise sensitive development becomes more clustered near noise producing land uses, including roadways. The 2030 General Plan indirectly increases noise levels by accommodating additional growth and ultimately allowing more traffic on roadways.

The 2030 General Plan establishes noise-related policies that, when implemented, protect sensitive receptors from significant noise. The policies that are laid out in the Noise Element of the 2030 General Plan are consistent with federal and state regulations designed to protect noise sensitive receptors. Although the policy and regulatory controls for noise-related impacts are in place in the cumulative analysis area, subsequent development allowed under the 2030 General Plan would result in an increase in noise. For most projects, consistency with the adopted policies and action would help to reduce exposure of sensitive receptors to noise levels. However, it may not be feasible to mitigate this impact to a less-than-significant level in all instances, particularly in areas where existing development is located near proposed development. Although the policy and regulatory controls for noise related impacts are in place in the cumulative analysis area, subsequent development projects may result in an increase in ambient noise levels at specific project locations, which may subject surrounding land uses to increases in ambient noise levels. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

PUBLIC SERVICES AND RECREATION

Impact 4.12: Cumulative Impact on Public Services and Recreation (Less than Cumulatively Considerable)

Cumulative growth that would occur within the cumulative analysis area over the life of the 2030 General Plan will result in increased demand for public services, including fire protection, law enforcement, schools, parks, libraries, and other public and governmental services. As the demand for public services and recreation increases, there will likely be a need to increase staffing and equipment in order to maintain acceptable service ratios, response times, and other performance standards. New or expanded service structures (e.g., offices, maintenance and administrative buildings, schools, parks, fire departments, libraries, etc.) will be needed to provide for adequate staffing, equipment, and appropriate facilities to serve growth within the cumulative analysis area.

The 2030 General Plan includes a range of policies and actions that would ensure that public services are provided in a timely fashion, are adequately funded, are coordinated between the County and appropriate service agency, and that new development funds its fair share of services. The 2030 General Plan includes policies to ensure that fire protection and law enforcement services keep pace with new development and that school, library, and governmental services are adequately planned and provided. The 2030 General Plan also includes an action to maintain a

Capital Improvement Program to defray the cost of developing public facilities. The 2030 General Plan's incremental contribution to cumulative public services and recreation impacts would be **less than cumulatively considerable**.

TRANSPORTATION AND CIRCULATION

Impact 4.13: Cumulative Impact on the Transportation Network (Considerable Contribution and Significant and Unavoidable)

Under cumulative conditions, the increase in development is anticipated to result in an estimated 31 percent increase in travel within the cumulative analysis area. Interstate 5, SR 16, SR 20, and SR 45 will continue to serve as the primary roadways serving longer regional trips for the cumulative analysis area. SR 20 between Wescott Road to Fremont Street will continue to be one of the busiest roadways in the cumulative analysis area. The 2030 General Plan includes widening this segment of SR 20 from one- to two-lanes in each direction (with turn lanes), which would improve conditions to an acceptable level of service.

In addition to these primary roadways, the 2030 General Plan would result in increased traffic congestion on other local and regional roadways, as well as result in increased demand for transit, bicycle/pedestrian, rail, and aviation facilities and infrastructure. While implementation of the respective 2030 General Plan would result in improvements to these facilities to ensure an acceptable LOS, the timing and funding for the needed improvements is not certain. The 2030 General Plan includes policies and actions that identify the collection of fair-share cost of all feasible transportation improvements necessary to reduce the severity of cumulative transportation impacts and to negotiate with the cities to achieve mutually beneficial outcomes including development impact fees for funding of regional roadways. These policies and actions are crafted so that new County development pays a fair share proportion of the cost for regional circulation improvements.

While implementation of the policies and actions included in the 2030 General plan are intended to either result in the direct construction of improvements to maintain an acceptable level of service, or result in a fair-share funding toward roadway impacts on facilities, there is no guarantee that full funding for the identified improvements will be available when the improvements are needed. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

UTILITIES AND SERVICE SYSTEMS

Impact 4.14: Cumulative Impact on Utilities (Considerable Contribution and Significant and Unavoidable)

Cumulative growth that would occur within the cumulative analysis area over the life of the 2030 General Plan will result increased demand for water service, sewer service, solid waste disposal services, and stormwater infrastructure needs.

Water: The 2030 General Plan would increase the water need by up to 1,039 AFY within the cumulative analysis area. Since some future development will occur on irrigated farm land, some

of the water demand associated with the 2030 General Plan would be off-set by the conversion of irrigated farm land to developed land. It is anticipated that groundwater would be the primary source for the 1,039 AFY of water necessary to supply new development. The increased water demand is less than 0.1 percent of the County's total water usage and would change groundwater pumping rates by less than 0.5 percent. While the increase in water usage would not be substantial on the cumulative analysis area as a whole, there are areas of the area, particularly in the mountainous areas of the eastern County (e.g., Stonyford, Century Ranch, and Lodoga areas), where there is limited water supply to support new development at urban densities.

The 2030 General Plan, the County's Zoning Ordinance, and the County's Groundwater Management Ordinance would ensure that new development is only approved if there is adequate water supply and measures are implemented to reduce water demand; however, there would still exist the potential for adverse environmental effects associated with water usage, through increased groundwater pumping or future surface water diversions, to serve development in specific areas over the life of the 2030 General Plan. While the specific well sites and potential diversion locations are not known, increased water usage could result in effects on groundwater levels, groundwater quality, surface water quality, surface water levels, and land stability (e.g., subsidence) within the cumulative analysis area. The only measure that would fully mitigate this impact would be to allow a minimal amount of new development, which is not consistent with the goals of the 2030 General Plan. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

Wastewater: The 2030 General Plan would result in increased wastewater flows in the cumulative analysis area, resulting in the need for additional wastewater treatment facilities and conveyance infrastructure. The 2030 General Plan would generate an additional 1.24 mgd in wastewater effluent. This anticipates growth in or near communities served by a community wastewater treatment system during the planning horizon. As future development and infrastructure projects are considered, each project will be evaluated for conformance with the 2030 General Plan, Zoning Ordinance, and other applicable regulations. Subsequent development and infrastructure projects would also be analyzed for potential environmental impacts, consistent with the requirements of CEQA.

The 2030 General Plan, the County's Zoning Ordinance, and the wastewater treatment requirements would ensure that new development in the cumulative analysis area is only approved if there is adequate wastewater capacity to serve the development; however, there would still exist the potential for adverse environmental effects associated with increased wastewater treatment, conveyance, and disposal to serve development in specific areas over the life of the 2030 General Plan. However, wastewater treatment facility, conveyance, and disposal infrastructure improvements necessary to accommodate such service may result in significant environmental impacts. The only measure that would fully mitigate this impact would be to allow a minimal amount of new development, which is not consistent with the goals of the 2030 General Plan. Therefore, this is considered a **cumulatively considerable and significant and unavoidable** impact.

Solid Waste: The 2030 General Plan will generate a population increase of approximately 4,030 persons and an increase in employment of approximately 2,400 jobs within the cumulative analysis area during the planning period. This growth would result in an increase of approximately 55,756 pounds per day of solid waste, which equals 27.9 tons per day or 9,924.6 tons of solid waste per year. The annual increase in solid waste generation is well within the permitted capacity of the regional landfills serving the cumulative analysis area and does not exceed the weekly permitted capacity of any of the regional landfills serving the cumulative analysis area. The landfills serving the cumulative analysis area have closure dates ranging from 2020 through 2081, with the exception of Potrero Hills. Landfills serving the cumulative analysis area are anticipated to be operating with permitted capacity to accommodate the waste disposal needs during the 2030 General Plan planning horizon. The 2030 General Plan's incremental contribution to cumulative solid waste impacts would be **less than cumulatively considerable**.

4.2 GROWTH-INDUCING EFFECTS

INTRODUCTION

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth...It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand (*Napa Citizens for Honest Government v. Napa County Board of Supervisors*). Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure,

increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

The 2030 General Plan is a long term plan intended to accommodate projected population, housing and employment growth, including the appropriate balance among these factors with the necessary public services and infrastructure. The 2030 General Plan would serve as a comprehensive, long-term plan for the physical development of Colusa County. Projected growth is described in Section 3.10 Land Use and Population, and the environmental consequences related to the potential growth are fully assessed in each topical section. By definition, the Draft General Plan is intended to provide for and address future growth in the County.

Because the 2030 General Plan provides a framework for development through its land use map, land use designations, goals, policies, and actions it would directly induce population and employment growth in the unincorporated County by designating land for development that is more intense than current designations allow. The analysis of the indirect growth-inducing impacts for the 2030 General Plan focuses on the following factors: inducement unanticipated population growth; encourage economic growth that leads to jobs and housing growth; elimination of obstacles to population growth; and result in service, facility, or infrastructure demand in excess of existing and planned growth.

The 2030 General Plan accommodates future growth in Colusa County, including new businesses, expansion of existing businesses, and new residential uses. Infrastructure and services would need to accommodate future growth. The 2030 General Plan is oriented toward the economic growth of the County, with emphasis given to enhancing the County's agricultural sector, encouraging development of a broader array of businesses, and providing residential development as necessary to serve economic growth. The 2030 General Plan would accommodate approximately 1,385 new homes and 610,874 square feet of industrial, commercial, public facility, and other non-residential uses through 2030, as described in Chapter 2.0. Depending on growth rates, the actual growth during the life of the General Plan, could be lower or higher, but would not exceed the theoretical buildout described in Chapter 2.0.

Given the historical and current population, housing, and employment trends, growth in the County, as well as the entire state, is inevitable. The primary factors that account for population growth are natural increase and net migration. The average annual birth rate for California is expected to be 20 births per 1,000 population. Additionally, California is expected to attract more than one third of the Country's immigrants. Other factors that affect growth include the cost of housing, the location of jobs, the economy, the climate, and also, transportation. While these

factors would likely result in growth in Colusa County during the planning period of the 2030 General Plan, the 2030 General Plan includes policies and actions designed to spur additional economic growth in the County, which could result in additional population growth.

As future development occurs under the 2030 General Plan, new roads, infrastructure, and services would be necessary to serve the development. The 2030 General Plan includes policies and actions that mitigate environmental impacts associated with growth, such as air quality, noise, traffic, water supply, and water quality effects. Chapters 3.1 through 3.9 and 3.11 through 4.0 provide a discussion of environmental effects associated with development allowed under the proposed 2030 General Plan. With implementation of General Plan policies and actions, development under the 2030 General Plan and its associated growth would result a **less than significant** impact.

4.3 SIGNIFICANT IRREVERSIBLE EFFECTS

CEQA requires that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes of project implementation. CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irrecoverable commitments of resources should be evaluated to assure that such current consumption is justified.

Consumption of Nonrenewable Resources

Consumption of nonrenewable resources refers to the loss of physical features within the natural environment, including the conversion of agricultural lands, loss of access to mining reserves, and nonrenewable energy use. The County has multiple nonrenewable resources including agricultural resources, forest resources, biological resources, mineral resources, and energy resources.

One of the primary objectives of the 2030 General Plan is to conserve agricultural and other natural resources. As such, the 2030 General Plan focuses all new development to infill areas, and areas surrounding existing communities. As a result of this design, the 2030 General Plan will minimize the potential for impacts to the nonrenewable resources in the County, including agricultural resources, forest resources, biological resources, mineral resources, and energy resources .

Non-renewable energy resources such as electricity, natural gas, propane, gasoline, and diesel would be consumed during the construction and operation of development projects allowed under the 2030 General Plan. The 2030 General Plan includes a variety of policies that seek conserve,

protect, and enhance energy resources. These policies focus on energy efficiency in the design, materials, construction, and use of buildings, the use of alternative energy systems, development of large scale renewable energy sources, and management of agricultural, timber, and mineral resources.

Irretrievable Commitments/Irreversible Physical Changes

The 2030 General Plan would result in a commitment of land uses designated for the foreseeable future. Under the 2030 General Plan, 97.2 percent of the County would remain designated for agricultural, forest, resource conservation, and designated floodway, while the remaining 2.8 percent would be designated for development and supporting uses. Overall, the 2030 General Plan would result in the conversion of about 6,850 acres of agricultural land. This acreage amounts to 1.2 percent of the existing agricultural land in the County. Land use and development consistent with the 2030 General Plan would result in irretrievable commitments by introducing development onto sites that are presently undeveloped. The conversion of agricultural lands to urban uses would result in an irretrievable loss of agricultural land, wildlife habitats, and open space. Additionally, development will physically change the environment in terms of aesthetics, air emission, noise, traffic, open space, and natural resources. These physical changes are irreversible after development occurs. Therefore, the 2030 General Plan would result in changes in land use within the unincorporated County that would commit future generations.

Impact 4.15: Irreversible Effects (Significant and Unavoidable)

In summary, the 2030 General Plan includes an extensive policy framework that is designed to address land use and environmental issues to the greatest extent feasible while allowing growth and economic prosperity for the County. However, even with the policies and actions that will serve to reduce potential significant impacts, the 2030 General Plan will result in significant irreversible changes. This impact is considered a **significant and unavoidable** impact under CEQA.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the 2030 General Plan are discussed in Chapter 3 and previously in this chapter (cumulative-level). Refer to those discussions for further details and analysis of the significant and unavoidable impact identified below:

- Impact 3.1-1: General Plan Implementation could result in Substantial Adverse Effects on Visual Character, including Scenic Vistas or Scenic Resources (significant and unavoidable)
- Impact 3.2-1: Conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (significant and unavoidable)
- Impact 3.3-2: Stationary Source Emissions (significant and unavoidable)
- Impact 3.8-4: Impact to people residing or working within two miles of a public airport, public use airport, or private airstrip (significant and unavoidable)

4.0 OTHER CEQA-REQUIRED TOPICS

- Impact 3.9.5 General Plan Implementation Could Place Housing and Structures 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 (significant and unavoidable)
- Impact 3.10-2: Conflicts with Applicable Land Use Plan, Policy, or Regulation Adopted to Avoid or Mitigate an Environmental Effect (Significant and Unavoidable)
- Impact 3.11-1: Traffic Noise Sources (significant and unavoidable)
- Impact 3.13-2: Implementation of the Draft General Plan would contribute vehicle trips to roadway project to operate worse than the LOS thresholds of the incorporated Cities of Colusa and Williams (significant and unavoidable)
- Impact 3.13-3: Implementation of the Draft General Plan would Result in Increased Traffic on State Highways and Facilities (significant and unavoidable)
- Impact 3.14-1: Increased Demand for Water Supply (Significant and Unavoidable)
- Impact 3.14-2: The project would generate wastewater that would be conveyed and treated at an existing wastewater treatment plant (significant and unavoidable)
- Impact 4.1: Cumulative Degradation of the Existing Visual Character of the Region (Considerable Contribution and Significant and Unavoidable)
- Impact 4.2: Cumulative Impact on Agricultural and Timber Resources (Considerable Contribution and Significant and Unavoidable)
- Impact 4.3: Cumulative Impact on the Region's Air Quality (Considerable Contribution and Significant and Unavoidable)
- Impact 4.4: Cumulative Loss of Biological Resources Including Habitats and Special Status Species (Considerable Contribution and Significant and Unavoidable)
- Impact 4.11: Cumulative Exposure of Noise-Sensitive Land Uses to Noise in Excess of Normally Acceptable Noise Levels or to Substantial Increases in Noise (Considerable Contribution and Significant and Unavoidable)
- Impact 4.13: Cumulative Impact on the Transportation Network (Considerable Contribution and Significant and Unavoidable)
- Impact 4.14: Cumulative Impact on Utilities (Considerable Contribution and Significant and Unavoidable)
- Impact 4.15: Irreversible Effects (Significant and Unavoidable)

5.1 CEQA REQUIREMENTS

CEQA requires that an EIR analyze a reasonable range of feasible alternatives that meet most or all of the project objectives while reducing or avoiding one or more significant environmental effects of the project. The range of alternatives required in an EIR is governed by a “rule of reason” that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the range of alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

A Notice of Preparation was circulated to the public to solicit recommendations for a reasonable range of alternatives to the 2030 General Plan. No specific alternatives were recommended by commenting agencies or the general public during the NOP public review process.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

FACTORS GUIDING SELECTION OF ALTERNATIVES

The alternatives to the 2030 General Plan selected for analysis in the EIR were developed to minimize significant environmental impacts while fulfilling the basic objectives of the project. The significant environmental impacts associated with the project relate to aesthetic resources, conversion of farmlands, air pollutant emissions associated with stationary sources, airport land use conflicts and hazards, exposure to flooding, traffic noise, roadway impacts to local municipalities and Caltrans, increased demand for water supply, increased demand for wastewater treatment, irreversible effects of growth, and cumulative effects associated with biological resources, noise, circulation, utilities. Significant impacts are summarized in Chapter 4 and described in greater detail in Chapters 3.1 through 3.14.

As described in Chapter 2, Project Description, the following objectives have been identified for the proposed project.

- Reflect the current goals and vision expressed by County residents, businesses, decision-makers, and other stakeholders;
- Address issues and concerns identified by County residents, businesses, decision-makers, and other stakeholders;
- Maintain and enhance the County’s agricultural and rural quality of life;
- Focus new residential growth in and around existing communities;
- Increase opportunities for economic development, including accommodating a broader range of agricultural and agricultural support uses;
- Minimize new regulations or limitations on property use; and

- Address new requirements of State law.

ALTERNATIVES TO THE 2030 GENERAL PLAN

Three alternatives to the 2030 General Plan were considered based on the analysis performed to identify the environmental effects of the proposed project. Since the 2030 General Plan was prepared with the intent to be a self-mitigating document, project alternatives focused on amending land uses to address significant impacts. The alternatives analyzed in this EIR include the following:

- **Alternative 1: Reduced Land Use Intensity Alternative.** Under Alternative 1, urban and industrial development under the 2030 General Plan Land Use Map would be focused more tightly around existing communities as shown on Figure 5-1. Approximately 3,026 acres of land designated Urban Residential, Urban Reserve Area, and Industrial would be changed to Agricultural General and Agricultural Transition designations. This alternative would result in less growth and is intended to reduce impacts associated with traffic, air quality, noise, and farmland conversion.
- **Alternative 2: Revised Land Use (Airport Area) Alternative.** Alternative 2 would revise the 2030 General Plan to avoid land use impacts and potential safety hazards associated with conflicts between the Colusa County Airport Comprehensive Land Use Plan and the uses allowed under the 2030 General Plan.
- **Alternative 3: No Project Alternative.** Under Alternative 3, the County would not adopt the 2030 General Plan. The 1989 General Plan would continue to be implemented and no changes to the General Plan, including the Land Use Map and Circulation Diagram, goals, policies, or actions would occur. Subsequent projects, such as amending the County Code and Zoning Ordinance, would not occur.

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5-5 summarizes the comparative effects of each alternative.

ALTERNATIVE 1

Alternative 1 was created to reduce environmental impacts associated with the growth accommodated by the 2030 General Plan by reducing the extent to which growth could be spread around most of the existing communities and also reducing the amount of industrial and commercial growth that could occur outside of existing community areas along the I-5 corridor. This alternative was specifically developed to reduce impacts to important farmlands, as well as traffic, noise, and air quality impacts that would occur under cumulative conditions, while continuing to allow for future growth.

Under Alternative 1, future growth would be more tightly concentrated in and around existing communities and the overall level of urbanization that could occur under cumulative conditions would be reduced. Land uses would be modified from those under the 2030 General Plan as shown on Figure 5-1 and summarized in Table 5-1. The goals, objectives, policies, and actions of the 2030 General Plan would apply to subsequent development, planning and infrastructure projects.

As shown in Table 5-1, Alternative 1 would designate 3,026 more acres for agricultural, open space and resource uses and would reduce more intense development, including residential, commercial, and industrial uses by 3,026 acres compared to the proposed project.

TABLE 5-1: GENERAL PLAN LAND USE DESIGNATIONS COMPARISON			
<i>LAND USE DESIGNATION</i>	<i>PROPOSED PROJECT - 2030 GENERAL PLAN (ACRES)</i>	<i>ALTERNATIVE 1 – REDUCED LAND USE INTENSITY (ACRES)</i>	<i>DIFFERENCE</i>
Agricultural, Open Space, and Resource Lands			
Agriculture-General	339,902	341,991	2,089
Agriculture-Transition	5,008	5,945	937
Agriculture-Upland	229,362	229,362	0
Designated Floodway	12,953	12,953	0
Forest Lands	73,145	73,145	0
Resource Conservation	44,094	44,094	0
Upland-Transition	0	0	0
Subtotal	704,4640	7,047,666	3,026
Commercial, Industrial, and Mixed Use			
Commercial	914	834	-80
Industrial	7,143	5,070	-2,073
Mixed Use	29	29	0
Subtotal	8,086	5,933	-2,153
Public Services and Facilities			
Parks and Recreation	458	458	0
Public/Semi-Public Services	583	583	0
Subtotal	1,041	1,041	0
Residential			
Rural Residential	2,256	2,217	-39
Rural Service Center	88	88	0
Urban Residential	2,296	2,053	-243
Subtotal	4,640	4,358	-282
Future Growth Areas			
Urban Reserve Area	1,996	1,404	-592
Other			
Tribal Lands	894	894	0
No Label*	3,611	3,611	0
Subtotal	4,505	4,505	0
TOTAL	724,731	724,731	0

During the planning horizon, the total amount of residential and non-residential growth under Alternative 1 would be comparable to the proposed project, as both General Plan maps have adequate sites to accommodate growth over the next 20 – 30 years and market conditions (e.g., housing demand, statewide growth rate, economic conditions, availability of financing, etc.) would be the primary force determining the rate and amount of residential growth. The 2030 General Plan policies and actions that encourage economic development and specifically allow a broader range of agricultural-support uses and encourage new industries to locate in the County would apply to Alternative 1. Under cumulative buildout conditions, which could occur 50 to 100 years, or longer, in the future, Alternative 1 would result in less growth than the proposed project as shown in Table 5-2.

TABLE 5-2: FUTURE GROWTH UNDER THE PROPOSED PROJECT AND ALTERNATIVE 1

	PROPOSED PROJECT	ALTERNATIVE 1
Planning Horizon (2030)		
New Residential Growth	1,385	1,385
Non-Residential/Employment-Generating Growth	610,874	610,874
Cumulative Buildout (2060 and beyond)		
New Residential Growth	17,236	15,061
Non-Residential/Employment-Generating Growth	7,137,081	5,905,082

Adverse Effects on Visual Character

The proposed project would result in significant and unavoidable impacts associated with adverse effects on visual character, including scenic resources, as described under Impact 3.1-1 in Chapter 3.1. Under Alternative 1, development would be more tightly concentrated around existing communities and less development would occur along the I-5 corridor between existing communities. However, a broad range of growth would still occur under this alternative, including more intense uses on agricultural and open space lands. Existing views, including views of agricultural and open space as well as of scenic resources described in Chapter 3.1, would still be significantly altered or obscured from certain vantage points. Therefore, although the project would result in a reduced impact due to the decrease in the overall amount of growth as well as the location of growth, the impact to existing and scenic view would continue to be significant and unavoidable.

Conversion of Farmlands

The proposed project would result in significant and unavoidable impacts associated with the conversion of farmlands to non-farmland uses, as described under Impact 3.2-1 in Chapter 3.2. Alternative 1 would result in the conversion of 43 percent less farmland than the proposed project. Under Alternative 1, 2,949 acres of farmland, including 2,765 acres of Prime Farmland, 114 acres of Unique Farmland, and 70 acres of Farmland of Local Importance would remain designated for agricultural use that would be designated for potential conversion to non-agricultural uses under the proposed project. However, even with this reduction in the amount

of farmland potentially converted, Alternative 1 could still result in the conversion of 3,900 acres of farmland, compared to 6,850 acres that could be converted under the proposed project. While Alternative 1 would significantly reduce the extent of the impact associated with farmland conversion when compared to the proposed project, this impact would remain significant and unavoidable under Alternative 1 due to the 3,900 acres of farmland that would be converted.

Airport Hazards/Land Use Conflicts

The proposed project would result in airport hazards and land use conflicts associated with land use designations in the Colusa County Airport clear and overflight zones as described under Impacts 3.8-4 and 3.10-2 in Chapters .8 and 3.10, respectively. Alternative 1 would reduce the potential for hazards associated with airport operations and land use conflicts by changing the land use designation of some of the lands within the overflight zone from Urban Residential to Agricultural Transition. The Agricultural Transition designation would allow residential densities consistent with those allowed under the Colusa County Airport Comprehensive Land Use Plan (CLUP), while the Urban Residential designation would require minimum densities that are higher than those allowed by the CLUP. However, a portion of lands within the clear and overflight zones would remain in conflict with the Colusa County Airport Comprehensive Land Use Plan. Therefore, while Alternative 1 would reduce the extent of the impact associated with airport hazards, this impact would remain significant and unavoidable under Alternative 1.

Flooding

The proposed project would result in significant and unavoidable impacts associated with flood hazards as described under Impact 3.9-5 in Chapter 3.9. Under Alternative 1, 3,026 acres of land would be re-designated from designations that would allow urban levels of development to less intense agricultural designations. 677 acres of land in the 100-year floodplain would no longer be potentially urbanized under Alternative 1. Although the potential for development in areas subject to flooding would be reduced under Alternative 1, this alternative would still result in concentrating new development, including housing and structures, in and around existing communities. As with the proposed project, much of this development would be subject to flooding under 100-year, 200-year, and levee failure conditions and would result in overall flood impacts. Therefore, this impact would remain significant and unavoidable.

Traffic Noise

The proposed project would result in significant and unavoidable impacts associated with traffic noise as described under Impact 3.11-1 in Chapter 3.1. Under Alternative 1, while there would be a reduction in lands designated for growth, it is anticipated that growth during the planning horizon would be generally comparable to growth under the proposed project. Both Alternative 1 and the proposed project include policies that encourage growth to occur within or around existing communities and discourage leapfrog development. Both Alternative 1 and the proposed project have more than enough lands designated for residential, commercial, industrial, and other growth to accommodate growth during the planning horizon. Therefore, there would not be an appreciable reduction in traffic noise under Alternative 1 compared with

the levels anticipated for the proposed project. This impact would remain significant and unavoidable.

Circulation Impacts – Cities of Colusa and Williams/Caltrans

The proposed project would result in significant and unavoidable impacts associated with roadways under the jurisdiction of Caltrans and the Cities of Colusa and Williams as described under Impacts 3.13-2 and 3.13-3 in Chapter 3.13. Under Alternative 1, while there would be a reduction in lands designated for growth, it is anticipated that growth during the planning horizon would be generally comparable to growth under the proposed project. Both Alternative 1 and the proposed project include policies that encourage growth to occur within or around existing communities and discourage leapfrog development. Both Alternative 1 and the proposed project have more than enough lands designated for residential, commercial, industrial, and other growth to accommodate growth during the planning horizon. Therefore, there would not be an appreciable reduction in traffic levels associated with facilities under the jurisdiction of the Cities of Colusa and Williams or Caltrans under Alternative 1. Under Alternative 1, implementation of measures to reduce impacts associated with facilities under the jurisdiction of Caltrans or the Cities of Colusa and Williams would remain outside of the control of the County, as described in Chapter 3.13. This impact would remain significant and unavoidable.

Water Supply

The proposed project would result in significant and unavoidable impacts associated with the environmental effects of increased water demand to serve new growth as described under Impact 3.14-1 in Chapter 3.14. Under Alternative 1, while there would be a reduction in lands designated for growth, it is anticipated that growth during the planning horizon would be generally comparable to growth under the proposed project. Both Alternative 1 and the proposed project include policies that encourage growth to occur within or around existing communities and discourage leapfrog development. Both Alternative 1 and the proposed project have more than enough lands designated for residential, commercial, industrial, and other growth to accommodate growth during the planning horizon. Therefore, there would not be an appreciable reduction in water demand under Alternative 1 compared with the levels anticipated for the proposed project. Impacts associated with increasing the water supply to serve growth and development would be comparable under the 2030 horizon of Alternative 1 and the proposed project. This impact would remain significant and unavoidable.

Wastewater Treatment

The proposed project would result in significant and unavoidable impacts associated with the environmental effects of increased demand for wastewater treatment to accommodate growth as described under Impact 3.14-2 in Chapter 3.14. Under Alternative 1, while there would be a reduction in lands designated for growth, it is anticipated that growth during the planning horizon would be generally comparable to growth under the proposed project. Both Alternative 1 and the proposed project include policies that encourage growth to occur within or around existing communities and discourage leapfrog development. Both Alternative 1 and the

proposed project have more than enough lands designated for residential, commercial, industrial, and other growth to accommodate growth during the planning horizon. Therefore, there would not be an appreciable reduction in wastewater generation and the associated need for treatment, conveyance, and disposal facilities under Alternative 1 compared with the levels anticipated for the proposed project. Impacts associated with wastewater treatment to serve growth and development would be comparable under the 2030 horizon of Alternative 1 and the proposed project. This impact would remain significant and unavoidable.

Cumulative: Visual Character

The proposed project would have a considerable contribution to significant cumulative impacts associated with visual character as described under Impact 4.1. Under cumulative conditions, Alternative 1 would conserve 3,026 acres of land in agricultural and open space uses that could be urbanized or developed at more intense levels under the proposed project. However, under Alternative 1, there would still be significant urbanization and growth (see Figure 5-1 and Tables 5-1 and 5-2) which would result in modifications to existing views of open space, agricultural land, and scenic resources. While Alternative 1 would reduce the project's contribution to cumulative changes to visual resources and would have less of an adverse effect than the proposed project, Alternative 1 would continue to have a considerable contribution to cumulative impacts associated with visual character.

Cumulative: Agricultural and Timber Resources

The proposed project would have a considerable contribution to significant cumulative impacts associated with the conversion of agricultural and timber resources to urban or developed uses as described under Impact 4.2. Under cumulative conditions, Alternative 1 would conserve 3,026 acres of land designated for agricultural uses, including 2,949 acres of land designated as Prime, Unique, and Locally Important farmland that could be urbanized or developed at more intense levels under the proposed project. However, under Alternative 1, there would still be significant urbanization and growth (see Figure 5-1 and Tables 5-1 and 5-2) which would result in the potential for conversion of 3,900 acres of designated farmlands, as well as other agricultural lands, to non-agricultural uses. While Alternative 1 would reduce the project's contribution to the cumulative impact associated with conversion of agricultural lands compared to the proposed project, Alternative 1 would allow the conversion of significant acreages of farmland to non-agricultural uses and would have a considerable contribution to the cumulative conversion of farmland.

Cumulative: Air Quality

The proposed project would have a considerable contribution to significant cumulative impacts associated with air quality, particularly those associated with stationary sources of air pollutants, as described under Impact 4.3. Under cumulative conditions, Alternative 1 would result in the development of 2,073 fewer acres of industrial, 80 less acres of commercial, and 282 fewer acres of residential uses than the proposed project. Alternative 1 would have 592 fewer acres of land designated Urban Reserve Area, which could be developed with a mix of urban uses, including residential, commercial, industrial, recreation, and public/semi-public

services at some point in time under the proposed project. However, under Alternative 1, there would still be significant urbanization and growth (see Tables 5-1 and 5-2) which would result in new industrial, commercial, agricultural, and other stationary sources of air pollutants. Therefore, while Alternative 1 would reduce the project's contribution to cumulative impacts associated with air quality and would have less of an adverse effect than the proposed project, Alternative 1 would continue to have a considerable contribution to significant cumulative impacts associated with air quality.

Cumulative: Biological Resources

The proposed project would have a considerable contribution to significant cumulative impacts to biological resources, including the permanent loss of habitat for special-status species, corridor fragmentation, direct and indirect to special-status species, and reduction and degradation of sensitive habitat, as described under Impact 4.4. Under cumulative conditions, Alternative 1 would conserve 3,026 acres of land in agricultural and open space uses that could be urbanized or developed at more intense levels under the proposed project. These lands would retain more biological value under the agricultural designations than under designations that would accommodate residential, commercial, industrial, and other more intense types of development. However, under Alternative 1, there would still be significant urbanization and growth (see Figure 5-1 and Tables 5-1 and 5-2) which would result in adverse effects on biological resources, including the permanent loss of habitat for special-status species, corridor fragmentation, direct and indirect to special-status species, and reduction and degradation of sensitive habitat. While Alternative 1 would reduce the project's contribution to cumulative effects on biological resources and would have less of an adverse effect than the proposed project, Alternative 1 would continue to have a considerable contribution to cumulative impacts associated with biological resources.

Cumulative: Noise

The proposed project would have a considerable contribution to significant cumulative impacts associated with noise as described under Impact 4.11. Under cumulative conditions, Alternative 1 would result in the development of 2,073 fewer acres of industrial, 80 less acres of commercial, and 282 fewer acres of residential uses than the proposed project. This reduction in development would result in fewer industrial and commercial noise sources, as well as fewer sensitive receptors, such as residential uses, as shown in Table 5-2. Alternative 1 would have xx fewer acres of land designated Urban Reserve Area, which would also reduce potential noise sources and sensitive receptors. The reduction in potential growth under Alternative 1 would also reduce the noise associated with traffic. However, under Alternative 1, there would still be significant urbanization and growth (see Figure 5-1 and Tables 5-1 and 5-2) which would result in new industrial, commercial, agricultural, and other stationary sources of noise, as well as xx new residences which would be sensitive to high levels of noise. Therefore, while Alternative 1 would reduce the project's contribution to cumulative impacts associated with noise and would have less of an adverse effect than the proposed project, Alternative 1 would continue to have a considerable contribution to significant cumulative impacts associated with noise.

Cumulative: Transportation

The proposed project would have a considerable contribution to significant cumulative impacts on the transportation network, associated with increased traffic levels and the need for additional circulation facilities, as described under Impact 4.13. The proposed project would have a considerable contribution to significant cumulative impacts associated with noise as described under Impact 4.11. Under cumulative conditions, Alternative 1 would result in the development of 2,073 fewer acres of industrial, 80 less acres of commercial, and 282 fewer acres of residential uses than the proposed project. This reduction in development would result in fewer industrial and commercial noise sources (1,231,999 less square feet of non-residential growth), as well as fewer sensitive receptors (2,175 less residential units), as shown in Table 5-2. This reduction in development would result in fewer trips associated with residential and employment growth, as well as a reduction in the demand for transit, bicycle, and pedestrian facilities. Alternative 1 would have 592 fewer acres of land designated Urban Reserve Area, which would also reduce trip generation and the demand for circulation facilities. However, under Alternative 1, there would still be significant urbanization and growth (see Figure 5-1 and Tables 5-1 and 5-2) which would considerably increase total vehicle miles travelled, the need for circulation improvements in the County as well as Caltrans and municipal facilities, and the need for transit, bicycle, and pedestrian facilities. Therefore, while Alternative 1 would reduce the project's contribution to cumulative impacts associated with circulation and would have less of an adverse effect than the proposed project, Alternative 1 would continue to have a considerable contribution to significant cumulative impacts associated with circulation.

Cumulative: Utilities

The proposed project would have a considerable contribution to significant cumulative impacts associated with water supply and wastewater treatment as described under Impact 4.14. Under cumulative conditions, Alternative 1 would result in reduced development at buildout compared with the proposed project. Under cumulative conditions, Alternative 1 would result in the development of 2,073 fewer acres of industrial, 80 less acres of commercial, and 282 fewer acres of residential uses than the proposed project. Alternative 1 would have 592 fewer acres of land designated Urban Reserve Area, which could be developed with a mix of urban uses, including residential, commercial, industrial, recreation, and public/semi-public services under cumulative conditions. This reduction in development potential (2,175 fewer residential units and 1,231,999 less square feet of non-residential development) would also result in less demand for water supply and wastewater treatment. However, under Alternative 1, there would still be significant urbanization and growth (see Figure 5-1 and Tables 5-1 and 5-2) which would result in significant demand for utilities, including water supply and wastewater treatment. Therefore, while Alternative 1 would reduce the project's contribution to cumulative impacts associated with utilities and would have less of an adverse effect than the proposed project, Alternative 1 would continue to have a considerable contribution to significant cumulative impacts related to the provision of utilities.

Irreversible Effects

The proposed project would have a significant and unavoidable impact associated with irreversible environmental effects as described under Impact 4.15. As identified in Tables 5-1 and 5-2, Alternative 1 would accommodate 3,026 fewer acres of urban levels of development and would, instead, maintain these acres as agricultural uses. The reduction in development associated with Alternative 1 would result in the permanent conversion of less land to urban levels of development and would use less non-renewable resources, including metals, stone, and other materials, related to construction and would also have less on-going demand for fossil fuels and other resources associated with energy production. However, Alternative 1 would still accommodate approximately 15,061 new residential units and 5.9 million square feet of non-residential development. This increase in development and the associated irretrievable commitment of non-renewable resources and permanent conversion of agricultural, open space, and other undeveloped lands would be a significant impact. Therefore, while Alternative 1 would have a reduced impact in comparison with the proposed project, the irreversible effects of the project would remain significant and unavoidable.

ALTERNATIVE 2

Alternative 2 has been developed to avoid potential safety impacts and land use conflicts associated with the Colusa County Airport. Land use designations under Alternative 2 would be modified as shown on Figure 5-2, which occur solely in the vicinity of the Colusa County Airport. As shown in Table 5-3 below, Alternative 2 would convert 156 acres of land designated for Urban Residential use to Rural Residential (126 acres), Industrial (24 acres), and Commercial uses (6 acres). Alternative 2 would also convert 1.85 acres of land designated for Industrial use to Public/Semi-Public services.

TABLE 5-3: GENERAL PLAN LAND USE DESIGNATIONS COMPARISON

<i>LAND USE DESIGNATION</i>	<i>PROPOSED PROJECT - 2030 GENERAL PLAN (ACRES)</i>	<i>ALTERNATIVE 2 - REVISED LAND USE (ACRES)</i>	<i>DIFFERENCE</i>
Agricultural, Open Space, and Resource Lands			
Agriculture-General	339,902	339,902	0
Agriculture-Transition	5,008	5,008	0
Agriculture-Upland	229,362	229,362	0
Designated Floodway	12,953	12,953	0
Forest Lands	73,145	73,145	0
Resource Conservation	44,094	44,094	0
Upland-Transition	0	0	0
Subtotal	7,044,640	7,044,640	0
Commercial, Industrial, and Mixed Use			
Commercial	914	920	6
Industrial	7,143	7,167	24
Mixed Use	29	29	0
Subtotal	8,086	8,116	30
Public Services and Facilities			

TABLE 5-3: GENERAL PLAN LAND USE DESIGNATIONS COMPARISON

<i>LAND USE DESIGNATION</i>	<i>PROPOSED PROJECT - 2030 GENERAL PLAN (ACRES)</i>	<i>ALTERNATIVE 2 – REVISED LAND USE (ACRES)</i>	<i>DIFFERENCE</i>
Parks and Recreation	458	458	0
Public/Semi-Public Services	583	583	2
Subtotal	1,041	1,041	0
Residential			
Rural Residential	2,256	2,382	126
Rural Service Center	88	88	0
Urban Residential	2,296	2,140	-156
Subtotal	4,640	4,610	-30
Future Growth Areas			
Urban Reserve Area	1,996	1,996	0
Other			
Tribal Lands	894	894	0
No Label*	3,611	3,611	0
Subtotal	4,505	4,505	0
TOTAL	724,731	724,731	0

During the planning horizon, the total amount of residential and non-residential growth under Alternative 2 would be comparable to the proposed project, as both General Plan maps have adequate sites to accommodate growth over the next 20 – 30 years and market conditions (e.g., housing demand, statewide growth rate, economic conditions, availability of financing, etc.) would be the primary force determining the rate and amount of residential growth. The 2030 General Plan policies and actions that encourage economic development and specifically allow a broader range of agricultural-support uses and encourage new industries to locate in the County would apply to Alternative 2. Under cumulative buildout conditions, which could occur 50 to 100 years, or longer, in the future, Alternative 2 would result in less residential growth (1,325 fewer units) than the proposed project as shown in Table 5-4, but would have more commercial and industrial growth (35,027 square feet).

TABLE 5-4: FUTURE GROWTH UNDER THE PROPOSED PROJECT AND ALTERNATIVE 2

	PROPOSED PROJECT	ALTERNATIVE 2
Planning Horizon (2030)		
New Residential Growth	1,385	1,385
Non-Residential/Employment-Generating Growth	610,874	610,874
Cumulative Buildout (2060 and beyond)		
New Residential Growth	17,236	15,911
Non-Residential/Employment-Generating Growth	7,137,081	7,172,108

Adverse Effects on Visual Character

The proposed project would result in significant and unavoidable impacts associated with adverse effects on visual character, including scenic resources, as described under Impact 3.1-1 in Chapter 3.1. Under Alternative 2, development patterns would be generally comparable to the proposed project, with less urban residential growth, but slightly more industrial and commercial growth occurring in the area south of the City of Colusa. While 126 acres of land would be designated for less intense land uses, there would not be an appreciable difference in visual character during the planning horizon. Therefore, impacts would be generally comparable between the proposed project and Alternative 2.

Conversion of Farmlands

The proposed project would result in significant and unavoidable impacts associated with the conversion of farmlands to non-farmland uses, as described under Impact 3.2-1 in Chapter 3.2. Under Alternative 2, development patterns would be generally comparable to the proposed project. While slightly less land would be designated for less intense uses, there would not be a difference in lands designated for long-term agricultural use and thus, there would be no effect on the conversion of farmlands, including important farmlands, during the planning horizon. Therefore, impacts would be generally comparable between the proposed project and Alternative 2.

Airport Hazards/Land Use Conflicts

The proposed project would result in airport hazards and land use conflicts associated with land use designations in the Colusa County Airport clear and overflight zones as described under Impacts 3.8-4 and 3.10-2 in Chapters .8 and 3.10, respectively. Alternative 2 would avoid the potential for hazards associated with airport operations and land use conflicts by changing the land use designation of lands within the clear zone and overflight zone to land use designations that allow uses that are consistent with the CLUP. Specifically, lands within the overflight zone would be changed from Urban Residential to Rural Residential, Industrial, and Commercial. The Rural Residential designation would allow residential densities consistent with those allowed under the CLUP, while the Urban Residential designation would require minimum densities that are higher than those allowed by the CLUP. The Industrial and Commercial zones both accommodate a range of land uses that are allowed under the CLUP. Lands designated Industrial within the clear zone by the proposed project would be designated Public/Semi-Public services under Alternative 2, which would accommodate public airport uses consistent with airport operations or public open space. Alternative 2 would remove the conflict associated with airport hazards and the CLUP and would reduce Impacts 3.8-4 and 3.10-2 to less than significant.

Flooding

The proposed project would result in significant and unavoidable impacts associated with flood hazards as described under Impact 3.9-5 in Chapter 3.9. Under Alternative 2, development patterns would be generally comparable to the proposed project and there would not be an appreciable difference in potential impacts associated with flooding during the planning horizon.

Alternative 2 would not modify the land use designations of lands within flood hazard areas. As with the proposed project, much of this development would be subject to flooding under 100-year, 200-year, and levee failure conditions and would result in overall flood impacts. Therefore, this impact would remain significant and unavoidable.

Traffic Noise

The proposed project would result in significant and unavoidable impacts associated with traffic noise as described under Impact 3.11-1 in Chapter 3.1. Under Alternative 2, while 126 acres would be designated for less intense residential land uses than under the proposed project, 30 acres would be designated would be designated for more intense industrial and commercial uses. It is anticipated that growth during the planning horizon would be generally comparable to growth under the proposed project. Both Alternative 2 and the proposed project include policies that encourage growth to occur within or around existing communities and discourage leapfrog development. Both Alternative 2 and the proposed project have more than enough lands designated for residential, commercial, industrial, and other growth to accommodate growth during the planning horizon. Therefore, there would not be an appreciable reduction in traffic noise under Alternative 2 compared with the levels anticipated for the proposed project. This impact would remain significant and unavoidable.

Circulation Impacts – Cities of Colusa and Williams/Caltrans

The proposed project would result in significant and unavoidable impacts associated with roadways under the jurisdiction of Caltrans and the Cities of Colusa and Williams as described under Impacts 3.13-2 and 3.13-3 in Chapter 3.13. Under Alternative 2, development patterns would be generally comparable to the proposed project. While less acres would be designated for urban residential uses and the acreage of industrial, commercial, public/semi-public, and rural residential uses would increase, there would not be an appreciable difference in the amount of development during the planning horizon. Both Alternative 2 and the proposed project include policies that encourage growth to occur within or around existing communities and discourage leapfrog development. Both Alternative 2 and the proposed project have more than enough lands designated for residential, commercial, industrial, and other growth to accommodate growth during the planning horizon. Therefore, traffic levels associated with the proposed project and Alternative 2 would be comparable. Traffic levels associated with facilities under the jurisdiction of the Cities of Colusa and Williams or Caltrans under Alternative 2 would not be appreciably different than the proposed project during the planning horizon. Under Alternative 2, implementation of measures to reduce impacts associated with facilities under the jurisdiction of Caltrans or the Cities of Colusa and Williams would remain outside of the control of the County, as described in Chapter 3.13. This impact would remain significant and unavoidable.

Water Supply

The proposed project would result in significant and unavoidable impacts associated with the environmental effects of increased water demand to serve new growth as described under Impact 3.14-1 in Chapter 3.14. Under Alternative 2, it is anticipated that growth during the

planning horizon would be generally comparable to growth under the proposed project. Therefore, there would not be an appreciable reduction in water demand under Alternative 2 compared with the levels anticipated for the proposed project. Impacts associated with increasing the water supply to serve growth and development would be comparable under the 2030 horizon of Alternative 2 and the proposed project. This impact would remain significant and unavoidable.

Wastewater Treatment

The proposed project would result in significant and unavoidable impacts associated with the environmental effects of increased demand for wastewater treatment to accommodate growth as described under Impact 3.14-2 in Chapter 3.14. Under Alternative 2, it is anticipated that growth during the planning horizon would be generally comparable to growth under the proposed project. Therefore, there would not be an appreciable reduction in the demand for wastewater treatment under Alternative 2 compared with the levels anticipated for the proposed project. Impacts associated with wastewater treatment to serve growth and development would be comparable under the 2030 horizon of Alternative 2 and the proposed project. This impact would remain significant and unavoidable.

Cumulative: Visual Character

The proposed project would have a considerable contribution to significant cumulative impacts associated with visual character as described under Impact 4.1. Under cumulative conditions, Alternative 2 would result in a generally comparable growth and development pattern. Alternative 2 would not have a substantial difference in the level of contribution to cumulative impacts under buildout conditions when compared to the proposed project. Alternative 2 have a considerable contribution to significant cumulative impacts associated with visual character.

Cumulative: Agricultural and Timber Resources

The proposed project would have a considerable contribution to significant cumulative impacts associated with the conversion of agricultural and timber resources to urban or developed uses as described under Impact 4.2. Under Alternative 2, development patterns would be generally comparable to the proposed project. While slightly less land would be designated for less intense uses, there would not be a difference in lands designated for long-term agricultural use and thus, there would be no effect on the conversion of farmlands, including important farmlands, during the planning horizon or under cumulative conditions. Therefore, Alternative 2 and the proposed project would have a comparable contribution to significant cumulative effects associated with the conversion of farmland.

Cumulative: Air Quality

The proposed project would have a considerable contribution to significant cumulative impacts associated with air quality, particularly those associated with stationary sources of air pollutants, as described under Impact 4.3. Under cumulative conditions, Alternative 2 would result in slightly less residential development (1,325 fewer units) but would result in more commercial and industrial development (35,027 square feet). However, this difference would

not be appreciable under cumulative conditions. Alternative 2 would not have a significant reduction in emission of air pollutants or location of stationary sources in the vicinity of sensitive receptors under cumulative conditions compared to the proposed project. Therefore, Alternative 2 would have a considerable contribution to cumulative air quality impacts that is comparable to the cumulative contribution of the proposed project.

Cumulative: Biological Resources

The proposed project would have a considerable contribution to significant cumulative impacts to biological resources, including the permanent loss of habitat for special-status species, corridor fragmentation, direct and indirect to special-status species, and reduction and degradation of sensitive habitat, as described under Impact 4.4. Under cumulative conditions, Alternative 2 would result in a generally comparable growth and development pattern as the proposed project and would not change the amount of land designated for open space, resource conservation, agricultural, or other uses with significant biological resource value. Therefore Alternative 2 would have a considerable contribution to cumulative impacts on biological resources that is comparable to the cumulative contribution of the proposed project.

Cumulative: Noise

The proposed project would have a considerable contribution to significant cumulative impacts associated with noise as described under Impact 4.11. Under cumulative conditions, Alternative 2 would result in less residential but more commercial and industrial development in one particular location, as described above. However, this difference would not be appreciable under cumulative conditions. Alternative 2 would contribute sources of vehicle noise and stationary noise, as well as increase the cumulative exposure of sensitive receptors to noise levels in a manner similar to the proposed project. Alternative 2 would not have a significant reduction in noise impacts under cumulative conditions. Therefore, Alternative 2 would have a considerable contribution to cumulative noise impacts that is comparable to the cumulative contribution of the proposed project.

Cumulative: Transportation

The proposed project would have a considerable contribution to significant cumulative impacts on the transportation network, associated with increased traffic levels and the need for additional circulation facilities, as described under Impact 4.13.. Under cumulative conditions, Alternative 2 would result in slightly less intense development in one particular location, as described above. However, this difference would not be appreciable under cumulative conditions. Alternative 2 would result in approximately 15,911 new residences and non-residential development of 7,172,108 square feet under cumulative buildout conditions. Alternative 2's contribution to regional and local increases in traffic would be significant and similar to the contribution of the proposed project. Therefore, Alternative 2 would have a considerable contribution to cumulative traffic impacts that is comparable to the cumulative contribution of the proposed project.

Cumulative: Utilities

The proposed project would have a considerable contribution to significant cumulative impacts associated with water supply and wastewater treatment as described under Impact 4.14. Under cumulative conditions, Alternative 2 would result in slightly less residential, but additional commercial and industrial uses, south of the City of Colusa, as described above. However, this difference would not be appreciable in regards to the cumulative demand for utilities, including water supply and wastewater treatment, under cumulative conditions. Therefore, Alternative 2 would have a considerable contribution to cumulative utilities impacts that is comparable to the cumulative contribution of the proposed project.

Irreversible Effects

The proposed project would have a significant and unavoidable impact associated with irreversible environmental effects as described under Impact 4.15. During the planning horizon, development under Alternative 2 would be comparable to the proposed project, as described above. Under buildout conditions, Alternative 2 would result in less residential development and more industrial and commercial development, but would not result in a significant reduction in development when compared to the proposed project. Alternative 2 would result in the permanent development of up to 15,911 new residential units and approximately 7.1 million square feet of non-residential uses. Under planning horizon and buildout conditions, Alternative 2 would use non-renewable resources, including metals, stone, and other materials, related to construction and result in on-going demand for fossil fuels and other resources associated with energy production at levels comparable to the proposed project. The increase in development and the associated irretrievable commitment of non-renewable resources and permanent conversion of agricultural, open space, and other undeveloped lands under Alternative 2 would be a significant impact. Therefore, Alternative 2 would have an impact comparable to that of the proposed project and the irreversible effects would remain significant and unavoidable.

ALTERNATIVE 3 (NO PROJECT)

Under Alternative 3, the County would continue to implement the adopted 1989 General Plan and no changes would be made to address the requirements of state law. Since adoption of the 1989 General Plan, state legislation has been passed requiring County's to address new safety and circulation requirements in the General Plan and to address greenhouse gas emissions. The General Plan goals, objectives, policies, and actions as well as the Land Use Map would not be updated to address the vision and concern's of the County's residents, property owners, Steering Committee, and other stakeholders that actively participated in the Visioning and goal and policy development process.

Alternative 3 would result in the continuation of existing conditions and development levels, as described in Chapter 3.10, Land Use. New growth would be allowed as envisioned under the 1989 General Plan, with land uses required to be consistent with the 1989 General Plan Land Use Map as shown on Figure 3.10-1 and summarized in Table 5-5. As shown in Table 5-5, Alternative 3 would designate 6,036 more acres for agricultural, open space and resource uses,

but would designate less lands for employment-generating uses (4,008 less acres) and public services/parks and recreation (223 less acres) than the proposed project. Alternative 3 would designate 1,122 more acres for residential uses, while the Proposed Project would designate an additional 1,996 acres to be reserved for future growth, if and when buildout of lands designated for urban uses has occurred.

TABLE 5-5: GENERAL PLAN LAND USE DESIGNATIONS COMPARISON			
<i>LAND USE DESIGNATION</i>	<i>PROPOSED PROJECT - 2030 GENERAL PLAN (ACRES)</i>	<i>ALTERNATIVE 3 - No PROJECT (ACRES)</i>	<i>DIFFERENCE</i>
Agricultural, Open Space, and Resource Lands			
Agriculture-General	339,902	391,951	52,049
Agriculture-Transition	5,008	3,171	-1,837
Agriculture-Upland	229,362	173,169	-56,193
Designated Floodway	12,953	13,002	49
Forest Lands	73,145	0	-73,145
Resource Conservation	44,094	125,122	81,028
Upland-Transition	0	4,084	4,084
Subtotal	704,4640	710,500	6,036
Commercial, Industrial, and Mixed Use			
Commercial	914	513	-401
Industrial	7,143	3,565	-3,578
Mixed Use	29	0	-29
Subtotal	8,086	4,078	-4,008
Public Services and Facilities			
Parks and Recreation	458	371	-87
Public/Semi-Public Services	583	447	-136
Subtotal	1,041	818	-223
Residential			
Rural Residential	2,256	3,516	1,260
Rural Service Center	88	489	401
Urban Residential	2,296	1,757	-539
Subtotal	4,640	5,762	1,122
Future Growth Areas			
Urban Reserve Area	1,996	0	1,996
Other			
Tribal Lands	894	0	-894
No Label*	3,611	3,573	-38
Subtotal	4,505	3,573	-932
TOTAL	724,731	724,731	0

During the planning horizon, the total amount of residential growth under Alternative 3 would be comparable to the proposed project, as both General Plan maps have adequate sites to accommodate growth over the next 20 – 30 years and market conditions (e.g., housing demand, statewide growth rate, economic conditions, availability of financing, etc.) would be the primary

force determining the rate and amount of growth. However, the proposed project would result in more non-residential growth as the 2030 General Plan includes policies and actions intended to encourage economic development and specifically allow a broader range of agricultural-support uses and encourage new industries to locate in the County. Under cumulative buildout conditions, which could occur 50 to 100 years, or longer, in the future, Alternative 3 would result in less residential and non-residential growth than the proposed project as shown in Table 5-6.

TABLE 5-6: FUTURE GROWTH UNDER THE PROPOSED PROJECT AND ALTERNATIVE 3

	PROPOSED PROJECT	ALTERNATIVE 3
Planning Horizon (2030)		
New Residential Growth	1,385	1,385
Non-Residential/Employment-Generating Growth	610,874	509,065
Cumulative Buildout (2060 and beyond)		
New Residential Growth	17,236	13,983
Non-Residential/Employment-Generating Growth	7,137,081	4,095,225

Under Alternative 3, the 1989 General Plan policy framework would still be in effect, which would constitute a business-as-usual approach to land use regulation in the County. The policy framework proposed by the 2030 General Plan that encourages a mix and balance of uses to provide an improved ratio of local jobs to population, would ensure that development pays its fair-share of necessary roadway, public service, and other infrastructure improvements, and expands the range of agricultural support uses that can occur on agricultural lands would not occur. This alternative would not include safety policies, particularly those related to flooding, required by State law which will ensure future development is protected from risks associated with the 100-year floodplain, the 200-year floodplain, and levee failure. This alternative would not include various policies provided to ensure protection of environmental resources, both at the project level and under cumulative conditions, consistent with the objectives of CEQA. Further, this alternative would not prevent all potential impacts associated with increased development, because the incorporated cities and adjacent counties would continue to grow, potentially resulting in increased traffic, air quality, and noise impacts within Colusa County.

Detailed environmental analysis was not performed for this alternative because it fails to meet three of the basic project objectives, which are: 1) to bring the County’s General Plan into consistency with State laws pertaining to General Plan updates, 2) to reflect the current goals and visions for the County based on input received during the public participation process, and 3) to address current issues and concerns raised during the public participation process. Therefore, Alternative 3 (No Project) was rejected from further consideration as a CEQA alternative. However, the environmental effects associated with Alternative 3 are summarized in Table 5-5 to provide a general comparison between the adopted 1989 General Plan (Alternative 3), the proposed project, and Alternatives 1 and 2.

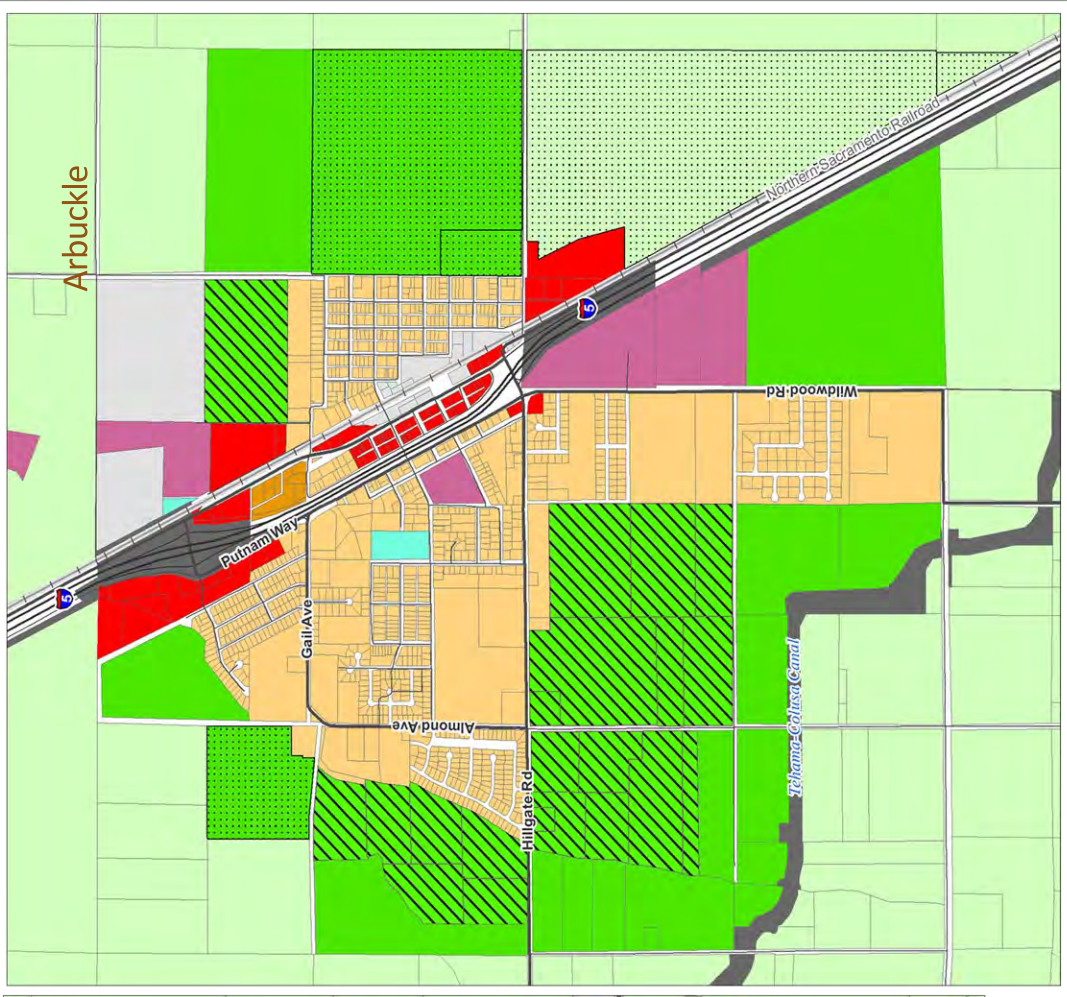
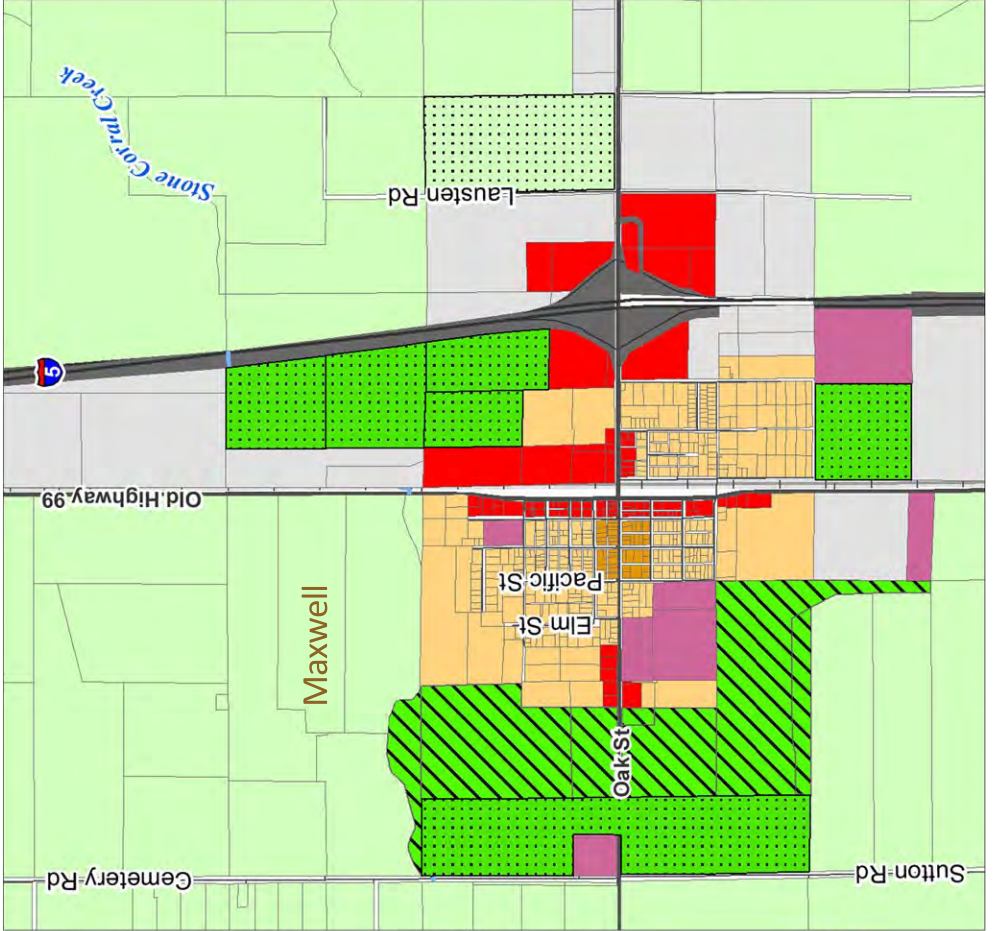
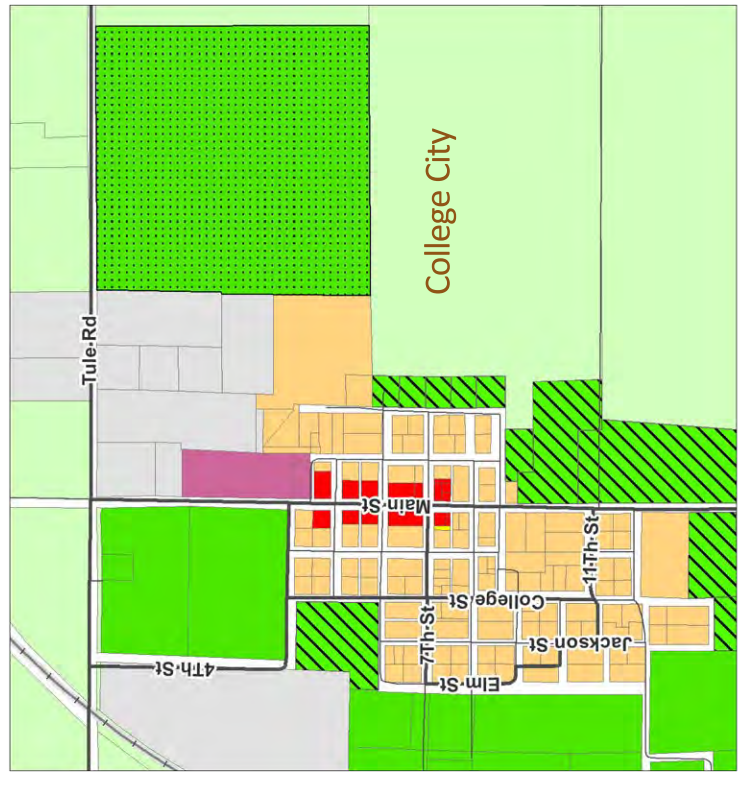
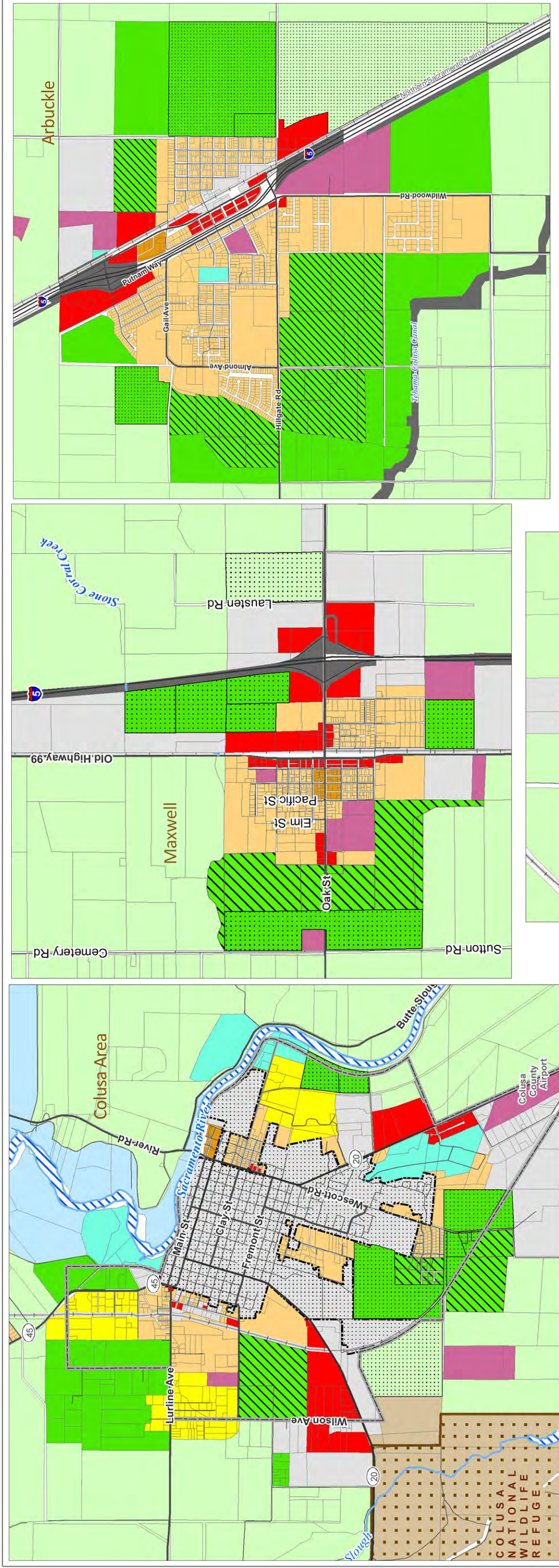
ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the proposed project.

As summarized in Table 5-7 below, Alternative 1 (Reduced Land Use Intensity) is the environmentally superior alternative because it provides the greatest reduction of potential impacts in comparison to the other alternatives. Alternative 2 (Revised Land Use - Airport Area) is slightly better than the proposed project while Alternative 3 (No Project) is worse than the Project.

TABLE 5-7: COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT				
<i>ENVIRONMENTAL ISSUE</i>	<i>PROPOSED PROJECT</i>	<i>ALTERNATIVE 1</i>	<i>ALTERNATIVE 2</i>	<i>ALTERNATIVE 3</i>
Adverse Effects on Visual Character	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Conversion of Farmlands	3 - Same	2 - Better	3 - Comparable	2 - Better
Airport Hazards	3 - Same	2 - Better	1 - Best	2 - Better
Flooding	3 - Same	2 - Better	3 - Comparable	4 - Worse
Land Use Conflicts	3 - Same	2 - Better	1 - Best	4 - Worse
Traffic Noise	3 - Same	3 - Comparable	3 - Comparable	3 - Comparable
Circulation Impacts – Cities of Colusa and Williams	3 - Same	3 - Comparable	3 - Comparable	3 - Comparable
Circulation Impacts – Caltrans Facilities	3 - Same	3 - Comparable	3 - Comparable	3 - Comparable
Water Supply	3 - Same	3 - Comparable	3 - Comparable	4 - Worse
Wastewater Treatment	3 - Same	3 - Comparable	3 - Comparable	4 - Worse
Cumulative: Visual Character	3 - Same	1 - Best	3 - Comparable	2 - Better
Cumulative: Agricultural and Timber Resources	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Cumulative: Air Quality	3 - Same	2 - Better	3 - Comparable	4 - Worse
Cumulative: Biological Resources	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Cumulative: Noise	3 - Same	2 - Better	3 - Comparable	4 - Worse
Cumulative: Transportation	3 - Same	2 - Better	3 - Comparable	4 - Worse
Cumulative: Utilities	3 - Same	2 - Better	3 - Comparable	3 - Comparable
Irreversible Effects	3 - Same	2 - Better	3 - Comparable	4 - Worse
SUMMARY	54 - Same	41 - Best	50 - Better	61 - Worse

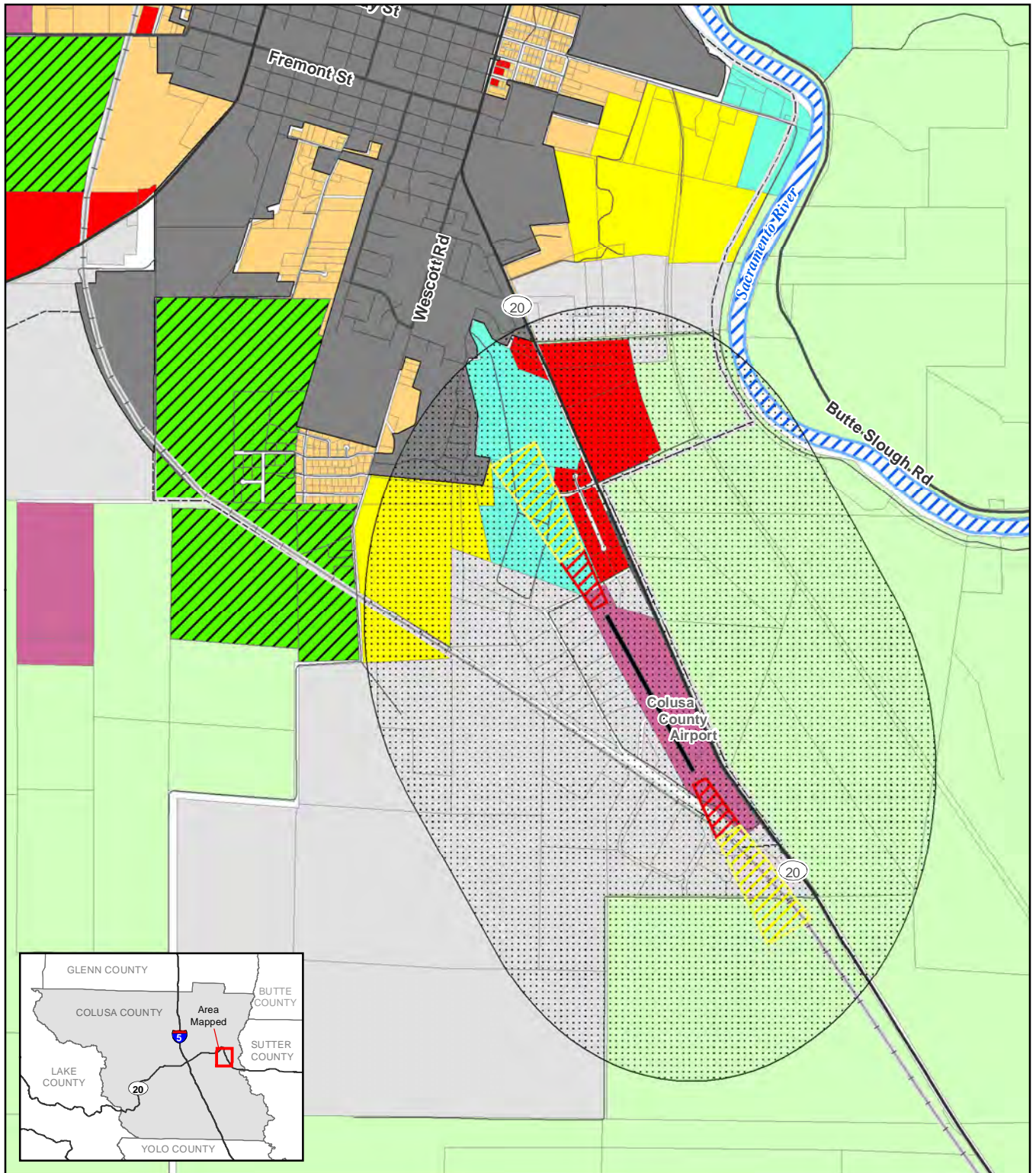
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- | | | | |
|--|------------------------------------|--|----------------------------|
| | Land Use Designation Modifications | | C - Commercial |
| | State, Federal, Other Agency Lands | | DF - Designated Floodway |
| | URA - Urban Reserve Area | | I - Industrial |
| | AG - Agricultural General | | RC - Resource Conservation |
| | AU - Agricultural Upland | | TL - Tribal Lands |
| | AT - Agricultural Transition | | FL - Forest Lands |
| | PR - Parks & Recreation | | RR - Rural Residential |
| | RSC - Rural Service Center | | UR - Urban Residential |
| | PS - Public/Semi-Public Services | | MU - Mixed Use |

Figure 5-1
Alternative 1 Land Use Modifications

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Safety Restriction Areas

- Approach/Departure Zone
- Clear Zone
- Overflight Zone

Planning Boundaries

- City of Colusa
- Sphere of Influence

2011 Draft General Plan Land Use Designations

- URA - Urban Reserve Area
- AG - Agricultural General
- PR - Parks & Recreation
- PS - Public/Semi-Public Services
- C - Commercial
- I - Industrial
- RR - Rural Residential
- UR - Urban Residential
- MU - Mixed Use

**Figure 5-2: Alternative 2
Land Use Modifications**



0 500 1,000 2,000 Feet

1:30,000

COLUSA COUNTY

Steve Hackney Director of Planning and Building
 Kent Johanns Associate Planner, Department of Planning and Building
 Tana Loudon Administrative Secretary, Department of Planning and Building

DE NOVO PLANNING GROUP

Ben Ritchie..... Principal Planner/Project Manager
 Beth Thompson Principal Planner/Project Manager
 Steve McMurtry.....Principal Planner

Fehr & Peers – Transportation Consultant

David Robinson..... Principal
 Chris Breiland Traffic Engineer

j.c. brennan and associates – Noise Consultant

Jim Brennan Principal
 Luke Saxelby Senior Acoustical Analyst

Peak & Associates – Cultural Resources Consultant

Melinda Peak Principal
 Neal NeuenschwanderSenior Archaeologist

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APPENDIX A

1 - Notice of Preparation



Notice of Preparation Colusa County 2030 General Plan Draft Program Environmental Impact Report

Date: June 20, 2011

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Organizations and Interested Persons

Lead Agency: Colusa County Department of Planning and Building
Steve Hackney, Director of Planning and Building
220 12th Street
Colusa, CA 95932
Phone: 530-458-0480
Email: shackney@countyofcolusa.org

Summary

Colusa County (the County) will serve as Lead Agency in the preparation of a programmatic Environmental Impact Report (Program EIR) addressing the comprehensive update to the County's General Plan. This programmatic EIR will address the environmental impacts associated with the adoption and implementation of the Colusa County 2030 General Plan. Information regarding the project description, project location, public outreach process and topics to be addressed in the Draft EIR is provided below. Additional information on the Colusa County 2030 General Plan is available at: www.countyofcolusageneralplan.org.

Submitting Comments

Public agencies and interested parties are invited to submit comments in writing as to the scope and content of the EIR. Public agencies submitting comments are encouraged to identify a contact person and any key agency concerns regarding the proposed project. The County needs to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection to the proposed project. Public and agency comments will be received over a 30-day period, ending on July 20, 2011. All

comments must be received prior to 5:00 p.m. on July 20, 2011. In the event that no response or request for additional time is received by any Responsible or Trustee Agency by the end of the review period, the Lead Agency may presume that the Responsible Agency has no response to make [CEQA Guidelines Section 15082(b)(2)].

Please send your responses to Steve Hackney, Director of Planning and Building, at the address shown above.

Scoping Meeting

The County will conduct a scoping meeting to receive public input on the scope of the Colusa County 2030 General Plan EIR. At this meeting, individuals, agencies, and organizations are encouraged to provide the County with their input on the topics and analysis for the EIR.

The scoping meeting will be held on Tuesday, June 28, 2011 at 9:00 a.m. at the Colusa County Board Chambers, located at 547 Market Street, Colusa, CA 95932.

Project Characteristics and Background

Project Location and Setting

Colusa County encompasses approximately 1,156 square miles in north central California (see Figure 1). The eastern part of the County is located in the Sacramento Valley, and the western portion is in the Klamath/North Coast Range. Colusa County is bordered by Glenn County to the north, Lake County to the west, Yolo County to the south, and Sutter and Butte Counties to the east.

Existing land uses in Colusa County are primarily agricultural. The land use pattern is typical of rural counties of the Sacramento Valley. A checkerboard of large acreage farms dominates the eastern half of the County, with land ownership and road alignments generally following square mile section lines. The land is generally flat and is covered by fields of rice, orchards, and row crops. Views are expansive, framed only by the rolling foothills of the Coast Range on the west and jagged peaks of the Sutter Buttes on the east.

As one moves west through the County, large farms give way to much larger cattle and sheep ranches, cultivated fields give way to arid rangeland, and the flat terrain transitions into rolling hills and upland valleys. Further west, the land becomes yet more rugged and wild, until finally reaching the summit of Snow Mountain in the wilderness area at 7,000 feet above the valley floor.

There are two incorporated cities in Colusa County: Colusa and Williams. Unincorporated communities include Arbuckle, Maxwell, Princeton, Grimes, Stonyford, Century Ranch, and College City.

Interstate 5 is a major transportation corridor running north-south through the County. State Route 20 is a major roadway running east-west through the County. State Route 45 is a major roadway running north-south through the County. The Sacramento River runs in a general north-south direction along and near the County's eastern boundary.

Project Description

Colusa County is preparing a comprehensive update to their existing General Plan, which was adopted in 1989. The update is expected to be complete in late 2011 or early 2012.

The Colusa County 2030 General Plan will include a comprehensive set of goals, policies and implementation measures, as well as a revised Land Use Map (Figure 2). The State requires that the General Plan contain seven mandatory elements: Land Use, Circulation, Housing, Open Space, Noise, Safety and Conservation. The Housing Element was completed ahead of the rest of the General Plan Elements, and was adopted by the Board of Supervisors on February 8, 2011. The Colusa County 2030 General Plan will include all of the State-mandated elements, as well as optional elements, including: Economic Development, Public Services and Facilities, and Community Character.

The overall purpose of the Colusa County 2030 General Plan is to create a policy framework that articulates a vision for the County's long-term physical form and development, while preserving and enhancing the quality of life for Colusa County residents. The key components of the General Plan will include broad goals for the future of Colusa County, objectives for meeting those goals, and specific policies and action items that will help meet the goals and objectives.

General Plan Outreach and Public Input

Visioning Workshops

The County initiated the General Plan Update process in 2009. Between September and November 2009, the General Plan Update team held five public visioning workshops to help kick-off the General Plan Update process. A diverse group of County residents and stakeholders attended workshops in Stonyford, Maxwell, Arbuckle, Colusa and Williams. The workshops provided an opportunity for the public to offer their thoughts on what they like and don't like about their communities and the County and what important issues should be addressed in preparing the General Plan Update.

Each workshop included a presentation by the consultant team that explained the role of the General Plan, an overview of the General Plan Update process, and an opportunity for the workshop participants to ask questions and seek clarification on the process and the role of the community. Workshop participants were asked to

complete three exercises in order to provide information to the General Plan Update team.

Stakeholder Interviews

Between September 2009 and March 2010, the General Plan Consultants conducted interviews and outreach efforts with several key stakeholders in the County. These interviews and outreach efforts helped the General Plan consultants gain perspectives and insights into the issues to be addressed by the General Plan Update. Key stakeholders contacted during these efforts include, but are not limited to:

- Maxwell Public Utilities District
- Arbuckle Public Utilities District
- City of Williams
- City of Colusa
- Colusa County Sheriff's Department
- Colusa County Assessor's Office
- Colusa County Department of Public Works
- Colusa Local Agency Formation Commission (LAFCO)
- Colusa County Library
- Colusa Rotary Club
- Colusa County Agricultural Commissioner
- Colusa County Department of Behavioral Health
- Colusa County Department of Health and Human Services
- Colusa County Department of Planning and Building
- Colusa County Office of Education
- Housing Authority (contracted through Glenn Co. HRA)
- Arbuckle Family Action Center
- Williams Migrant Camp
- Senior Information Center
- Colusa First 5
- Colusa County One-Stop Center
- Colusa-Glenn-Trinity Community Action Partnership
- Colusa County Chamber of Commerce
- Princeton Joint Unified School District
- Colusa County Farm Bureau
- Arbuckle Family Health Center
- Maxwell Unified School District
- Pierce Joint Unified School District
- Colusa Unified School District
- Stony Creek Joint Unified School District

Land Use Map Change Request Forms

Between November 2009 and March 2010, property owners in Colusa County were given the opportunity to submit General Plan land use designation change requests for their parcels to the Planning Department. Changes in existing General Plan designations were requested for approximately 27 sites throughout the County. These requested changes were all considered by the General Plan Steering Committee, Planning Commission, and the Board of Supervisors during the development of the Draft 2030 General Plan Land Use Map.

General Plan Steering Committee

The Board of Supervisors appointed approximately 20 County residents and local agency representatives to the General Plan Steering Committee. The Steering Committee worked with staff and the consultant team to develop the goals, objectives, policies and action items to be included in the 2030 General Plan, and also worked to develop and refine the Draft General Plan Land Use Map. The Steering Committee met a total of eight times between September 2010 and February 2011.

Program EIR Analysis

The County, as the Lead Agency under the California Environmental Quality Act (CEQA) will prepare a Program Environmental Report for the 2030 General Plan. The County's 2030 General Plan will be comprehensive in scope. The EIR will be prepared in accordance with CEQA, implementing the CEQA Guidelines (Guidelines), relevant case law, and County procedures. The Colusa County 2030 General Plan is considered a "project" under CEQA, and is therefore subject to CEQA review. As a policy document, the General Plan provides guidance and sets standards for several areas of mandatory environmental review for later "projects" that would be undertaken by local government and the private sector.

The EIR will analyze potentially significant impacts associated with adoption and implementation of the 2030 General Plan. In particular, the EIR will focus on areas of planned land use changes in the unincorporated County. Figure 2 shows the Draft Land Use Map for the 2030 General Plan.

Pursuant to Section 15063(a) of the CEQA Guidelines, no Initial Study will be prepared for the proposed project. The EIR will evaluate the full range of environmental issues contemplated under CEQA and the CEQA Guidelines. At this time, the County anticipates that EIR sections will be organized in the following manner:

- Aesthetics
- Agriculture and Forestry
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gasses and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation/Traffic
- Utilities
- Mandatory Findings of Significance



Map date: June 3, 2010

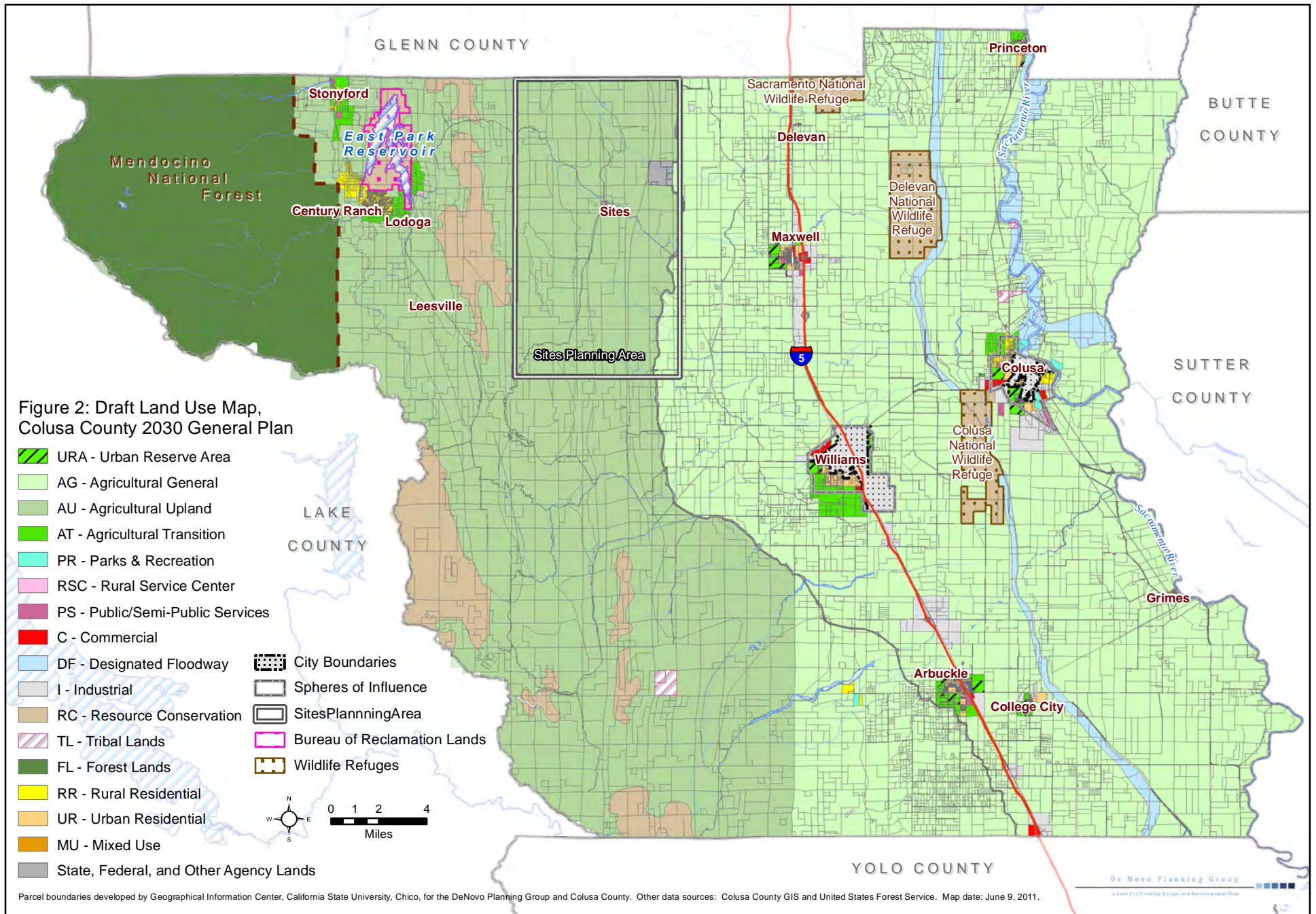
Figure 1. Regional Location Map
Colusa County 2030 General Plan



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Parcel boundaries developed by Geographical Information Center, California State University, Chico, for the DeNovo Planning Group and Colusa County. Other data sources: Colusa County GIS and United States Forest Service. Map date: June 9, 2011.

APPENDIX A

2 - Notice of Preparation Comments

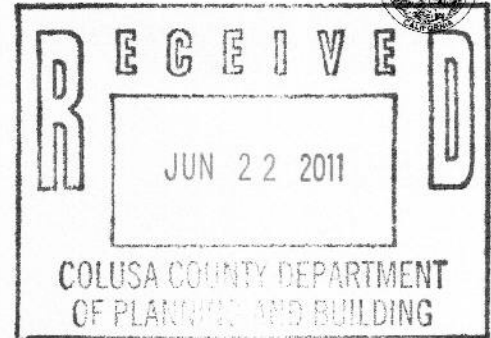
NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
 SACRAMENTO, CA 95814
 (916) 653-4082
 (916) 657-5390 - Fax



June 22, 2011

Steve Hackney
 Colusa County
 220 12th Street
 Colusa, CA 95932



RE: SCH# 2011062052 Colusa County 2030 General Plan; Colusa County.

Dear Mr. Hackney:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
 - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
 - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
 - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
 Program Analyst
 (916) 653-4040

cc: State Clearinghouse

Native American Contact List

Colusa County
June 22, 2011

Wintun Environmental Protection Agency
Dave Jones
P.O. Box 1839 Wintun (Patwin)
Williams, CA 95987
corwepa@hotmail.com
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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2011062052 Colusa County 2030 General Plan; Colusa County.

Native American Contact List

Colusa County

June 22, 2011

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Wailaki
Muimok

Kesner Flores
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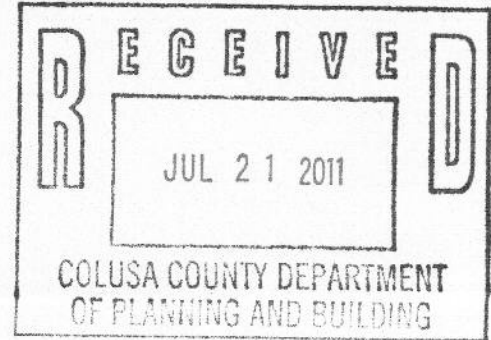
This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2011062052 Colusa County 2030 General Plan; Colusa County.

Colusa Local Agency Formation Commission

John Benoit, Executive Officer
P.O Box 2694 Granite Bay, Calif 95746
(530) 458-0593 LAFCO@countyofcolusa.org

July 18, 2011

Colusa County Department of Planning and Building
Steve Hackney, Director of Planning and Building
220 12th Street
Colusa, CA 95932



Attn: Steve Hackney, Planning Director

SUBJECT: NOP Response for the County of Colusa General Plan EIR

Dear Steve,

Thank you for sending LAFCO a copy of the Notice of Preparation for the EIR the County is undertaking. It is the policy of Colusa LAFCO to actively participate in the development of Environmental Documents where LAFCO is a Responsible Agency as required in Section 15096 of the CEQA guidelines or in this case, when the County is preparing a General Plan. LAFCO is concerned with the orderly provision of urban services in the County and that the services required for any subsequent development be provided by an established service provider where feasible and that the service provider has and maintains adequate funding for the services is provides.

As you are aware, LAFCO is in the process of preparing a Municipal Service Reviews and Spheres of Influence throughout the County on an ongoing basis, pursuant to the state law. If feasible, LAFCO intends to use this EIR for its environmental document for upcoming Sphere of Influence updates rather than preparing a new environmental document for this purpose. Please provide language in the "Purposes and Intent" section of the EIR that LAFCO will be using this EIR for the upcoming Sphere of Influence updates.

Depending upon the ability of a service district to provide services (as well as other factors) a Sphere of Influence update to include the territory in the map attached to the NOP may not be feasible in the near term. The environmental documentation needs to disclose any potential environmental impacts associated with a larger or updated Sphere of Influence. Of particular importance to LAFCO is a service district's ability to provide water and wastewater services. These areas should be thoroughly discussed to the extent feasible in the EIR. Since this is a programmatic EIR, LAFCO may wish to prepare a supplemental document should additional environmental documentation be required at the time LAFCO updates various Spheres of Influence.

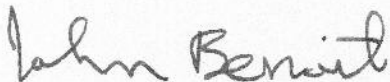
In addition to the DEIR, once prepared, LAFCO requests a copy of the General Plan Policy Document. Comments on this NOP do not include any specific comments relating to policies the County may adopt. We believe the environmental impact of a proposed new policy needs to be assessed in the environmental document to the extent feasible.

A thorough analysis of the impacts upon agricultural lands needs to be placed in the EIR as well as acceptable mitigation for the loss and (or) conversion of agricultural lands. LAFCO's Policies and Procedures with respect to the contents of a Sphere of Influence and Municipal Service Review are attached to this letter.

LAFCO becomes concerned about the cumulative service impacts subsequent development may have on various local service providers including all agencies within the County. We assume subsequent development will undergo additional environmental review on a project-by-project basis, which may later be used by LAFCO in considering individual future annexations.

Thank you for providing LAFCO with the opportunity to comment on the NOP for the County's General Plan EIR. LAFCO would request a hard copy of the DEIR when released as well as the County's General Plan Policy Document as soon as these documents become available.

Sincerely,



John Benoit

Executive Officer, Local Agency Formation Commission

3.1. General Policies

- a. *LAFCO must adopt a sphere of influence for each city and each district in its jurisdiction, and must review and, if necessary, update each sphere of influence at least every five years. All LAFCO actions must be consistent with a sphere plan. A Sphere of Influence is defined in Section 56425 of the Government Code as “a plan for the probable physical boundary and service area of a local agency or municipality as determined by the commission.”*

The establishment of Sphere of Influence Plans is perhaps the most important planning function given to LAFCOs by the state legislature. Spheres of Influence are described by the Cortese Knox Hertzberg Act as an important tool for “planning and shaping the logical and orderly development and coordination of local governmental agencies so as to advantageously provide for the present and future needs of the county and its communities.” Spheres serve a similar function in LAFCO determinations as general plans do for cities and counties. Consistency with the adopted sphere plan is mandatory, and changes to the plan require careful review.

While LAFCO encourages the participation and cooperation of the subject agency, the sphere of influence plan is a LAFCO responsibility, and the Commission is the sole authority as to the sufficiency of the documentation and the plan’s consistency with law and LAFCO policy. Staff of LAFCO will work closely with agencies in developing sphere of influence plans. In determining the sphere of influence of each agency, LAFCO must consider and prepare a written statement of its determinations with respect to the following four factors as stated in Government Code Section 56425 (e):

- 1. The present and planned land use in the area, including agricultural and open-space lands.*
- 2. The present and probable need for public facilities and services in the area.*
- 3. The present capacity of public facilities and adequacy of public services provided by the agency.*
- 4. Any social or economic communities of interest in the area that the Commission determines is relevant to the agency.*

- b) *In order to prepare and update spheres of influence, LAFCO is required to conduct a review of the municipal services provided in the county, region, subregion, or other appropriate designated area. The policies, standards and procedures of Colusa LAFCO applying to Municipal Service Reviews are set forth in Section 3.3 below.*
- i) *Consistency Requirement. Every sphere of influence plan must be consistent with LAFCO's Policies and Procedures, the state legislature's policy direction to LAFCO, the sphere plans of all other agencies in the area, the Commission's statement of written determinations with respect to its review of municipal services in the applicable area, and with the long range planning goals for the area.*
 - ii) *Sphere Boundaries. In establishing the boundaries of a sphere of influence plan for an agency, LAFCO will consider the factors listed in Section 56425 (e) of the Government Code as noted above.*
- c) *With respect to Factor 3.1(b) above, LAFCO will not include lands that are unlikely to require the services provided by the agency, for example, lands not designated for development by the applicable General Plan, territory where development is constrained by topographical factors, or areas where the projected and historical growth rates do not indicate a need for service within the timeframe of the sphere plan.*
- d) *With respect to Factor 3.1(c) above, LAFCO will not include areas in an agency's sphere of influence, which cannot feasibly be served by the agency within a time frame consistent with the sphere plan.*
- e) *Time Factor. Sphere of Influence amendments will ordinarily take longer to process than applications for a change of organization or reorganization and will generally require more detailed information.*
- f) *Updated Plans Encouraged. Agencies are encouraged to keep the supporting documentation for their Sphere of Influence plans up to date so that individual applications for changes of organization or reorganization are not burdened with time delays.*
- g) *Areas of Concern. LAFCO may, at its discretion, designate a geographic area beyond the Sphere of Influence as an area of Concern to any local agency.*
- i) *An Area of Concern is a geographic area beyond the Sphere of Influence in which land use decisions or other governmental actions of one local agency (the "Acting Agency") impact directly or indirectly upon another local agency ("the Concerned Agency"). For example, approval of a housing project developed to urban densities on septic tanks outside the city limits of a city and its sphere of influence may result in the city being forced subsequently to extend sewer services to the area to deal with septic failures and improve city roads that provide access to the development. The city in such situation would be the Concerned Agency with appropriate reason to request special consideration from the Acting Agency in considering projects adjacent to the City.*

ii) LAFCO will notify any Concerned Agency when LAFCO receives notice of a proposal of another agency in the Area of Concern to the Concerned Agency, and will give great weight to its comments.

iii) If requested, LAFCO will seek to obtain a Joint Powers Agreement or other commitment between the agencies so that the Acting Agency provides advance notice to the Concerned Agency of any actions, or projects being considered within the area of concern, and commits to considering any comments made by the Concerned Agency.

- h) Zero and Minus Spheres. The Commission may adopt a “zero” sphere of influence (encompassing no territory) for an agency when the Commission has determined that the public service functions of the agency are either non-existent, no longer needed, or should be reallocated to some other agency of government. Adoption of a “zero” sphere indicates the agency should ultimately be dissolved. The Commission may initiate dissolution of an agency when it deems such action appropriate. The Commission may adopt a “minus” sphere (excluding territory currently within that agency’s boundaries) when it has determined that territory within the agency’s boundaries is not in need of the agency’s services, or when the agency has no feasible plans to provide efficient and adequate service to the territory in question.

3.2. CONTENTS OF THE SPHERE OF INFLUENCE PLAN

- a) General Requirements. The Sphere of Influence Plans for all governmental agencies within LAFCO’s jurisdiction shall contain the following:

i) A sphere map and phased plan for annexation of the depicted territory defining the probable boundary of the agency’s service area 20 years hence (the long-term horizon) and identifying a near-term development horizon defining the agency’s logical boundary for lands likely to be annexed prior to the next sphere review or update (typically within five years). The phased annexation plan may include specific conditions for particular areas that must be satisfied before annexations may occur.

ii) Documentation to support the Commission’s determinations regarding the factors stated in §56425(e). Generally this information will be provided in the applicable Municipal Service Review(s), supplemented and updated as necessary to assure the information and analysis satisfy LAFCO policy requirements and are complete, current, and accurate.

- b) Specific Requirements for City Sphere Plans

i) City/County Agreement. When required by Government Code §56425(b), a city and the county shall meet and confer regarding the boundaries of the city’s sphere prior to the Commission’s final determination. If a city and the county have reached agreement

regarding the boundaries, development standards, and zoning requirements within a proposed city sphere, the Commission shall give great weight to the agreement in the Commission's final determination of the city's sphere.

ii) *Parcel Inventory and Absorption Study.* The Commission must be able to make a positive determination that the city's sphere is consistent with its historical and expected growth rates, and that the territory within the sphere is likely to be annexed within the 20-year timeframe. The Commission's determination will be based on information provided by the city, including 1) a vacant land inventory, 2) an analysis of the vacant lands to determine their suitability for development, and 3) a market study to determine the absorption rate of the usable vacant lands. If the city is unable to supply such information, LAFCO will make a sphere determination after considering the city's historical growth rates for each land use designation, pertinent city land use and zoning regulations, and the physical characteristics of the property intended to be included in the sphere.

iii) *Spheres for New Cities.* The Commission will adopt a Sphere of Influence Plan for a newly incorporated city within a year of the date of incorporation.

3.3 Municipal Service Reviews

In order to establish an appropriate sphere for an agency, LAFCO must have adequate information on present and future service needs in the area and the capabilities of the agency to meet those needs. To this purpose, the Cortese-Knox-Hertzberg Act requires LAFCO to conduct service reviews prior to establishing or updating spheres of influence. A service review is a comprehensive review of provision of specified services within a designated geographic area. Its purpose is to evaluate the provision of services on a regional basis and to recommend actions, when necessary, to promote the efficient provision of those services. The service reviews are intended to help LAFCO, the public and other agencies better understand the public service structure and evaluate options for the provision of efficient and effective public services. LAFCO uses the information and analysis provided by the Municipal Service Review (MSR) to ascertain whether an agency can provide adequate and efficient services to the areas in the agency's sphere within the applicable time frame.

LAFCO will prepare or update the appropriate Municipal Service Reviews prior to or in conjunction with the adoption or update of an agency's sphere of influence plan. In general, LAFCO will conduct such reviews on a service-by-service basis for designated geographic areas. The Commission will periodically develop and implement a multi-year coordinated schedule for preparing MSRs and updating spheres of influence, in accordance with the legislature's direction to review each agency's sphere of influence every five years and update as necessary and provided for in LAFCO's budget.

a) *General Standards.* LAFCO shall prepare Municipal Service Reviews in conformance with the provisions of Government Code §56430. A Municipal

Service Review must provide information specific to each agency to support the Commission's written determinations with respect to the following:

Growth and population projections for the affected area.

Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies.

Financial ability of agencies to provide service.

Status of, and opportunities for, shared facilities.

Accountability for community service needs, including governmental structure and operational efficiencies.

Any other matter related to effective or efficient service delivery.

b) *Municipal Service Reviews Must Support Spheres of Influence.* In addition to the requirements discussed above, Municipal Service Reviews shall contain information on which the Commission can base its determination of the appropriate sphere of influence for an agency, including:

i) *Identification of existing land uses and a reasonable projection of land uses, which would occur if services were provided consistent with each agency's sphere of influence plan. This analysis should include maps and explanatory text detailing the following:*

ii) *Present designated and actual land uses in the area, improved and unimproved properties, and agricultural and open space lands, as defined by Government Code Sections 56064 and 56059.*

iii) *Proposed future land uses in the area.*

iv) *Discussion of present and probable future needs for public facilities and services in the sphere area. The discussion should include consideration of the need for all types of major facilities, not just those provided by the agency.*

v) *A determination of the present and future capacity of facilities and adequacy of services the agency provides or has plans to provide. The review must include specific information and analysis of how the agency will meet anticipated growth in demand within its current boundaries and within the area included in its sphere. This information will guide the Commission's designation of appropriate sphere horizons in the Sphere of Influence Plan. The required information should include the following:*

1) *Maps and explanatory text that indicate the location and capacity of existing and proposed facilities, including a plan for timing and location of new or expanded facilities.*

2) *An estimate of projected revenue and expense over the sphere horizons, specifically identifying the cost of planned new facilities or services and projected source(s) of revenue to fund those new facilities or services.*

3) *Actual and projected costs of services to consumers in current dollars. A statement of actual and projected allocations of the*

cost of services between existing and new residents shall be included.

4) Identification of any relevant social or economic communities of interest in the area. For example, an area, which is completely within one subdivision governed by a single homeowner's association should be noted, in order to avoid unnecessary division of the territory between service agencies.

c) Uses of the Municipal Service Review. Upon approval of the Municipal Service Review, it will be utilized by LAFCO both in establishing the agency's sphere of influence and in the consideration of all proposals affecting that agency.



DEPARTMENT OF CONSERVATION

Managing California's Working Lands

DIVISION OF LAND RESOURCE PROTECTION

801 K STREET • MS 18-01 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 324-0850 • FAX 916 / 327-3430 • TDD 916 / 324-2555 • WEBSITE conservation.ca.gov

July 19, 2011

VIA EMAIL: shackney@countyofcolusa.org

Mr. Steve Hackney, Director of Planning and Building
220 12th Street
Colusa, CA 95932

Subject: NOP for the Colusa County 2030 General Plan - SCH# 2011062052

Dear Mr. Hackney:

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the NOP for the Colusa County 2030 General Plan. The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description:

Colusa County is preparing a comprehensive update to their existing General Plan, which was adopted in 1989.

Colusa County encompasses approximately 1,156 square miles in north central California. The eastern part of the County is located in the Sacramento Valley, and the western portion is in the Klamath/North Coast Range. Existing land uses in Colusa County are primarily agricultural. The land use pattern is typical of rural counties of the Sacramento Valley. A checkerboard of large acreage farms dominates the eastern half of the County, with land ownership and road alignments generally following square mile section lines. The land is generally flat and is covered by fields of rice, orchards, and row crops.

In the western portion of the County, large farms give way to much larger cattle and sheep ranches, cultivated fields give way to arid rangeland, and the flat terrain transitions into rolling hills and upland valleys. Further west, the land becomes yet more rugged and wild, until finally reaching the summit of Snow Mountain in the wilderness area at 7,000 feet above the valley floor.

Division Comments:

Therefore, the Division recommends that the DEIR for the Colusa County 2030 General Plan address the following items to provide a comprehensive discussion of potential impacts of the project on agricultural land and activities:

Agricultural Setting of the General Plan Update

- Location and extent of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and other types of agricultural land in the General Plan update area.
- Current and past agricultural uses of the General Plan update area. Please include data on the types of crops grown, and crop yields and farm gate sales values for the County (provided below).
- A map detailing the location of agricultural preserves and Williamson Act contracted land within each preserve. The CEQA document should also tabulate the number of Williamson Act acres, according to land type (e.g., prime or non-prime agricultural land), which could be impacted directly or indirectly by the General Plan update.

Project Impacts on Agricultural Land

When determining the agricultural value of the land, it is important to recognize that the agricultural value of a property may have been reduced over the years due to inactivity, but it does not mean that the land no longer holds any agricultural importance. The *inability* to farm the land for agriculture, rather than the choice not to do so, is what could constitute a reduced agricultural value. The Division recommends the following discussion under the Agricultural Resources section of the Draft EIR:

- Type, amount, and location of farmland conversion resulting directly and indirectly from General Plan Amendments, Rezones, etc.
- Impacts on current and future agricultural operations; e.g., land-use conflicts, increases in land values and taxes, etc.
- Incremental project impacts leading to cumulative impacts on agricultural land. This would include impacts from General Plan Amendments or Rezones, as well as impacts from past, current, and likely projects in the future.
- A discussion of Williamson Act contracts that may be terminated in order to implement the project. The CEQA document should discuss the probable impacts on nearby properties resulting from the termination of adjacent Williamson Act contracts.

Under California Code of Regulations Section 15064.7, impacts on agricultural resources may also be both quantified and qualified by use of established thresholds of significance. As such, the Division has developed a California version of the USDA Land Evaluation and Site Assessment (LESA) Model. The California LESA model is a semi-quantitative rating system for establishing the environmental significance of project-specific impacts on farmland. The model may also be used to rate the relative value of alternative project sites. The LESA Model is available on the Division's website at:

http://www.consrv.ca.gov/DLRP/gh_les.htm

Mitigation Programs

Urbanization removes valuable agricultural soils from production on a permanent basis. Residential development is the dominant land use removing farmland, although other urban

land uses are also resulting in permanent agricultural loss. While each individual agricultural parcel lost may or may not be significant, the cumulative loss of farmland has a negative impact on the County's agricultural base.

The Department's data on land use conversion¹ shows that Colusa County lost a total of 12,986 acres of Important Farmland from 1998 to 2008, with an annual average loss of 1,299 acres per year. This cumulative loss represents a significant and permanent impact to the agricultural resources of the County and the State, and shows why the remaining agricultural resources in the County should be protected whenever feasible. In 2009, approximately \$598,805,000 in farm sales was generated in Colusa County². That value demonstrates the significance of agriculture to the economy of Colusa County. Therefore, any loss of agricultural land should be avoided or mitigated whenever possible.

This can be accomplished by incorporating a mitigation program or policies into the Colusa County General Plan update, which would require mitigation for loss of agricultural resources from specific future projects. This does not require mitigation be in place at this time, but allows for a framework in dealing with impacts to agricultural resources as set forth in the General Plan.

The Department recommends the use of permanent agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land. Conservation easements will protect a portion of those remaining land resources and lessen project impacts in accordance with CEQA Guideline §15370. The Department highlights this measure because of its acceptance and use by lead agencies as an appropriate mitigation measure under CEQA and because it follows an established rationale similar to that of wildlife habitat mitigation.

Mitigation via agricultural conservation easements can be implemented by at least two alternative approaches: the outright purchase of easements or the donation of mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements. The conversion of agricultural land should be deemed an impact of at least regional significance. Hence, the search for replacement lands should not be limited strictly to lands within the project's surrounding area.

All measures allegedly feasible should be included in a mitigation program to create a sort of "cafeteria of options" that a developer and the County can agree on. Each measure should be discussed, as well as the reasoning for selection. A measure brought to the attention of the Lead Agency should not be left out unless it is infeasible based on its elements.

A principal purpose of an EIR is to present a discussion of mitigation measures in order to fully inform decision-makers and the public about ways to lessen a project's impacts. In some cases, the argument is made that mitigation cannot reduce impacts to below the level of significance because agricultural land will still be converted by the project, and, therefore, mitigation is not

¹ Department of Conservation. "Important Farmland Data Availability. Land Use Conversion Table"
http://redirect.conservation.ca.gov/dlrp/fmmp/county_info_results.asp

² California Agricultural Resource Directory 2010-2011
http://www.cdffa.ca.gov/statistics/PDFs/ResourceDirectory_2010-2011.pdf

required. However, reduction to a level below significance is not a criterion for mitigation. Rather, the criterion is feasible mitigation that lessens a project's impacts. Pursuant to CEQA Guideline §15370, mitigation includes measures that "avoid, minimize, rectify, reduce or eliminate, or compensate" for the impact.

One source that has proven helpful for regional and statewide agricultural mitigation banks is the California Council of Land Trusts, which can be found at:

<http://www.calandtrusts.org>

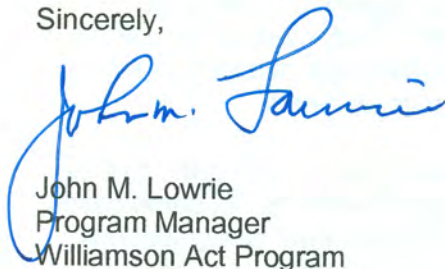
The California Council of Land Trusts deals with all types of mitigation banks. It is suggested that the County contact them to get an understanding of the fees associated with mitigation banking and the options available.

Another source is the Division's California Farmland Conservancy Program (CFCP), which has participated in bringing about conservation easements throughout the State of California involving Land Trust Alliance, the California Council of Land Trusts, and the American Farmland Trust. The establishment of an easement in the County is potentially feasible. If the County were interested in easement mitigation as a part of a mitigation program, through one of these or many other land trusts operating in California, the Department would be glad to help answer any questions.

Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered. It is recommended that the County review mitigation programs of other counties to get an idea of what may be feasible.

Thank you for giving us the opportunity to comment on the NOP for the Colusa County 2030 General Plan. Please provide this Department with the date of any hearings for this particular action, and any staff reports pertaining to it. If you have questions regarding our comments, or require technical assistance or information on agricultural land conservation, please contact Meri Meraz, Environmental Planner, at 801 K Street, MS 18-01, Sacramento, California 95814, or by phone at (916) 445-9411.

Sincerely,



John M. Lowrie
Program Manager
Williamson Act Program

cc: State Clearinghouse



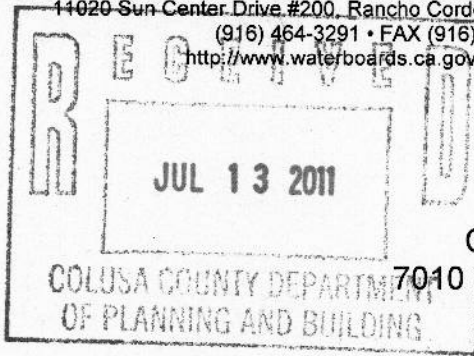
California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair



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CERTIFIED MAIL
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Linda S. Adams
Acting Secretary for
Environmental Protection

11 July 2011

Steve Hackney
Colusa County
220 12th Street
Colusa, CA 95932

COMMENTS TO NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, COLUSA COUNTY 2030 GENERAL PLAN PROJECT, SCH NO. 2011062052, COLUSA COUNTY

Pursuant to the State Clearinghouse's 20 June 2011 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Notice of Preparation for the Draft Environmental Impact Report* for the Colusa County 2030 General Plan Project, located in Colusa County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, 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. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

California Environmental Protection Agency

maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed for the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916)557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. Water Quality Certification must be obtained prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

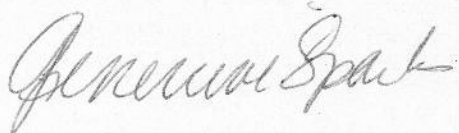
Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

If you have questions regarding these comments, please contact me at (916) 464-4745 or gsparks@waterboards.ca.gov.

A handwritten signature in cursive script that reads "Genevieve Sparks".

Genevieve (Gen) Sparks
Environmental Scientist
401 Water Quality Certification Program

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



July 18, 2011

Steve Hackney
Colusa County
220 12th Street
Colusa, CA 95932

Re: Notice of Preparation, Draft Environmental Impact Report (DEIR)
Colusa County 2030 General Plan
SCH# 2011062052

Dear Mr. Hackney:

As the state agency responsible for rail safety within California, the California Public Utilities Commission (CPUC or Commission) recommends that development projects proposed near rail corridors be planned with the safety of these corridors in mind. New developments and improvements to existing facilities may increase vehicular traffic volumes, not only on streets and at intersections, but also at at-grade highway-rail crossings. In addition, projects may increase pedestrian traffic at crossings, and elsewhere along rail corridor rights-of-way. Working with CPUC staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers.

The Circulation/Transportation and Land Use Elements needs to evaluate traffic safety issues to the at-grade railroad crossings. Any increase in traffic to the at-grade crossings by this project need to be evaluated for potential impacts to safety and hazards.

In general, the major types of impacts to consider are collisions between trains and vehicles, and between trains and pedestrians. Measures to reduce adverse impacts to rail safety need to be considered in the DEIR. General categories of such measures include:

- Installation of grade separations at crossings , i.e., physically separating roads and railroad track by constructing overpasses or underpasses
- Improvements to warning devices at existing highway-rail crossings
- Installation of additional warning devices
- Improvements to traffic signaling at intersections adjacent to crossings, e.g., traffic preemption
- Installation of median separation to prevent vehicles from driving around railroad crossing gates

Steve Hackney
SCH # 2011062052
July 18, 2011
Page 2 of 2

- Prohibition of parking within 100 feet of crossings to improve the visibility of warning devices and approaching trains
- Installation of pedestrian-specific warning devices, channelization and sidewalks
- Construction of pull out lanes for buses and vehicles transporting hazardous materials
- Installation of vandal-resistant fencing or walls to limit the access of pedestrians onto the railroad right-of-way
- Elimination of driveways near crossings
- Increased enforcement of traffic laws at crossings
- Rail safety awareness programs to educate the public about the hazards of highway-rail grade crossings

Commission approval is required to modify an existing highway-rail crossing or to construct a new crossing.

Please forward the Traffic Impact Study (T.I.S) scope of services to ensure that the at-grade railroad crossings are included in the analysis.

Thank you for your consideration of these comments. If you have any questions, please contact me at (415) 713-0092 or email at ms2@cpuc.ca.gov.

Sincerely,



Moses Stites
Rail Corridor Safety Specialist
Consumer Protection and Safety Division
Rail Transit and Crossings Branch
180 Promenade Circle, Suite 115
Sacramento, CA 95834-2939

DEPARTMENT OF TRANSPORTATION

DISTRICT 3
703 B STREET
P. O. BOX 911
MARYSVILLE, CA 95901-0911
PHONE (530) 741-4025
FAX (530) 741-4825
TTY (530) 741-4509



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July 30, 2010

032010COL0013
Colusa County General Plan Update
Pre-NOP

Mr. Steven M. Hackney, AICP
Department of Planning and Building
Colusa County
220 12th Street
Colusa, CA 95932

Dear Mr. Hackney,

Our Planning Department is looking forward to the opportunity to review and comment on the Colusa County 2030 General Plan Update and the Draft Environmental Impact Report (DEIR). The General Plan is a priority for Caltrans, as it will provide direction for the future of Colusa County and the State Highway System (SHS) serving your community. At this time, Caltrans has the following comments:

Our focus for this document as it moves forward will be directed towards the Circulation and Land Use elements. The SHS provides major transportation corridors for Colusa County. It is important that the upcoming EIR adequately address all potentially significant impacts that the General Plan will have on the SHS.

General

- The SHS is a major part of the circulation network in Colusa County and should be identified as such throughout both the General Plan itself, and the associated environmental documents.
- The County should protect adequate right-of-way for new and expanded SHS transportation facilities. The SHS transportation facilities in Colusa County are identified in Transportation Corridor Concept Reports (TCCRs) for Interstate 5 (I-5) and State Routes (SR) 16, 20, and 45, which are available at: www.dot.ca.gov/dist3/departments/planning/systemplanning.html.

These TCCRs for Colusa County provide information on the current and future projects as well as the future vision for these facilities. Where possible, the General Plan should be consistent with these documents.

Mr. Stephen M. Hackney

July 30, 2010

Page 2 of 3

- The General Plan should include an access management policy to control access to the SHS, and to ensure operational integrity.
- As part of the circulation network, improvements to the SHS and the operation of the SHS are a shared responsibility between Colusa County and Caltrans. This should be reflected in a policy statement.

Circulation Element

- The SHS is intended to facilitate inter-regional travel. The SHS within Colusa County operates with a high volume of commuter and truck traffic. In order to maintain an acceptable level of service, parallel routes need to be developed to provide an alternative to the SHS for local trips.
- A Traffic Impact Study (TIS) should be completed as part of the Circulation Element and include an analysis of impacts to the SHS and identify measures to mitigate the impacts. The TIS should include I-5, SR 16, 20 and 45. The TIS should consider all traffic impacts to SHS intersections, ramps, ramp intersections, and mainline segments, including new proposed developments that will have significant impact on the SHS. The "Guide for the Preparation of Traffic Impact Studies" updated December 2002, can be downloaded at:
<http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf>.

We would like to meet with the County to review the scope of the TIS before the Study begins.

Mitigating Potential SHS Impacts

- Freeways and State highways serve local, intra-regional, and inter-regional travel through Colusa County. It is imperative that new developments that will be identified in the General Plan within the County that use State Highway facilities for intra-regional and local travel, contribute fair share cost towards funding improvements that will be necessary to maintain acceptable levels of service.
- We suggest that a Nexus study be prepared for those portions of the County where development is planned, so that a Traffic Impact Mitigation Fee (TIMFs) program can be developed and implemented in the County. This action would set up a fair and equitable mechanism to assess and collect TIMFs from all local projects needing mitigation. Caltrans is available to assist the County through this process.

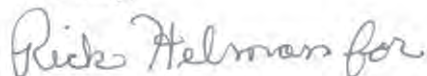
Mr. Stephen M. Hackney
July 30, 2010
Page 3 of 3

Land Use Element

- We suggest that the County consider including “Smart Growth” goals and “Complete Streets” policies into the General Plan, where appropriate, which may include the following:
 - Establishing land use strategies to increase population and housing densities and make public transportation more viable. These strategies help to reduce sprawl and to conserve valuable farmland and open space.
 - Placing housing closer to employment centers to promote a jobs/housing balance. This placement will decrease overall vehicle miles traveled, resulting in less traffic and congestion.
- Senate Bill 375, passed into law in 2008, promotes the development of “Sustainable Community Strategies” that incorporate land development patterns and strategies, which work together to reduce vehicle trips and increase transit, walking, and bicycling trips associated with future land development. We suggest incorporating these patterns and strategies into your General Plan as appropriate.

Please provide our office with a copy of the Draft General Plan Update, DEIR and proposed TIS Scope of Work once these documents are available for this project. If you have any questions regarding these comments, please contact Nora Hogan, Local Development/Inter-Governmental Review Coordinator, at (530) 634-7799 or nora_hogan@dot.ca.gov.

Sincerely,



LILIBETH GREEN

Chief, Office of Transportation Planning – North

DEPARTMENT OF TRANSPORTATION

DISTRICT 3

703 B STREET

MARYSVILLE, CA 95901-0911

PHONE (530) 741-4337

FAX (530) 741-4245

TTY 711

*Flex your power!
Be energy efficient!*

July 18, 2011

032011COL0021

Colusa County 2030 General Plan

NOP Draft EIR

SCH#2011062052

Mr. Steven M. Hackney
Director of Planning and Building
Colusa County
220 12th Street
Colusa, CA 95932

Dear Mr. Hackney:

Thank you for the opportunity to review and comment on the Notice of Preparation (NOP) for the Colusa County 2030 General Plan Draft Environmental Impact Report (DEIR). On July 30, 2010, Caltrans submitted a letter with comments to be considered in the development of the Colusa County General Plan DEIR. Those comments still apply; please see attached letter. Additional comments are as follows:

- Figure 2, map on last page: A Draft Land Use Map was included for reference. Within the map is a section labeled "Site Planning Area". Please explain the significance of this area.
- Please include forecast volumes for the state highways included in the Traffic Impact Study.

Please provide our office with copies of any further actions regarding this project. If you have any questions regarding these comments, please contact Nora Hogan, Colusa County IGR Coordinator, at (530) 634-7799 or nora_hogan@dot.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Richard Helman".

RICHARD HELMAN, Chief
Office of Transportation Planning - North

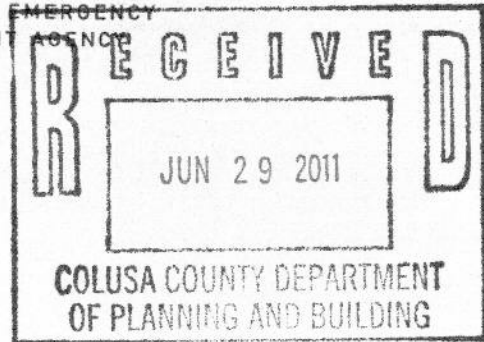
Enclosure

c: Scott Morgan, SCH



June 27, 2011

Steve Hackney
Colusa County
220 12th Street
Colusa, CA 95932



RE: Notice of Preparation for a Draft Environmental Impact Report for the County of Colusa's General Plan Update, SCH # 2011062052

Dear Mr. Hackney:

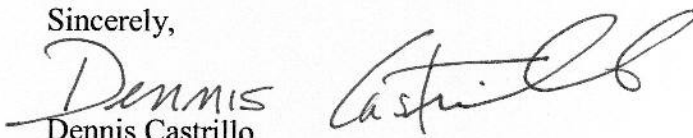
Thank you for the opportunity to comment on your Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the county's general plan update. In preparing the general plan and accompanying DEIR, the county should examine the sections of state planning law that involve potential hazards the county may face. For your information, I have underlined specific sections of state planning law where identification and analysis of hazards are discussed (see Attachment A).

Prior to the release of the draft general plan or within the DEIR, county staff or your consultants should examine each of the requirements in state planning law and determine if there are hazard issues within the county which the general plan should address. A table in the DEIR (or general plan) which identifies these specific issues and where they are addressed in the general plan would be helpful in demonstrating the county has complied with these requirements. If the DEIR determines that state planning law requirements have not been met, it should recommend that these issues be addressed in the general plan as a mitigation measure.

We note that state planning law includes a requirement for consultations with state agencies in regard to information related to hazards. Cal EMA would be happy to share all available information at our disposal to facilitate the county's ability to comply with state planning and environmental laws.

If you have any questions about these comments, please contact Andrew Rush at (916) 845-8269 or andrew.rush@calema.ca.gov.

Sincerely,


Dennis Castrillo
Environmental Officer

cc: State Clearinghouse

Attachment A

Hazards and State Planning Law Requirements

General Plan Consistency

65300.5. In construing the provisions of this article, the Legislature intends that the general plan and elements and parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.

Seven Mandated Elements

65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements:

(a) A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private uses shall consider the identification of land and natural resources pursuant to paragraph (3) of subdivision (d). The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall identify and annually review those areas covered by the plan that are subject to flooding identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The land use element shall also do both of the following:

(1) Designate in a land use category that provides for timber production those parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982, Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5.

(2) Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace.

(A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources.

(B) The following definitions govern this paragraph:

(i) "Military readiness activities" mean all of the following:

(I) Training, support, and operations that prepare the men and women of the military for combat.

(II) Operation, maintenance, and security of any military installation.

(III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use.

(ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code.

(b) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.

(c) A housing element as provided in Article 10.6 (commencing with Section 65580).

(d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

(2) The conservation element may also cover all of the following:

(A) The reclamation of land and waters.

(B) Prevention and control of the pollution of streams and other waters.

(C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.

(D) Prevention, control, and correction of the erosion of soils, beaches, and shores.

(E) Protection of watersheds.

(F) The location, quantity and quality of the rock, sand and gravel resources.

(3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.

(e) An open-space element as provided in Article 10.5 (commencing with Section 65560).

(f) (1) A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Care Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

(A) Highways and freeways.

(B) Primary arterials and major local streets.

(C) Passenger and freight on-line railroad operations and ground rapid transit systems.

(D) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.

(E) Local industrial plants, including, but not limited to, railroad classification yards.

(F) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

(2) Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

(3) The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

(4) The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

(g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wild land and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

(2) The safety element, upon the next revision of the housing element on or after January 1, 2009, shall also do the following:

(A) Identify information regarding flood hazards, including, but not limited to, the following:

(i) Flood hazard zones. As used in this subdivision, "flood hazard zone" means an area subject to flooding that is delineated as either a special hazard area or an area of moderate or minimal hazard on an official flood insurance rate map issued by the Federal Emergency Management Agency. The identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses permitted within flood hazard zones will be free from flooding or flood damage.

(ii) National Flood Insurance Program maps published by FEMA.

(iii) Information about flood hazards that is available from the United States Army Corps of Engineers.

(iv) Designated floodway maps that are available from the Central Valley Flood Protection Board.

(v) Dam failure inundation maps prepared pursuant to Section 8589.5 that are available from the Office of Emergency Services.

(vi) Awareness Floodplain Mapping Program maps and 200-year flood plain maps that are or may be available from, or accepted by, the Department of Water Resources.

(vii) Maps of levee protection zones.

(viii) Areas subject to inundation in the event of the failure of project or nonproject levees or floodwalls.

(ix) Historical data on flooding, including locally prepared maps of areas that are subject to flooding, areas that are vulnerable to flooding after wildfires, and sites that have been repeatedly damaged by flooding.

(x) Existing and planned development in flood hazard zones, including structures, roads, utilities, and essential public facilities.

(xi) Local, state, and federal agencies with responsibility for flood protection, including special districts and local offices of emergency services.

(B) Establish a set of comprehensive goals, policies, and objectives based on the information identified pursuant to subparagraph (A), for the protection of the community from the unreasonable risks of flooding, including, but not limited to:

- (i) Avoiding or minimizing the risks of flooding to new development.
 - (ii) Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones.
 - (iii) Maintaining the structural and operational integrity of essential public facilities during flooding.
 - (iv) Locating, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.
 - (v) Establishing cooperative working relationships among public agencies with responsibility for flood protection.
- (C) Establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives established pursuant to subparagraph (B).
- (3) After the initial revision of the safety element pursuant to paragraph (2), upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element.
- (4) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met.
- (5) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the office, and the board required by this subdivision.
- (6) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision.

Consistency with Airport Land Use Plans

65302.3. (a) The general plan, and any applicable specific plan prepared pursuant to Article 8 (commencing with Section 65450), shall be consistent with the plan adopted or amended pursuant to Section 21675 of the Public Utilities Code.

Review of Safety Element

65302.5. (a) At least 45 days prior to adoption or amendment of the safety element, each county and city shall submit to the Division of Mines and Geology of the Department of Conservation

one copy of a draft of the safety element or amendment and any technical studies used for developing the safety element. The division may review drafts submitted to it to determine whether they incorporate known seismic and other geologic hazard information, and report its findings to the planning agency within 30 days of receipt of the draft of the safety element or amendment pursuant to this subdivision. The legislative body shall consider the division's findings prior to final adoption of the safety element or amendment unless the division's findings are not available within the above prescribed time limits or unless the division has indicated to the city or county that the division will not review the safety element. If the division's findings are not available within those prescribed time limits, the legislative body may take the division's findings into consideration at the time it considers future amendments to the safety element. Each county and city shall provide the division with a copy of its adopted safety element or amendments. The division may review adopted safety elements or amendments and report its findings. All findings made by the division shall be advisory to the planning agency and legislative body.

(1) The draft element of or draft amendment to the safety element of a county or a city's general plan shall be submitted to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county at least 90 days prior to either of the following:

(A) The adoption or amendment to the safety element of its general plan for each county that contains state responsibility areas.

(B) The adoption or amendment to the safety element of its general plan for each city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177.

(2) A county that contains state responsibility areas and a city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177, shall submit for review the safety element of its general plan to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county in accordance with the following dates as specified, unless the local government submitted the element within five years prior to that date:

(A) Local governments within the regional jurisdiction of the San Diego Association of Governments: December 31, 2010.

(B) Local governments within the regional jurisdiction of the Southern California Association of Governments: December 31, 2011.

(C) Local governments within the regional jurisdiction of the Association of Bay Area Governments: December 31, 2012.

(D) Local governments within the regional jurisdiction of the Council of Fresno County Governments, the Kern County Council of Governments, and the Sacramento Area Council of Governments: June 30, 2013.

(E) Local governments within the regional jurisdiction of the Association of Monterey Bay Area Governments: December 31, 2014.

(F) All other local governments: December 31, 2015.

(3) The State Board of Forestry and Fire Protection shall, and a local agency may, review the draft or an existing safety element and report its written recommendations to the planning agency within 60 days of its receipt of the draft or existing safety element. The State Board of Forestry and Fire Protection and local agency shall review the draft or existing safety element and may

offer written recommendations for changes to the draft or existing safety element regarding both of the following:

(A) Uses of land and policies in state responsibility areas and very high fire hazard severity zones that will protect life, property, and natural resources from unreasonable risks associated with wildland fires.

(B) Methods and strategies for wildland fire risk reduction and prevention within state responsibility areas and very high hazard severity zones.

(b) Prior to the adoption of its draft element or draft amendment, the board of supervisors of the county or the city council of a city shall consider the recommendations made by the State Board of Forestry and Fire Protection and any local agency that provides fire protection to territory in the city or county. If the board of supervisors or city council determines not to accept all or some of the recommendations, if any, made by the State Board of Forestry and Fire Protection or local agency, the board of supervisors or city council shall communicate in writing to the State Board of Forestry and Fire Protection or to the local agency, its reasons for not accepting the recommendations.

Open Space Plans

65560. (a) "Local open-space plan" is the open-space element of a county or city general plan adopted by the board or council, either as the local open-space plan or as the interim local open-space plan adopted pursuant to Section 65563.

(b) "Open-space land" is any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:

(1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.

(2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

(3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

(4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

APPENDIX "

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Title : Colusa County General Plan Update (PM10)
 Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
 Run Date : 2011/08/26 18:51:59
 Scen Year: 2008 -- All model years in the range 1965 to 2008 selected
 Season : Annual
 Area : Colusa County
 I/M Stat : Enhanced Basic (2005)
 Emissions: Tons Per Day

	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	8	4	12	0	9	44	53	0	8	2	10	31	187	21	239	778	225	0	1003	30100
VMT/1000	0	0	1	0	0	2	2	0	1	0	1	0	2	0	2	6	2	0	8	1069
Trips	150	44	194	0	15	74	89	0	13	4	17	1	8	1	10	649	188	0	837	92729
Reactive Organic Gas Emissions																				
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0	0	0.03	0.53
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0	0	0.03	0.67
Carbon Monoxide Emissions																				
Run Exh	0	0	0	0	0.01	0.01	0.01	0	0.01	0	0.01	0.04	0.04	0	0.08	0.37	0.05	0	0.42	6.62
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0.01	1.26
Total Ex	0.01	0	0.01	0	0.01	0.01	0.01	0	0.02	0	0.02	0.04	0.04	0	0.08	0.38	0.05	0	0.43	7.96
Oxides of Nitrogen Emissions																				
Run Exh	0	0	0	0	0	0.02	0.02	0	0	0	0	0	0.01	0	0.01	0.01	0	0	0.01	5.23
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08
Total Ex	0	0	0	0	0	0.02	0.03	0	0	0	0	0	0.01	0	0.01	0.01	0	0	0.01	5.45
Carbon Dioxide Emissions (000)																				
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.88
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.89 890 tons/day
PM10 Emissions																				
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19
TireWear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
BrakeWr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Fuel Consumption (000 gallons)																				
Gasoline	0.03	0	0.03	0	0.03	0	0.03	0	0.08	0	0.08	0.03	0.15	0	0.18	0.14	0.05	0	0.19	41.29
Diesel	0	0.02	0.02	0	0	0.25	0.25	0	0	0.06	0.06	0	0	0.03	0.03	0	0	0	0	45.21

Title : Colusa County 1989 General Plan (PM10)
 Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
 Run Date : 2011/08/26 18:20:16
 Scen Year: 2030 -- All model years in the range 1986 to 2030 selected
 Season : Annual
 Area : Colusa County
 I/M Stat : Enhanced Basic (2005)
 Emissions: Tons Per Day

	LDA-NCAT	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	0	4	11	15	0	9	58	66	0	7	5	12	0	271	28	299	420	835	0	1255	37816
VMT/1000	0	0	1	1	0	0	2	2	0	1	1	1	0	3	0	3	3	6	0	9	1339
Trips	0	79	126	205	0	15	99	114	0	13	9	21	0	12	1	13	359	715	0	1075	120272
Reactive Organic Gas Emissions																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.03	0.14
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.03	0.17
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.02	0	0.03	0.25
Carbon Monoxide Emissions																					
Run Exh	0	0	0	0	0	0	0.01	0.01	0	0	0	0.01	0	0	0	0	0.18	0.06	0	0.24	1.54
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0.28
Total Ex	0	0	0	0	0	0	0.01	0.01	0	0.01	0	0.01	0	0	0	0	0.19	0.07	0	0.26	1.9
Oxides of Nitrogen Emissions																					
Run Exh	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0.01	0	0.01	1.01
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.21
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Total Ex	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0.01	0	0.01	1.25
Carbon Dioxide Emissions (000)																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.18
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2
PM10 Emissions																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
TireWear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
BrakeWr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Fuel Consumption (000 gallons)																					
Gasoline	0	0.01	0	0.01	0	0.03	0	0.03	0	0.06	0	0.06	0	0.21	0	0.21	0.07	0.15	0	0.22	49.2
Diesel	0	0	0.08	0.08	0	0	0.31	0.31	0	0	0.11	0.11	0	0	0.04	0.04	0	0	0	0	65.01

Title : Colusa County General Plan Update (PM10)
 Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
 Run Date : 2011/08/26 18:20:16
 Scen Year: 2030 -- All model years in the range 1986 to 2030 selected
 Season : Annual
 Area : Colusa County
 I/M Stat : Enhanced Basic (2005)
 Emissions: Tons Per Day

	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	4	11	15	0	9	59	68	0	7	5	13	0	277	29	306	429	855	0	1284	38700
VMT/1000	0	1	1	0	0	2	2	0	1	1	1	0	3	0	3	3	6	0	9	1371
Trips	80	128	208	0	15	100	115	0	13	9	22	0	12	1	13	364	725	0	1089	121896
Reactive Organic Gas Emissions																				
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.03	0.14
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.03	0.17
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.02	0	0.04	0.25
Carbon Monoxide Emissions																				
Run Exh	0	0	0	0	0	0.01	0.01	0	0	0	0.01	0	0	0	0	0.19	0.06	0	0.25	1.58
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0.29
Total Ex	0	0	0	0	0	0.01	0.01	0	0.01	0	0.01	0	0	0	0	0.19	0.07	0	0.26	1.94
Oxides of Nitrogen Emissions																				
Run Exh	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0.01	0	0.01	1.03
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.21
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Total Ex	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0.01	0	0.01	1.28
Carbon Dioxide Emissions (000)																				
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.21
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.23 1230 tons/day
PM10 Emissions																				
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05
TireWear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
BrakeWr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
Fuel Consumption (000 gallons)																				
Gasoline	0.01	0	0.01	0	0.03	0	0.03	0	0.07	0	0.07	0	0.22	0	0.22	0.07	0.15	0	0.23	50.34
Diesel	0	0.08	0.08	0	0	0.31	0.31	0	0	0.12	0.12	0	0	0.04	0.04	0	0	0	0	66.52

