7 CONSERVATION AND OPEN SPACE ELEMENT

Vic Fazio Yolo Wildlife Area *Source: Dave Feliz*

This element focuses on balanced management of the County's multiple natural and cultural resources. The goals and policies speak to a connected and accessible open space system with communities separated by agriculture and natural spaces, linked by a network of trails. Open spaces complement other land areas in a way that benefits both natural resources and the community. This element anticipates full integration of the Yolo Natural Heritage Program as a tool for multi-species protection. Future expansion of mineral resource extraction programs via the Cache Creek Area Plan and development of the future Cache Creek Parkway is addressed. Local actions to reduce greenhouse gases and promote alternative energy opportunities are also emphasized.

Uncertainty regarding future regulations and appropriate policy strategies for climate change are particularly challenging at the time of this update. In addition to a section on climate change within this element, policies and actions that address climate change appear throughout the entire General Plan and are identified by a small "🌎" icon. The County is committed to the reduction of greenhouse gases and has sought to balance this goal with other community values.

Similarly, the County faces uncertainty regarding future land uses and governance in the Delta. This section contains a section conservation and open space within the Delta region. In addition, there are numerous Delta-related goals, policies, and actions located throughout all the elements.

A. Introduction

1. Context

The land use designations used for purposes of categorizing, mapping, applying policy to land are identified and defined in the Land Use and Community Character Element. The County makes a distinction between Open Space (OS), Agriculture (AG), and Parks and Recreation (PR) land, as defined in that element. However, the state definition of "open space" (see Section B below) as used throughout this Conservation and Open Space Element, is more generic, and often refers to a combination of lands designated by the County as OS, AG, and PR.

Yolo County's open spaces (including working agricultural and recreational landscapes) play a critical role in defining the identity of the County, incorporating many of the key natural and cultural heritage resources of local communities, and maintaining distinct boundaries between the cities and unincorporated communities. Protecting and enhancing this open space system and the natural, cultural and agricultural legacy it contains is of critical concern to the County.

The Conservation and Open Space Element provides direction regarding the preservation of open space and the conservation, continued enjoyment, and enhancement of natural resources in Yolo County. The County is committed to conserving its open spaces, biological resources, mineral, cultural resources, water resources, air quality, and energy resources, and to addressing climate change. This element provides for an integrated network of open space in Yolo County that is a framework to safeguard plant and wildlife habitat, provide for ongoing use of productive natural resources, protect archaeological and historical resources and heritage, and improve air quality in the Sacramento air basin. It provides for an ongoing commitment by the County to conserve energy and reduce the County's contribution to greenhouse gas emissions.

2. Contents

This element is organized into subsections that specifically cover:

1. Natural Open Space (Goal CO-1)
2. Biological Resources (Goal CO-2)

3. Mineral Resources (Goal CO-3)
4. Cultural Resources (Goal CO-4)
5. Water Resources (Goal CO-5)
6. Air Quality (Goal CO-6)
7. Energy Conservation (Goal CO-7)
8. Climate Change (Goal CO-8)
9. Delta Region (Goal CO-9)

The subsection for each of these topics is formatted as follows: Background Information, Policy Framework, and Implementation Program. Within the Policy Framework and Implementation Program sections, policies and actions related to climate change are denoted with the symbol "🌎".

3. Background Information
Summary background information for each topic of this element is provided with the relevant subsection below.

B. Regulatory Framework

1. State General Plan Requirements
This Conservation and Open Space Element combines two of the seven required elements of a General Plan: the Conservation Element, which is required to address the conservation, development and utilization of natural resources, and the Open Space Element, which is required to address open space lands used for a variety of purposes.

Specifically, State law (Sections 65302d.1 and 65302d.3 of the Government Code) mandates that the Conservation Element address the following:

- Water and its hydraulic force
- Forests
- Soils
- Rivers, creeks, streams, and other waters
- Harbors
- Fisheries
- Wildlife
- Minerals
- Other natural resources
- Effects of planned development on natural resources on public lands
- Effects of planned development on natural resources on military installations

- Flood corridors
- Riparian habitats
- Flood areas
- Groundwater recharge
- Stormwater management

State law (Section 65302d.2 of the Government Code) specifies that the Conservation Element may also address the following:

- Reclamation of land and waters
- Pollution of streams and other waters
- Regulation of stream channels
- Erosion of soils, beaches, and shores
- Protection of watersheds
- Rock, sand, and gravel resources

State law (Section 65560b of the Government Code and Sections 5097.9 and 5097.993 of the Public Resources Code) mandates that the Open Space Element address the following:

- Open space for preservation of natural resources, including:
  - Areas required for the preservation of plant and animal life
  - Habitat areas for fish and wildlife species
  - Areas required for ecologic and other scientific study purposes
  - Rivers, streams, bays, and estuaries
  - Coastal beaches, lakeshores, banks of rivers and streams
  - Watershed lands
- Open space for the managed production of resources, including:
  - Forest land
  - Range land
  - Agricultural lands
  - Areas of economic importance for the production of food and fiber
  - Areas required for recharge of groundwater basins
  - Bays, estuaries, marshes, rivers, and streams important for commercial fisheries
  - Areas containing mineral deposits
- Open space for outdoor recreation, including:
  - Areas of outstanding scenic, historic, and cultural value
  - Areas particularly suited for park and recreation purposes
  - Access to lakeshores, beaches, rivers, and streams
  - Areas that link major recreation and open space land such as utility easements, river banks, stream banks, and scenic highway corridors

- Open space for public health and safety, including:
  - Earthquake fault zones
  - Unstable soil areas
  - Floodplains
  - Watersheds
  - High fire risk areas
  - Areas required for the protection of water quality and water reservoirs
  - Areas required for the protection and enhancement of air quality
  - Other areas which require special management or regulation because of hazardous or special conditions
- Open space in support of the mission of military installations, including:
  - Areas adjacent to military installations and military training routes
  - Areas underlying restricted military airspace
- Open space for the protection of Native American places, features, and objects, including:
  - Sanctified cemeteries
  - Places of worship
  - Religious or ceremonial sites
  - Sacred shrines
  - Historic, cultural or sacred sites
  - Historic or prehistoric ruins
  - Burial grounds
  - Archeological or historic sites
  - Inscription sites
  - Rock art

Yolo County has addressed all of the above items within this element, with the following exceptions:

- Forests and forestlands are addressed in this element only as related to various woodland habitats as the County has no commercial forestland or timber resources. “Urban forestry” is addressed in this element, and in the Land Use and Community Character Element, as it relates to tree canopy in community areas. Orchards and other tree crops are addressed in the Agriculture and Economic Development Element.
- Soils as a resource are addressed primarily in the Agriculture and Economic Development Element. Soil characteristics such as erosion and stability are addressed primarily in the Health and Safety Element.
- The County has no harbors. The Port of Sacramento is addressed in the Circulation Element.

- The County essentially has no military installations and facilities. The only military facility in the County, the McClellan/Davis Telecommunication Site, has been declared surplus by the Air Force and is now closed. Discussion regarding this facility and plans to convert it to a County open space facility are addressed in this element.
- Areas subject to flooding, flood corridors, flood plains, and flood management are addressed primarily in the Health and Safety Element.
- Stormwater management and drainage service providers are addressed in the Public Facilities and Services Element.
- Agriculture, rangeland, and the production of food and fiber are addressed primarily in the Agriculture and Economic Development Element.
- Bays are not addressed in this General Plan, as the County does not have these resources; however other biological resources are addressed in this element. Policies relating to the Delta, which is an estuary, are addressed throughout the General Plan.
- Coastal beaches are not addressed in this General Plan, as the County does not have these resources. Other water resources and features are addressed in this element.
- Commercial fisheries are not addressed in this General Plan, as the County does not have a commercial fishery resource or industry. Other fishery resources are addressed in this element.
- Utility easements are addressed in the Public Facilities and Services Element.
- The County has no designated federal or State Scenic Highways. A portion of State Route 16 (from approximately the town of Capay at County Road 85, north to the County line) is identified by Caltrans as "eligible" for designation as a State Scenic Highway but is not officially designated. Locally designated scenic roadways are addressed in the Land Use and Community Character Element.
- Seismic, geological, and wildland fire hazards are addressed in the Health and Safety Element.

2. Other Related Efforts

The following local and regional plans, programs, and organizations are among those that affect or are involved in the implementation of conservation and open space protection in Yolo County:

- Yolo Natural Heritage Program (YNHP)
- Oak Woodlands Management Plan
- Parks and Open Space Master Plan
- Cache Creek Area Plan (CCAP)
- Integrated Regional Water Management Plan (IRWMP)

- SACOG Rural Urban Connection Strategy
- Sacramento River Conservation Area Forum
- Sacramento Valley Conservancy
- Yolo Bypass Working Group and Planning Forum
- Putah Creek Council and Plan
- Cache Creek Conservancy
- Lower Bypass Planning Forum
- Delta Vision
- Delta Protection Commission
- Bay Delta Conservation Plan
- Blue Ridge Berryessa Natural Area Conservation Partnership
- Yolo Land Trust
- Yolo County Resource Conservation District
- Tuleyome
- Yolo Basin Foundation
- Audubon California Landowners Stewardship Program
- Yolo County Flood Control and Water Conservation District
- Water Resources Association of Yolo County
- Lower Putah Creek Coordinating Committee
- Other private non-profit organizations

C. Natural Open Space

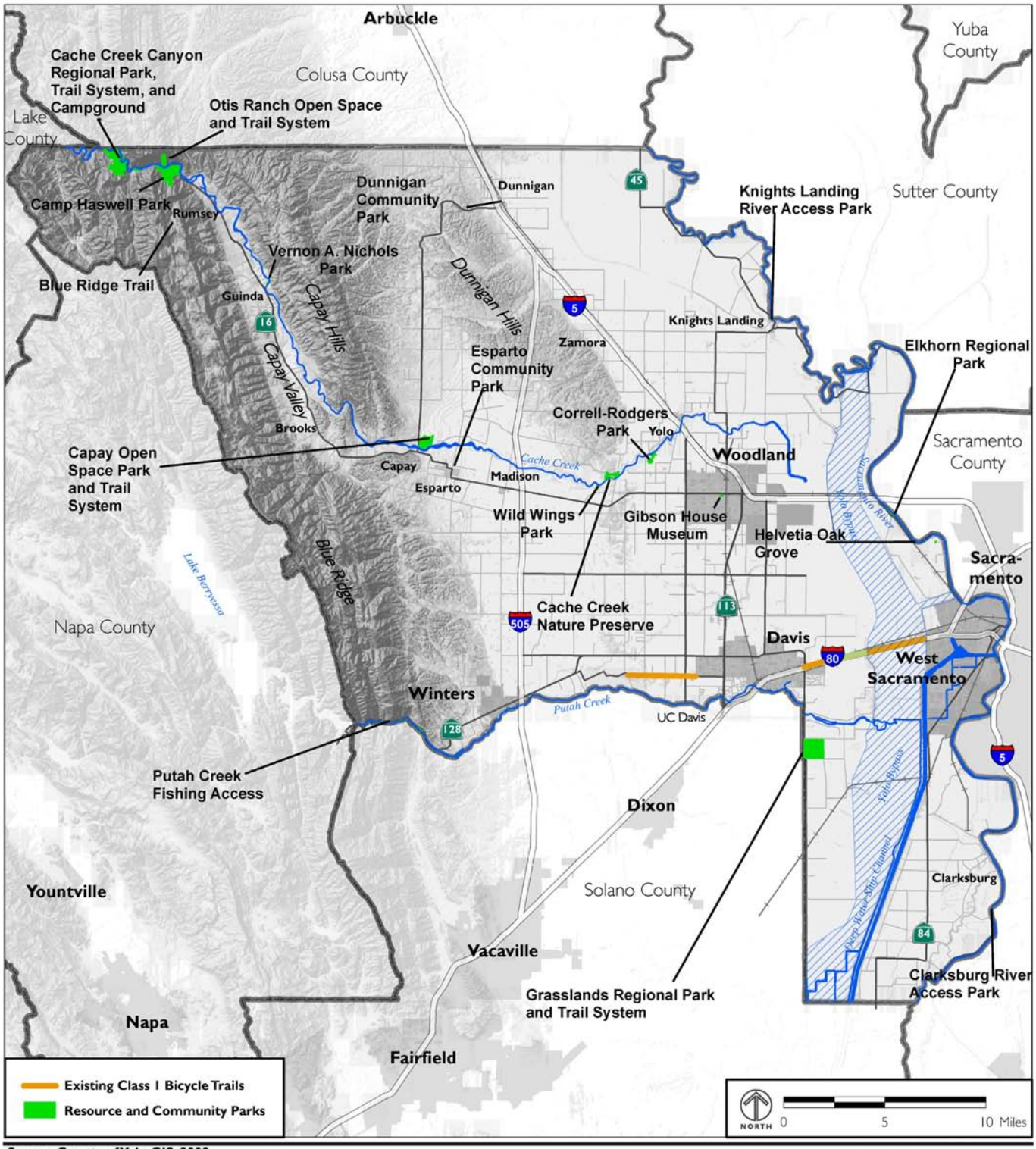
1. Background Information

a. Existing Resource Parks

This section addresses County "resource" parks including regional and open space parkland managed for multiple objectives. Existing parks and trails are shown in Figure CO-1. Community (neighborhood parks), such as those located in Esparto and Dunnigan, and the County Historical Museum facility are discussed in the Public Facilities and Services Element. A complete list of existing County Parks is provided in Table CO-1. A map of proposed future park facilities is provided in Figure CO-2.

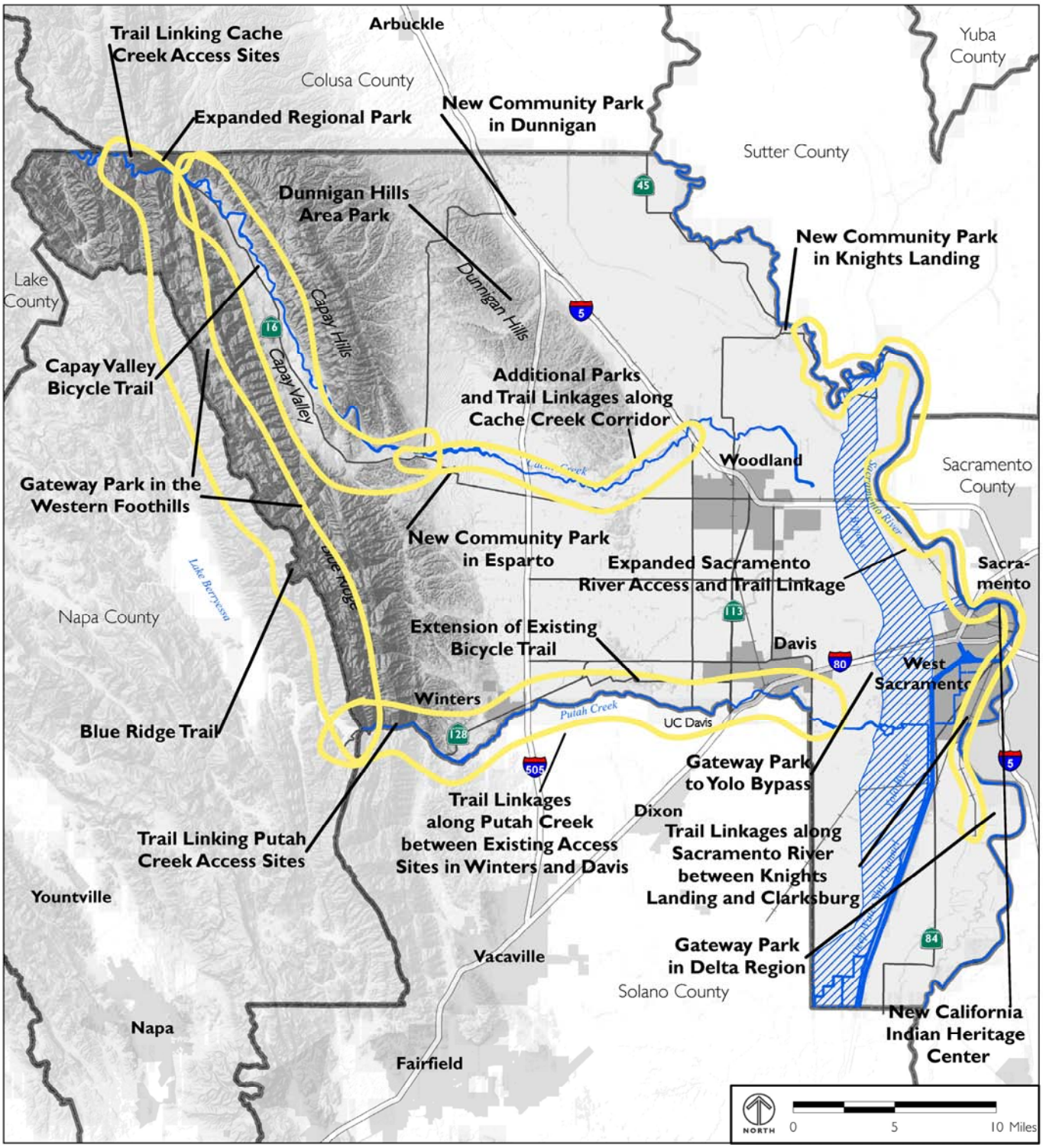
The term "resource" park is used herein to refer to regional and/or open space parkland, typically much larger in size than a community park, typically characterized by passive and/or very low-management uses, and intended to serve both the county population and outside visitors, rather than an individual community. In contrast community (or neighborhood) parks are small in area (less than 10 acres), usually located in or near small population centers, and developed for a variety of community uses, gatherings, and events. These parks are intended to provide active recreational areas, such as playgrounds, sports fields, and sports courts.

FIGURE CO-1 **EXISTING PUBLIC PARKS AND TRAILS**



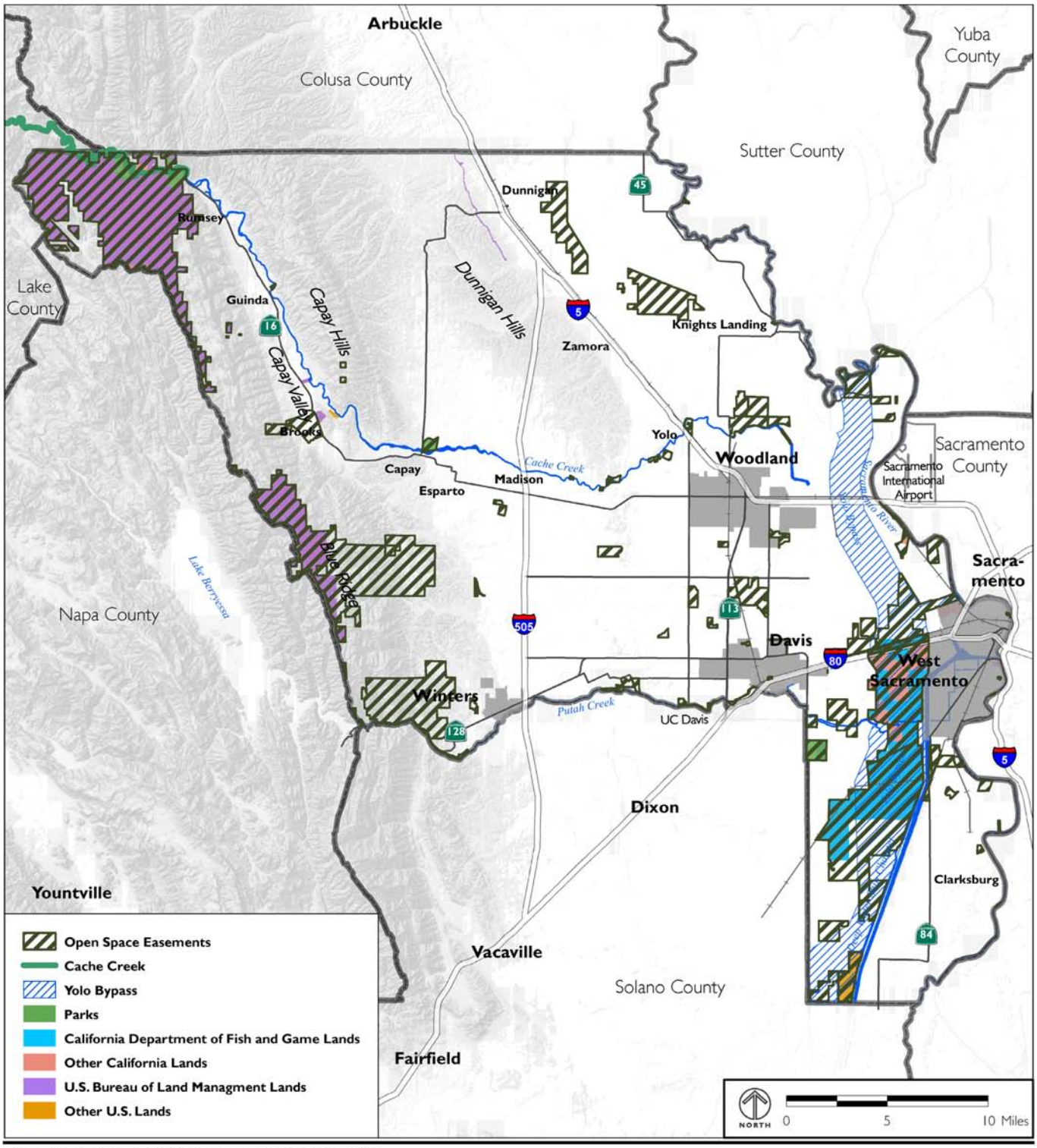
Source: County of Yolo GIS, 2009.

FIGURE CO-2 **FUTURE PARKS AND TRAILS**



Source: Yolo County GIS, 2009.

FIGURE CO-3 **PUBLICLY-OWNED OPEN SPACE AREAS**



Sources: County of Yolo GIS, 2006; Department of Fish and Game, 2000.

TABLE CO-1 **EXISTING COUNTY PARKS**

Park	Acreage	Location
Dunnigan Community Park	0.5	3640 County Road 89A, Dunnigan
Esparto Community Park	1	17001 Yolo Avenue, Esparto
Cache Creek Canyon Regional Park, Trail System and Campground	685	1475 State Route 16, Rumsey
Cache Creek Nature Preserve	119	Southwest corner of County Road 20X and 94B, north of Cache Creek, Woodland
Camp Haswell Park	7	1999 State Route 16, Rumsey
Capay Open Space Park and Trail System	41	15560 County Road 85, Capay
Clarksburg River Access Park	4	38125 Old River Road, Clarksburg
Correll-Rodgers Habitat Area	40	East of County Road 96 and south of Cache Creek, Woodland
Elkhorn Regional Park	49	18989 Old River Road, West Sacramento
Gibson House Museum	2	512 Gibson Road, Woodland
Grasslands Regional Park and Trail System	313	30475 County Road 104, Davis
Helvetia Oak Grove	12	20470 Old River Road, West Sacramento
Knights Landing River Access Park	4	9350 State Route 45, Knights Landing
Nichols Park	21	17195 County Road 57, Guinda
Otis Ranch Open Space and Trail System	587	West of State Route 16, Rumsey
Putah Creek Fishing Access	87	24135 State Route 128, Winters
Wild Wings Park	17	North of Goldeneye Street and south of Cache Creek, Woodland
TOTAL	**1976.5**	

Yolo County owns and/or manages a number of resource parks; however, the vast majority of open space in the County remains in private ownership. Additional public and quasi-public landowners include non-profit organizations, tribal groups and non-County public agencies, including the incorporated cities, the University of California, the State and federal governments. Figure CO-3 shows the various existing publicly owned or managed open space lands in the county.

b. Existing Natural Open Space

Large open space areas in Yolo County are owned and managed by a variety of entities including federal, State, and local government, non-governmental organizations, commercial mitigation banks, and other private interests. Publicly owned lands account for approximately six percent of the county land area. Large properties under public ownership and/or management in Yolo County include:

- The Yolo Bypass Wildlife Area (Wildlife Area) is 16,770 acres of managed wildlife habitat and agricultural land located within the southern floodway of the Yolo Bypass.[1] A portion of the Wildlife Area spans Interstate 80 adjacent to the Yolo Causeway, between the cities of Davis and West Sacramento. The Wildlife Area is a public and private restoration project managed by the California Department of Fish and Game (DFG) in consultation with the Yolo Basin Foundation. In 1997, the U.S. Army Corps of Engineers restored wetlands and associated habitats within the Wildlife Area. This project, originally named the Yolo Basin Wetlands, was renamed the Vic Fazio Yolo Wildlife Area. The entire wildlife area, however, is officially named the Yolo Bypass Wildlife Area.
- The Blue Ridge Berryessa area consists of 785,000 acres along the spine of the western Blue Ridge Mountains in the northwestern part of Yolo County, and includes portions of Colusa, Solano, Napa and Lake Counties. The area remains primarily in private ownership and is not subject to State or federal management. The Blue Ridge Berryessa Natural Area Conservation Partnership (BRBNACP) is a collaboration involving various private land owners; businesses; local, state, and federal agencies; non-profit organizations; and supporters working to protect and enhance the 600,000 acre BRNBA. To date, 50,000 acres have been conserved through easements and purchases.
- The lower Cache Creek planning area includes over 28,000 acres of land with state designated mineral resources, which includes about 18,250 acres of known "significant" deposits (designated on the Land Use Map with the MRZ Overlay). Within the Cache Creek planning area the County has designated an Open Space area of about 5,000 primarily privately owned acres which fall under the management guidance and regulation of the Cache Creek Resources Management Plan (CCRMP). As a by-product of permitted aggregate mining within the Cache Creek planning area there is an increasing acreage of dedicated land transferring into public ownership. Public access to these areas is anticipated to increase over time pursuant to the CCRMP

  The CCRMP is a component of the Cache Creek Area Plan (CCAP), which is an adopted part of this General Plan. The focus of the CCAP is groundwater protection, agricultural preservation, restoration of Cache Creek, and limitation and regulation of mining.
- The Cache Creek Wild and Scenic River Area includes 31 miles of upper Cache Creek in Lake and Yolo counties that were added to the State Wild and Scenic Rivers System in 2005. Designation of the upper reaches of the Creek as "wild and

[1] The Yolo Basin Foundation, *Land Management Plan for the Yolo Bypass Wildlife Area*, page 1-1.

scenic" supports the creek's scenic, recreational, wildlife, and fishery values and precludes new dams and water diversions.

The federal government owns 30,225 acres[2] and the State of California owns 17,257 acres[3] of land in unincorporated Yolo County managed for open space purposes. Each of the four Yolo County cities also own public open space, mostly in the form of parkland within their boundaries. Notably, the City of Davis has acquired open space lands in a number of locations around its edge, and a number of open space areas are owned and managed by the University of California.

Agricultural lands are often considered informal open space, and indeed are treated by the State as Open Space for the Managed Production of Resources. Most agricultural lands are privately held and generally are not open to the public. As noted above, agriculture and rangeland are addressed in the Agriculture and Economic Development Element.

c. Future Natural Open Space

Yolo County has great potential for new open space acquisitions in the future. Expanding resource parks opportunities and other open space is important to the values of the County. As shown in Figure CO-2, the County plans to add new resources parks and other open space in key areas over time.

2. Policy Framework

GOAL CO-1	**Natural Open Space. Provide a diverse, connected and accessible network of open space, to enhance natural resources and their appropriate use.**

Policy CO-1.1 Expand and enhance an integrated network of open space to support recreation, natural resources, historic and tribal resources, habitat, water management, aesthetics, and other beneficial uses.

Policy CO-1.2 Develop a connected system of recreational trails to link communities and parks throughout the county.

[2] Within the unincorporated area only. Does not include Tribal Trust land, DQ University, freeways, or highways.

[3] Within the unincorporated area only. Does not include UC Davis, freeways, highways.

Policy CO-1.3 Create a network of regional parks and open space corridors that highlight unique resources and recreational opportunities for a variety of users.

Policy CO-1.4 Provision of an appropriate level of public facilities and infrastructure shall be a priority for all County park facilities.

Policy CO-1.5 Establish future resource parks close to population centers, where feasible.

Policy CO-1.6 Develop "gateways" or trailheads that provide access for the public to County, State, and Federal lands. Where located on private land, gateways shall be developed working with willing landowners.

Policy CO-1.7 Support efforts by willing landowners and non-profit groups to provide new opportunities for outdoor recreation. (Policy CO 1.29)

Policy CO-1.8 Encourage responsible stewardship of private lands. Promote increased opportunities for public access to waterways and other natural areas.

Policy CO-1.9 Promote the conservation of environmental resources in new and existing park and open space facilities.

Policy CO-1.10 The target threshold for resource parks (regional and open space parks) shall be 20 acres per 1,000 total County population (both unincorporated and incorporated). Larger ratios may be appropriate in Specific Plan areas to accommodate important natural features and/or safety areas.

Policy CO-1.11 Coordinate the development of recreation areas and public open space with regional trail planning.

Policy CO-1.12 Create opportunities for ecotourism.

Policy CO-1.13 Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable, natural open space policies of the Land Use and Resource Management Plan of the Delta Protection Commission.

Policy CO-1.14 Support the preservation of open space consistent with this General Plan, via acquisition of fee title or easement interest by land trusts, government agencies, and conservancies from willing landowners.

Policy CO-1.15 Support efforts to acquire either fee title or easements on additional open space areas adjoining existing protected natural resource areas to increase the size, connectivity, and buffering of existing habitat.

Policy CO-1.16 Coordinate open space acquisition with habitat acquisition that occurs pursuant to the Yolo Natural Heritage Program.

Policy CO-1.17 Out-of-county mitigation easements in Yolo County for the loss of open space, agriculture, or habitat in other jurisdictions, and flood easements in Yolo County are not acceptable unless the project meets all of the following criteria:

- Prior notification to Yolo County;
- Consistency with the goals and policies of the Yolo County General Plan, particularly as related to planned growth, infrastructure, and agricultural districts;
- Secured water rights and infrastructure to economically maintain the proposed mitigation use;
- Requirements that existing agricultural operations continue to be farmed for commercial gain;
- Prohibitions on residential use;
- Mandatory wildlife-friendly strategies and practices;
- Compensation to Yolo County for all lost direct and indirect revenue; and
- Accommodation of recreational uses, such as hunting, fishing, bird-watching, hiking, etc.

Where proposed easements meet the above criteria, no further approval is needed. Where one or more criteria are not met, discretionary approval is required.

Policy CO-1.18 Work with the Blue Ridge Berryessa Natural Area Conservation Partnership, the Bureau of Land Management, Napa County, California Department of Fish and Game, and other landowners on a voluntary basis to complete the Blue Ridge Trail through voluntary acquisitions.

Policy CO-1.19 Support the development of a new State Park in Yolo County, with emphasis on expanding opportunities for family camping and water-related recreation, protecting new lands, and incorporating an agricultural heritage park.

Policy CO-1.20 Support development of a new off-highway vehicle (OHV) park at an appropriate location.

Policy CO-1.21 Emphasize the use of native grasses, shrubs and trees as the primary focus of restoration within resource parks and other open spaces.

Policy CO-1.22 Work with concessionaires and lessees to provide recreational amenities that do not conflict with other park uses or general public access.

Policy CO-1.23 Increase public access and recreational uses along waterways wherever feasible, particularly Cache Creek, Lower Putah Creek, the Yolo Bypass, and the Sacramento River.

Policy CO-1.24 Allow for specified areas of resource parks to be preserved, enhanced and/or restored as mitigation sites for public agencies only, consistent with the requirements of appropriate regulatory and funding agencies, provided that adequate compensation, including funding for operations and maintenance of the mitigation, is provided.

Policy CO-1.25 Support development of the new California Indian Heritage Center in the City of West Sacramento.

Policy CO-1.26 Support improved access for bank fishing.

Policy CO-1.27 Support the relocation of the California Governor's mansion to Yolo County.

Policy CO-1.28 Balance the needs of agriculture with recreation, flood management, and habitat, within the Yolo Bypass.

Policy CO-1.29 Require clustering and creative site planning in new development areas to preserve and enhance areas of contiguous open space to the extent feasible.

3. Implementation Program

Action CO-A1 Update the Parks Master Plan as necessary to implement the goals, policies, and actions of relevant portions of the Conservation and Open Space Element. (Policy CO-1.1, Policy CO-1.2, Policy CO-1.3, Policy CO-1.12, Policy CO-1.24, Policy CO-1.25)
Responsibility: Parks and Resources Department
Timeframe: 2010/2011

Action CO-A2 Establish permanent areas of agriculture and open space between cities and unincorporated towns to ensure the continued distinctiveness of each community. (Policy CO-1.2)
Responsibility: Planning and Public Works Department, Parks and Resources Department
Timeframe: 2012/2013

Action CO-A3 Seek to acquire voluntary easements to ensure connectivity with the conservation areas established through the Blue Ridge Berryessa Natural Area Conservation Partnership. (Policy CO-1.1, Policy CO-1.3, Policy CO-1.8, Policy CO-1.16, Policy CO-1.19)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A4 Pursuant to the Cache Creek Area Plan, develop a recreation plan for the Cache Creek Parkway including a range of public activities and uses. (Policy CO-1.24)
Responsibility: Parks and Resources Department
Timeframe: 2012/2013

Action CO-A5 Clearly define boundaries between public open space and private agricultural lands through mapping, signage, fencing, and/or other appropriate means to discourage trespassing. (Policy CO-1.1)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A6 Connect the future Bay Delta Trail system, the future trail system in the lower Yolo Bypass, and the future Cache Creek Parkway system, and link those trails to the American River Bikeway system in Sacramento County. (Policy CO-1.1, Policy CO-1.3, Policy CO-1.12, Policy CO-1.19, Policy CO-1.28)
Responsibility: Parks and Resources Department
Timeframe: 2029/2030

Action CO-A7 Prioritize the construction of multi-use trails that provide links between already established trails and bicycle routes. (Policy CO-1.1, Policy CO-1.2, Policy CO-1.4)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A8 Amend the Grasslands Park Master Plan to incorporate the McClellan/Davis Telecommunications Site, including the establish-

ment of an endowment and ongoing monitoring of endangered species. (Policy CO-1.1, Policy CO-1.10)
Responsibility: County Administrator's Office, General Services Department, Parks and Resources Department
Timeframe: 2008/2009

Action CO-A9 Pursue State grant funds to restore areas of the County impacted by illegal OHV activity, to protect areas from unauthorized use through enforcement, and to redirect users to an OHV park. (Policy CO-1.10, Policy CO-1.21)
Responsibility: Parks and Resources Department
Timeframe: 2019/2020

Action CO-A10 Pursue a countywide tax and/or bond assessment so that all residents contribute fairly to the planning, acquisition, operation, and maintenance of resource parks. (Policy CO-1.1, Policy CO-1.2, Policy CO-1.3, Policy CO-1.4)
Responsibility: County Administrator's Office
Timeframe: 2010/2011

Action CO-A11 Provide recreational uses that are river or creek dependent in locations directly on Cache Creek, Putah Creek, and the Sacramento River. 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 CO-1.1, Policy CO-1.24, Policy CO-1.27, Policy CO-1.28)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A12 Cluster recreational improvements at various locations along Cache Creek, Lower Putah Creek, and the Sacramento River, to reduce habitat disturbance and provide efficient and cost-effective management by the County. (Policy CO-1.10)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A13 Design access to resource parks, whether by road or by trail, to go through a controlled entry point wherever feasible. (Policy CO-1.10)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A14 Implement the Elkhorn Specific Plan to establish a resource park and public access to the Helvetia oak grove, create public access along the waterway north of County Road 22, and integrate management of both sites with the nearby Elkhorn Regional Park. (Policy CO-1.1, Policy CO-1.6, Policy CO-1.24)
Responsibility: Planning and Public Works Department
Timeframe: 2019/2020

Action CO-A15 Combine parks and trails with open space and wildlife conservation areas where appropriate. (Policy CO-1.1, Policy CO-1.10)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A16 Enhance parking and access at existing resource parks, including the Putah Creek fishing access, Cache Creek Canyon Regional Park, and the Camp Haswell/Otis Ranch property. Encourage the use of alternative transportation by providing bike racks, bus stops, and other appropriate facilities. (Policy CO-1.4)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A17 In order to strengthen an appreciation of natural resource values, local place, and identity, include educational programs, materials, and signs in resource parks that address water, geology, plants, animals, events, and people. (Policy CO-1.1)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A18 Establish a program for camp hosts/docents at all resource parks, where feasible. (Policy CO-1.1, Policy CO-1.10)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A19 Allow public agencies to establish, protect and/or enhance habitat for mitigation purposes within specific areas of resource parks, consistent with the requirements of appropriate regulatory agencies, where an endowment is created to fund the monitoring and maintenance of the habitat. Allow non-profit organizations to manage such areas, where appropriate. (Policy CO-1.1, Policy CO-1.15, Policy CO-1.25)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A20 Develop and implement a system of open space corridors and trails that connects each community and city by integrating waterways, scenic areas, significant habitat areas, County parks, and other special resource areas. (Policy CO-1.1, Policy CO-1.2, Policy CO-1.3, Policy CO-1.12, Policy CO-1.24, Policy CO-1.25)
Responsibility: Parks and Resources Department
Timeframe: 2010/2011

Action CO-A21 Create "Friends of Yolo Parks" and "Adopt-A-Park" programs and encourage participation by non-profit organizations. (Policy PF-3.3, Policy PF-3.7)
Responsibility: Parks and Resources Department
Timeframe: 2010/2011

Action CO-A22 Maintain reasonable fee structures for the use of County parks and recreation facilities by resident and non-resident patrons. (Policy PF-3.7)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A23 Partner with the private sector and non-government organizations to provide services and/or maintain all or components of park facilities, wherever practical. (Policy PF-3.2, Policy PF-3.7)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A24 Develop a special area plan to govern land use management within the Yolo Bypass. (Policy CO-1.28)
Responsibility: Planning and Public Works Department, Parks and Resources Department
Timeframe: 2013/2014

D. Biological Resources

1. Background Information

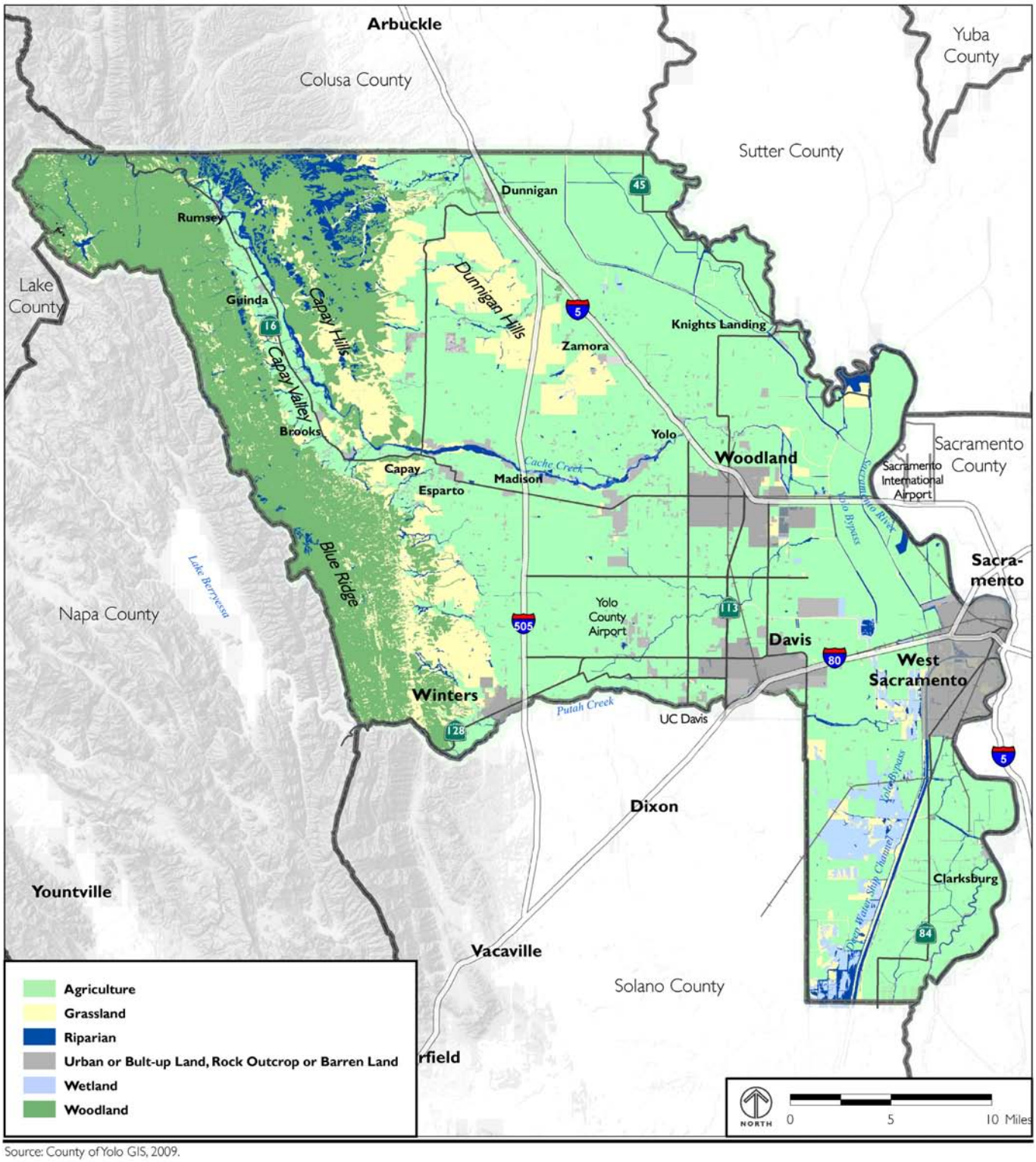
Yolo County is a biologically and topographically diverse landscape that extends from the agricultural areas of the Central Valley, westward into the chaparral and woodland communities of the Interior Coast Ranges, and southward into the wetlands and pasturelands of the northern Sacramento-San Joaquin River Delta.

Yolo Bypass Wildlife Area *Source: Dave Feliz*

In the broadest sense, Yolo County can be characterized by two main land uses, 1) agricultural lands occurring primarily in the lower elevations on the valley floor, and 2) natural lands occurring primarily in the Interior Coast Ranges on the western side of the county and interspersed within the agricultural landscape as narrow riparian corridors,

remnant oak woodlands, and wetlands. Figure CO-4 illustrates five broad vegetation categories in Yolo County: agricultural lands, grasslands, woodlands, riparian areas, and wetlands. Each of these broad categories may represent a variety of plant communities and wildlife habitats. Other notable vegetation communities in the county include oak savannah, a transitional community between woodland and prairie grassland types; chaparral, a diverse and biologically rich woodland/shrub community found in the Interior Coast Ranges in association with the higher elevation oak woodlands; a variety of wetland communities including natural and managed seasonal wetlands and marshes; and remaining patches of valley oak woodland on the valley floor occurring within the agricultural landscape. Each of these communities and habitats provide important biological value, support numerous plant and wildlife species, and are all part of an interrelated ecological landscape. An effective conservation approach considers the interrelatedness of this system as a whole and strives to preserve and restore the functioning of ecologic processes by maintaining the necessary connectivity across the landscape.

FIGURE CO-4 **VEGETATIVE TYPES**



Source: County of Yolo GIS, 2009.

Climate change is anticipated to result in great changes to the biological resources within the county. Shifts in food sources, timing of natural processes (e.g. hibernation, migration, reproduction, and estivation) and active growing periods, chilling and heating, will all have direct links to shifting climate and will redefine many essential relationships in natural communities. These shifts will also have the potential to dramatically impact agriculture, possibly changing pest complexes, water demands and even viability of some crops and cropping patterns. Traditional approaches to biological resource conservation have focused on defining habitat areas. With looming changes in climate, there is less confidence that a particular parcel will retain the habitat features needed to ensure maintenance of desired species.

In the coming decades, a greater emphasis on corridors and gradients of conditions will need to be built into natural resource management in order to allow natural communities to adjust to forcing factors generated by climate change. Policies and practices associated with this emphasis are new and will require flexibility for agencies and land managers to adjust to the demands of managing a dynamic system.

a. Agricultural Lands

Yolo County has a diverse matrix of agricultural types including a variety of row and grain crops, hay crops, orchards and vineyards, and dryland and irrigated pasturelands that provide significant value to resident, migratory, and wintering wildlife. Agricultural lands are found primarily in the lower elevation portion of the county east of the Interior Coast Ranges and extending northwest through Capay Valley. Table CO-2 represents the total harvested acres of agricultural crops and land uses within the county in 2007, the most recently available data (Yolo County 2008). It indicates the relative abundance of the major crops and combines the crops with smaller amounts of harvested acreage into several miscellaneous categories. In 2007, approximately 70% of the county was under active agricultural production (including grazing land). Remaining areas included oak woodlands and other natural areas, urban areas, wetlands, idle lands, and other uses.

Table CO-2 indicates that dry pasture (primarily grazed annual grassland) was the dominant agricultural land use in the county (29.3%), occurring mainly in the foothills along the western edge of the Central Valley and the Dunnigan Hills. Nearly all of the irrigated cropland acreage is found on the valley floor east of the Interior Coast Ranges extending into the southeast panhandle. In 2007, the majority of the irrigated cropland acreage (48.7% of the total agricultural land use) included six crop types: alfalfa, tomatoes, rice, wheat, orchards, and sunflower. The remaining 22% of the agricultural land use was comprised of a wide variety of field and vegetable crop types, vineyards, seed crops, nursery products, and irrigated pasture.

TABLE CO-2 **AGRICULTURAL COVER TYPES IN YOLO COUNTY (2007)**

Crop Type	Acres	Percent of Total
Dry Pasture	135,775	29.3
Alfalfa Hay	53,959	11.6
Tomatoes	42,149	9.1
Rice	36,600	7.9
Wheat	35,613	7.7
Orchard	29,352	6.3
Sunflower	28,143	6.1
Misc. Field Crops[a]	26,029	5.6
Vineyard	11,898	2.6
Irr. Pasture	11,661	2.5
Field Corn	11,596	2.5
Grain Hay[b]	11,168	2.4
Other Seed Crops	9,545	2.1
Safflower	9,033	1.9
Organic Vegetable Crops	5,932	1.3
Misc. Vegetable Crops[c]	3,561	0.7
Melons	1,256	0.3
Nursery Products	492	0.1
Total	**463,762**	**100**

[a] Includes barley, dry beans, screenings, sorghum grain, and stubble.
[b] Includes barley, oat, ryegrass, sudangrass, and volunteer hay.
[c] Includes cabbage, cantaloupes, corn, cucumbers, lettuce, melons, peppers, pumpkins, squash, sweet corn, tomatoes, watermelon, and other truck crops.
Source: Yolo County, 2008.

Table CO-3 represents the change in agricultural crops and land uses in Yolo County between 1997 and 2007. Overall, the agricultural landscape has remained fairly constant over time and several major crop types have been a significant part of the agricultural landscape in Yolo County for many decades, including tomatoes, wheat, alfalfa, and field corn. However, there have been some notable changes in the percentages of harvested acres of several crops, even within the last 10 years (Table CO-3). Among these include a decrease in corn, safflower, and melons; an increase in vineyards, sunflower, and vegetables; and the elimination of sugar beets.

While nearly entirely altered from its native condition, agricultural lands in Yolo County continue to represent an important landscape for numerous wildlife species. Raptors, waterfowl and other water birds, a variety of songbirds, and small mammals use agricultural fields for nesting and foraging; but to large extent, the enhanced value of agricultural habitats in Yolo County is due to the integration of natural communities within the agricultural landscape. Adjacent riparian corridors, roadside trees, windbreaks, woodlots, isolated trees, and field borders provide important nesting, roosting, and cover habitat for many local and migratory species that also use the agricultural fields as foraging habitat. The retention of these adjacent habitats has greatly enhanced the wildlife value of agricultural habitats in Yolo County and their continued retention and restoration is essential in maintaining this value over time.

Agricultural lands also provide seasonal value to wildlife due to growth and harvesting regimes and management practices. For example, the value of many crop types is enhanced during harvesting due to the exposure and accessibility of rodent prey for foraging raptors. Because of the diverse nature of Yolo County farmlands, harvesting operations occur from early summer to late fall, providing enhanced access to abundant prey for foraging raptors throughout most of the breeding season. Flood irrigation of alfalfa and other hay fields and irrigated pastures also enhances prey accessibility and attracts a variety of water birds and raptors.

Flooded rice lands are also particularly important during the breeding season for many wildlife species by providing aquatic habitat and invertebrate prey for a variety of water birds, amphibians, and reptiles. Other agricultural fields are flooded during the winter and managed as waterfowl habitat. These fields attract abundant wintering waterfowl and act to some extent as surrogate wetlands providing essential winter aquatic habitat along the Pacific Flyway.

b. Natural Lands

Approximately 21 percent of the county can be defined as natural lands. These include native oak woodlands, prairie grasslands, and chaparral communities in the western mountains and foothills, riparian woodlands, native and restored wetland communities, and remnant valley oak groves and valley oak trees on the valley floor.

TABLE CO-3 **AGRICULTURAL CROPS ACREAGE IN YOLO COUNTY (1997 TO 2007)**

Crop Type	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Acres and % Δ 97-07
Dry Pasture	144,950	136,368	119,533	124,258	126,510	130,411	133,965	147,098	136,806	122,775	135,775	-9,175/-6.3
Wheat	54,836	39,014	33,832	43,144	43,774	33,076	56,227	44,098	34,647	20,976	35,613	-19,223/-35.1
Tomatoes	49,200	56,600	67,114	48,575	48,575	42,812	38,274	45,129	42,232	37,026	42,149	-7,051/-14.3
Field Corn	36,915	18,518	13,513	28,125	18,308	9,195	6,495	9,523	4,238	2,452	11,596	-25,319/-68.6
Alfalfa Hay	33,983	42,430	43,024	38,720	45,885	53,231	55,914	52,904	45,776	59,269	53,959	19,976/58.8
Safflower	27,040	24,278	29,545	24,558	27,650	20,765	20,674	9,991	12,955	10,176	9,033	-18,007/-66.6
Rice	25,800	17,816	24,483	36,229	28,717	32,446	37,303	45,655	34,670	29,997	36,600	10,800/41.9
Misc. Field	20,925	21,273	23,358	29,331	29,191	28,701	33,029	33,962	54,226	30,416	26,029	5,104/24.4
Other Seed	18,464	16,768	14,782	14,331	12,214	13,247	11,414	13,102	13,191	12,481	9,545	-8,919/-48.3
Orchard	18,368	18,039	17,023	18,889	18,056	18,478	19,364	19,313	21,777	22,988	29,352	10,984/59.8
Irr. Pasture	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	0/0
Vineyard	6,833	8,410	8,704	9,496	10,242	9,699	10,334	9,909	8,464	10,156	11,898	5,065/74.1
Oat Hay	6,018	8,802	7,340	7,566	7,826	13,466	10,958	7,383	7,855	[a]	[a]	1,837/30.5
Sunflower	5,679	5,831	10,381	4,377	4,540	3,372	9,294	13,403	13,615	16,623	28,143	22,464/395.6
Melons	5,324	2,333	4,575	4,342	3,364	3,613	4,005	2,585	1,949	1,778	1,256	-4,068/-76.4
Sugar Beets	4,526	1,570	1,871	1,029	0	0	0	0	0	0	0	-4,526/-100.0
Cotton	4,418	2,857	1,956	4,160	3,600	4,052	[b]	[b]	[b]	[b]	[b]	-366/-8.3
Misc. Vegetables	1,800	1,440	1,286	2,730	1,955	1,761	1,669	1,443	1,205	3,044	3,561	1,761/97.8
Organic Vegetables	1,556	2,425	2,830	3,335	6,253	5,405	4,692	4,998	4,515	6,003	5,932	4,376/281.2
Nursery Crops	524	293	406	440	584	502	515	489	505	571	492	-32/-6.1

[a] In 2006, oat hay was included under "grain hay", which included barley, ryegrass, sudan grass, and volunteer hay. Prior to 2006, these other "grain hay" types were included under Miscellaneous Field (with the exception of sudan grass, which was identified separately from 2000 to 2002). Miscellaneous Field also included other types such as soybeans, sorghum grain, and dry beans.

[b] Cotton was included under Miscellaneous from 2003 to 2007.

Wetlands

Wetlands include permanent marsh communities that are inundated all or most of the year, and seasonal wetlands that are inundated only a part of the year, typically during winter and spring. Native seasonal wetlands are uncommon in Yolo County and include several remaining patches of alkali sink between Davis and Woodland, and vernal pools associated with the prairie grasslands near Winters. Most seasonal wetlands in Yolo County are restored and managed to provide habitat for wintering waterfowl.

Significant areas of seasonal wetland and marsh communities are found primarily in the Yolo Basin, including the Yolo Bypass Wildlife Area, private lands in the southern panhandle, the Conaway Ranch north of Interstate 80, and the City of Davis Wetlands. Additional wetland habitats are found at the recently restored Roosevelt Ranch Preserve east of Zamora and in several other isolated locations throughout the central and eastern portions of the county.

Wetlands are among the most productive wildlife habitats, supporting many species of birds, mammals, reptiles, and amphibians. The presence of wetlands also enhances the biological value of the surrounding landscape because many species that find nesting and cover habitat in wetlands may forage more widely in agricultural or grassland habitats. Marsh communities, including non-tidal freshwater emergent wetland, tidal freshwater emergent wetland, and tidal perennial aquatic wetland provide nesting and cover habitat for many wetland- and aquatic-associated species. Seasonal wetlands provide important habitat for wintering waterfowl and other water birds; and during the dry summer and fall, seasonal wetlands are used by numerous raptor and songbird species.

Riparian

Riparian refers to streamside vegetation that occurs along rivers, creeks, and sloughs. In Yolo County, riparian woodland and shrub communities occur along several natural rivers, creeks, and sloughs and constructed water delivery canals in the county, including Sacramento River, Putah Creek, Cache Creek, Oat Creek, Bird Creek, Buckeye Creek, Willow Slough, Dry Slough, Elk Slough, Sutter Slough, Tule Canal, Deep Water Ship Channel, and the Knights Landing Ridge Cut. Most of the creeks in the county drain the Interior Coast Ranges and flow west to east toward the Sacramento River basin. The sloughs are backwater drainages of the Sacramento River; and the canals were constructed for water delivery or transport purposes. The most significant riparian communities occur along Putah Creek and Cache Creek. Both support relatively dense valley oak/cottonwood riparian forest and are significant wildlife movement corridors between the Interior Coast Ranges on the west and the Sacramento River basin on the east. Smaller creeks and sloughs also support significant remaining riparian corridors that interconnect the mountainous landscape on the west with the valley floor or extend north-south through the lower elevation agricultural landscape.

Riparian communities are often highly productive both in terms of vegetation and plant diversity, and wildlife use. Riparian habitat has declined dramatically since the late 1800s due mostly to agricultural conversion, and remaining riparian corridors are essential in maintaining natural linkages between geographic areas and migratory and dispersal corridors for wildlife. Some riparian woodlands in the county support a multi-structured canopy with a variety of native trees including cottonwood, valley oak, walnut, willow, Oregon ash, alder, and sycamore, and an understory that may include a variety of shrub species. Other riparian corridors support mostly shrub species with a sparse over-story canopy. Riparian communities are also home to an abundance of wildlife from invertebrates to large mammals. They are essential habitat for many nesting and migratory birds and are considered to support the most diverse bird communities in the western United States.

Riparian vegetation is also essential in maintaining the quality of in-stream habitat by providing shade, food, and nutrients. Downed trees, willow mats, and other vegetation scour pools, form logjams and dams, and provide important habitats for fish, aquatic reptiles and amphibians, and aquatic insects.

Oak Woodlands/Chaparral

Oak woodland and chaparral communities occur in the higher elevations of the inner Coast Ranges. These oak woodlands are dominated by blue oak and live oak, and include a variety of mid- and understory species such as California buckeye, redbud, and deer brush. Interspersed within the oak woodland community are large and small patches of chaparral. In some areas, the chaparral community contains a variety of representative species, including manzanita, California buckeye, scrub oak, chamise, and toyon, and supports abundant wildlife, some of which is found solely or predominantly in chaparral habitats. In other areas, the chaparral is dominated by dense chamise and is less productive.

The oak woodland and chaparral community extends the length of the Interior Coast Ranges and provides essential habitat for an abundance of mid-and higher elevation wildlife species, including large mammals such as deer, gray fox, and mountain lion. This type is also home to many resident and migratory bird species, small mammals, and reptiles.

Grassland Prairies/Valley Oak Savannah

Prairie grasslands are found primarily in the foothills of the Interior Coast Ranges along the west side of the Central Valley, in open patches in the higher elevations, and in the Dunnigan Hills, a prominent anticlinal formation that extends from approximately the northern county border east of Interstate 5 southeast to Cache Creek. They also occur as valley oak savannah with scattered valley oak trees within the grassland community in the foothills immediately west of the Central Valley floor. While native species con-

tinue to persist in some areas, most of the prairie grasslands are dominated by non-native annual grasses.

Prairie grasslands provide important habitat for small rodents, ground-nesting birds, and a variety of reptiles and burrowing mammals.

Remnant Oak Trees, Groves, and Tree Rows
Several small remnant valley oak groves continue to persist in several patches on the valley floor within Yolo County. Some are remnant of historic pre-cultivation stands of valley oak woodland that occurred in portions of the lower elevation areas of the county. There are numerous remnant individual valley oak trees that continue to persist in agricultural fields, particularly in the northern portion of the county, north of Woodland. Tree rows are also common along roadsides or field borders in agricultural areas consisting of native or non-native trees, including valley oak, walnut, or eucalyptus trees.

These habitats have become increasingly important to nesting and roosting birds and provide key nesting habitat for several raptor species that are found in relative abundance in Yolo County, including red-tailed hawk and the state-threatened Swainson's hawk. Species that use these habitats for nesting and roosting also use the adjacent agricultural habitats for foraging, and thus their presence enhances the overall value of the agricultural landscape.

c. Special-Status Species
Many special-status species (including state and federal threatened and endangered species, state species of special concern and fully protected species, and plants listed by the California Native Plant Society) occur or have potential to occur in Yolo County. These species are listed in Table CO-4. Special-status species occur throughout the county in all of the vegetation communities and habitats described above. However, while several species such as bald eagle, golden eagle, and Cooper's hawk are known to occur primarily in the mountainous regions on the western edge of the county, most are known to occur in the more disturbed agricultural landscape of the Central Valley.

As noted above, in many cases the retention of natural features within this landscape greatly enhances habitat conditions for species, such as the Swainson's hawk, that have successfully adapted to an agricultural landscape. Others continue to persist in smaller patches of suitable habitat, such as the state-threatened black rail, which has been detected in the wetlands on the Yolo Bypass Wildlife Area; and the western burrowing owl, which uses remaining grasslands, roadside edges, artificial berms, and some agricultural habitats. Some species have not been detected in the county for many years, such as the western yellow-billed cuckoo, due to limited habitat availability and quality. Preservation and restoration of suitable habitats for these species is key to their continued occurrence or reestablishment in Yolo County.

TABLE CO-4 **SPECIAL-STATUS SPECIES KNOWN OR WITH POTENTIAL TO OCCUR IN YOLO COUNTY**

Species Common Name	Federal Listed	State Listed
PLANTS		
Palmate-bracted birdsbeak	E	E
Colusa grass	T	E
Crampton's tuctoria	E	E
CRUSTACEANS		
Conservancy fairy shrimp	E	-
Vernal pool fairy shrimp	T	-
Vernal pool tadpole shrimp	E	-
INSECTS		
Valley elderberry longhorn beetle	T	-
AMPHIBIANS		
California tiger salamander	E	SSC
Foothill yellow-legged frog	-	SSC
Western spadefoot	-	SSC
REPTILES		
Giant garter snake	T	T
Western pond turtle	-	SSC
BIRDS		
Bald eagle	T	E
Golden eagle	-	SSC
Swainson's hawk	-	T
White-tailed kite	-	FP
Northern harrier	-	SSC
Cooper's hawk	-	SSC
American peregrine falcon	-	E
Prairie falcon	-	SSC
California black rail	-	T
Greater sandhill crane	SC	T
Western snowy plover	T	SSC
Western yellow-billed cuckoo	SC	E
Black tern	-	SSC
Short-eared owl	-	SSC
Western burrowing owl	-	SSC
Loggerhead shike	-	SSC
Bank swallow	-	T

Species Common Name	Federal Listed	State Listed
Purple martin	-	SSC
Tricolored blackbird	-	SSC
MAMMALS		
Western red bat		SSC
Townsend's western big-eared bat		SSC
Pallid bat		SSC
FISH		
Sacramento River Winter-run Chinook salmon	E	E
Delta smelt	T	T
Central Valley spring–run Chinook salmon	T	T
Central Valley steelhead	T	-

Notes: – = no listing.
Federal-Listed
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking.
State-Listed
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
SSC = species of special concern in California.
FP = fully protected.

d. Related Plans and Programs

Habitat Conservation Plan/Natural Communities Conservation Plan

The County is a member of the Yolo County Habitat joint powers authority (JPA), which is responsible for developing a combined Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP), known as the Yolo Natural Heritage Program (Yolo NHP). Habitat conservation plans identify the most biologically significant regions and outline measures to protect the ecological integrity of valuable habitat areas. Conservation plans are required to address special-status species, which are those plants and animals that are considered sufficiently rare by the scientific community and qualify for legal protection under State and/or federal Endangered Species Acts. The purpose of the Yolo NHP is to identify and protect the county's most biologically significant regions and most valuable habitat areas, in amounts and locations sufficient to sustain target species. The JPA also manages the Swainson's Hawk Interim Fee Mitigation Program, which purchases conservation easements to provide habitat for the threatened Swainson's hawk.

e. Yolo County Oak Woodland Conservation and Enhancement Plan

In January 2007, the Parks and Natural Resources Management Division published the *Yolo County Oak Woodland Conservation and Enhancement Plan*. Since 87 percent of the county's oak woodlands are privately owned, the purpose of this plan is to help coordinate voluntary oak woodland conservation and enhancement efforts and guide oak woodland mitigation. The Plan establishes a program to identify areas in Yolo County with the highest value habitat. Conservation and enhancement of these high value areas is addressed by encouraging landowners to preserve these areas from urban and rural development. With this plan, the County is able to apply for State money and other funding sources.

Programmatic Safe Harbor Agreement for the Restoration of Riparian and Wetland Habitat in Yolo County

The Programmatic Safe Harbor Agreement for the Restoration of Riparian and Wetland Habitat in Yolo County promotes ecosystem restoration, enhancement and management of native riparian and/or wetland habitats in Yolo County for the conservation of the federally threatened valley elderberry longhorn beetle and giant garter snake. It does so by providing regulatory assurances to landowners participating in restoration and management activities that their farming activities will not be negatively affected by introducing new habitat nearby. The agreement allows landowners to manage and create habitat for the valley elderberry longhorn beetle and giant garter snake without incurring additional regulatory restrictions on the use of their property. This program is administered by the Audubon California Landowner Stewardship Program.

f. Regulatory Framework

There are a variety of state and federal laws and regulations that have been implemented to protect special-status and other plant and wildlife species and their habitats, including the following.

Federal Endangered Species Act

USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) administer the federal Endangered Species Act (ESA). The ESA requires USFWS and NOAA Fisheries to maintain lists of threatened and endangered species and affords substantial protection to listed species. NOAA Fisheries' jurisdiction under the ESA is limited to the protection of marine mammals, marine fishes, and anadromous fishes; all other species are subject to USFWS jurisdiction.

USFWS and NOAA Fisheries can list species as either endangered or threatened. An endangered species is at risk of extinction throughout all or a significant portion of its range (ESA Section 3[6]). A threatened species is likely to become endangered within the foreseeable future (ESA Section 3[19]). Section 9 of the ESA prohibits the take of any fish or wildlife species listed under the ESA as endangered and most species listed

as threatened. Take, as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the species, including significant habitat modification." Section 9 also prohibits the "removal or reduction to possession" of any listed plant species "under federal jurisdiction" (i.e., on federal land, where federal funding is provided, or where federal authorization is required).

Federal Clean Water Act

The Clean Water Act (CWA) of 1977 established the basic structure for regulating discharges of pollutants into waters of the United States and gave the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs and set water quality standards for all contaminants in surface waters. Relevant sections include Section 404 (discharge of dredged or fill material), Section 401 (water quality certification), and Section 402 (National Pollutant Discharge Elimination System (NPDES) program).

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (Title 16, United States Code [USC], Part 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of MBTA.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions. Under this act, it is a violation to "…take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof…." Take is defined to include pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing.

National Environmental Policy Act

A federal action, such as the issuance of a Right-of-Way Grant on federal lands, requires compliance with the National Environmental Policy Act (NEPA). NEPA requires federal agencies to include in their decision-making process appropriate and careful consideration of all environmental effects of a proposed action and of possible alternatives. Documentation of the environmental impact analysis and efforts to avoid or minimize the adverse effects of proposed actions must be made available for public notice and review.

California Endangered Species Act

The California Endangered Species Act (CESA) prohibits take of wildlife and plants listed as threatened or endangered by the California Fish and Game Commission. *Take* is defined under the California Fish and Game Code as any action or attempt to "hunt, pursue, catch, capture, or kill." Like the ESA, CESA allows exceptions to the take prohibition for take that occurs during otherwise lawful activities. The requirements of an application for incidental take under CESA are described in Section 2081 of the California Fish and Game Code. Incidental take of state-listed species may be authorized if an applicant submits an approved plan that minimizes and "fully mitigates" the impacts of this take.

Natural Communities Conservation Act

The Natural Communities Conservation Act of 1991 was intended to provide an alternative and/or a collaborative approach to FESA and CESA. It was designed to represent a new approach to conservation. Instead of focusing on individual species (e.g., FESA/CESA), the NCCA focuses on protecting intact ecosystems across an entire region or landscape. NCCPs have become increasingly common in the development of regional plans that combine the HCP and NCCP processes.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that significant environmental impacts of proposed projects be reduced to a less-than-significant level through adoption of feasible avoidance, minimization, or mitigation measures unless overriding considerations are identified and documented.

California Fish and Game Code

The California Fish and Game Code establishes regulations that protect plant and wildlife resources in the state under the jurisdiction of the California Department of Fish and Game (DFG). Relevant sections include Sections 3511, 4700, 5050, and 5515 (Fully Protected Species); Sections 3503 and 3503.5 (Raptor and other Bird Nests); and Sections 1600–1607 (Streambed Alteration).

2. Policy Framework

GOAL CO-2	**<u>Biological Resources</u>. Protect and enhance biological resources through the conservation, maintenance, and restoration of key habitat areas and corresponding connections that represent the diverse geography, topography, biological communities, and ecological integrity of the landscape.**

Policy CO-2.1 Consider and maintain the ecological function of landscapes, connecting features, watersheds, and wildlife movement corridors.

Policy CO-2.2 Focus conservation efforts on high priority conservation areas (core reserves) that consider and promote the protection and enhancement of species diversity and habitat values, and that contribute to sustainable landscapes connected to each other and to regional resources.

Policy CO-2.3 Preserve and enhance those biological communities that contribute to the county's rich biodiversity including blue oak and mixed oak woodlands, native grassland prairies, wetlands, riparian areas, aquatic habitat, agricultural lands, heritage valley oak trees, remnant valley oak groves, and roadside tree rows.

Policy CO-2.4 Coordinate with other regional efforts (e.g., Yolo County HCP/NCCP) to sustain or recover special-status species populations by preserving and enhancing habitats for special-status species.

Policy CO-2.5 Protect, restore and enhance habitat for sensitive fish species, so long as it does not result in the large-scale conversion of existing agricultural resources.

Policy CO-2.6 Cooperate with the Department of Fish and Game in inventorying streams with spawning and rearing habitat, evaluating those streams' existing and potential habitat value, and determining current and potential fish population levels.

Policy CO-2.7 Encourage streamside property owners and appropriate public agencies to participate in fishery enhancement projects.

Policy CO-2.8 Encourage all public land management agencies to protect, restore, and enhance the fish habitat within their jurisdiction.

Policy CO-2.9 Protect riparian areas to maintain and balance wildlife values.

Policy CO-2.10 Encourage the restoration of native habitat.

Policy CO-2.11 Ensure that open space buffers are provided between sensitive habitat and planned development.

Policy CO-2.12 Support the use of controlled fire management where feasible and appropriate as a natural ecosystem process, to reduce the threat of catastrophic wildfire, to encourage oak recruitment, and to meet other resources management objectives in higher elevation woodland and chaparral communities.

Policy CO-2.13 Promote the use of oak woodlands conservation banks to mitigate for losses due to development impacts and to provide carbon sequestration for greenhouse gas emissions under applicable State programs.

Policy CO-2.14 Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates that support rare endemic species, with the following exception. The limited loss of blue oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided, and where losses are mitigated. (DEIR MM BIO-3a)

Policy CO-2.15 Encourage the use of mosquito abatement methods that are compatible with protecting fish and wildlife, including native insect pollinators.

Policy CO-2.16 Existing native vegetation shall be conserved where possible and integrated into new development if appropriate.

Policy CO-2.17 Emphasize and encourage the use of wildlife-friendly farming practices within the County's Agricultural Districts and with private landowners, including:

- Establishing native shrub hedgerows and/or tree rows along field borders.
- Protecting remnant valley oak trees.
- Planting tree rows along roadsides, field borders, and rural driveways.
- Creating and/or maintaining berms.
- Winter flooding of fields.
- Restoring field margins (filter strips), ponds, and woodlands in non-farmed areas.
- Using native species and grassland restoration in marginal areas.
- Managing and maintaining irrigation and drainage canals to provide habitat, support native species, and serve as wildlife movement corridors.
- Managing winter stubble to provide foraging habitat.
- Discouraging the conversion of open ditches to underground pipes, which could adversely affect giant garter snakes and other wildlife that rely on open waters.

- Widening watercourses, including the use of setback levees.

Policy CO-2.18 Coordinate with the Yolo County Resource Conservation District, Natural Resource Conservation Service, UC Cooperative Extension, and other farm organizations to encourage farming practices and the management of private agricultural land that is supportive of wildlife habitat values.

Policy CO-2.19 Support the use of sustainable farming methods that minimize the use of products such as pesticides, fuels and petroleum-based fertilizers.

Policy CO-2.20 Encourage the use of wildlife-friendly Best Management Practices to minimize unintentional killing of wildlife, such as restricting mowing during nesting season for ground-nesting birds or draining of flooded fields before fledging of wetland species.

Policy CO-2.21 Promote wildlife-friendly farming through mechanisms such as farmland trusts, conservation easements and safe harbor-type agreements.

Policy CO-2.22 Prohibit development within a minimum of 100 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams. A larger setback is preferred. The setback will allow for fire and flood protection, a natural riparian corridor (or wetland vegetation), a planned recreational trail where applicable, and vegetated landscape for stormwater to pass through before it enters the water body. Recreational trails and other features established in the setback should be unpaved and located along the outside of the riparian corridors whenever possible to minimize intrusions and maintain the integrity of the riparian habitat. Exceptions to this action include irrigation pumps, roads and bridges, levees, docks, public boat ramps, and similar uses, so long as these uses are sited and operated in a manner that minimizes impacts to aquatic and riparian features. (DEIR MM BIO-1b)

Policy CO-2.23 Support efforts to coordinate the removal of non-native, invasive vegetation within watersheds and replacement with native plants.

Policy CO-2.24 Promote floodplain management techniques that increase the area of naturally inundated floodplains and the frequency of inundated floodplain habitat, restore some natural flooding processes, river meanders, and widen riparian vegetation, where feasible.

Policy CO-2.25 Support efforts to reduce water temperatures in streams for fish via habitat restoration (e.g. increase shading vegetation) and water management (e.g. control of flows) that are compatible with the Integrated Regional Water Management Plan.

Policy CO-2.26 Coordinate with local watershed stewardship groups to identify opportunities for restoring or enhancing watershed, instream, and riparian biodiversity.

Policy CO-2.27 Evaluate the need for additional water to support future riparian enhancement efforts, including the benefits of conjunctive management of groundwater and surface water resources.

Policy CO-2.28 Balance the needs of aquatic and riparian ecosystem enhancement efforts with flood management objectives.

Policy CO-2.29 Promote native perennial grass habitat restoration and controlled fire management in grazing lands to reduce invasive species cover and enhance rangeland forage.

Policy CO-2.30 Protect and enhance streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools in land planning and community design.

Policy CO-2.31 Protect wetland ecosystems by minimizing erosion and pollution from grading, especially during grading and construction projects.

Policy CO-2.32 Support completion of the CDFG Visitors and Interpretive Center near the Vic Fazio Wildlife Area.

Policy CO-2.33 Create partnerships with landowners, non-government organizations, and other public agencies to implement the Yolo County Oak Woodland Conservation and Enhancement Plan.

Policy CO-2.34 Recognize, protect and enhance the habitat value and role of wildlife migration corridors for the Sacramento River, Putah Creek, Willow Slough, the Blue Ridge, the Capay Hills, the Dunnigan Hills and Cache Creek.

Policy CO-2.35 Consider potential effects of climate change on the locations and connections between wildlife migration routes.

Policy CO-2.36 Habitat preserved as a part of any mitigation requirements shall be preserved in perpetuity through deed restrictions, conservation ease-

ment restrictions, or other method to ensure that the habitat remains protected. All habitat mitigation must have a secure, ongoing funding source for operation and maintenance. (DEIR MM BIO-1c)

Policy CO-2.37 Where applicable in riparian areas, ensure that required state and federal permits/approvals are secured prior to development of approved projects. (DEIR MM BIO-1d)

Policy CO-2.38 Avoid adverse impacts to wildlife movement corridors and nursery sites (e.g., nest sites, dens, spawning areas, breeding ponds). Preserve the functional value of movement corridors to ensure that essential habitat areas do not become isolated from one another due to the placement of either temporary or permanent barriers within the corridors. Encourage avoidance of nursery sites (e.g., nest sites, dens, spawning areas, breeding ponds) during periods when the sites are actively used and that nursery sites which are used repeatedly over time are preserved to the greatest feasible extent or fully mitigated if they cannot be avoided. (DEIR MM BIO-4a)

Policy CO-2.39 Require new or retrofitted bridges, and new or expanded roads to incorporate design and construction measures to maintain the functional value of wildlife movement corridors. (DEIR MM BIO-4b)

Policy CO-2.40 Preserve grassland habitat within 2,100 feet of documented California tiger salamander breeding ponds or implement required mitigation (equivalent or more stringent) as imposed by appropriate agencies or through the County HCP/NCCP, to fully mitigate impacts consistent with local, State, and federal requirements. Implementation and funding of mitigation measures for projects that will be developed in phases over time may also be phased, with the applicable mitigation being implemented and funded prior to the final approval of each phase or sub-phase. (DEIR MM BIO-4c)

Policy CO-2.41 Require that impacts to species listed under the State or federal Endangered Species Acts, or species identified as special-status by the resource agencies, be avoided to the greatest feasible extent. If avoidance is not possible, fully mitigate impacts consistent with applicable local, State, and Federal requirements. (DEIR MM BIO-5a)

Policy CO-2.42 Projects that would impact Swainson's hawk foraging habitat shall participate in the Agreement Regarding Mitigation for Impacts to Swainson's Hawk Foraging Habitat in Yolo County entered into by the CDFG and the Yolo County HIP/NCCP Joint Powers Agency, or sat-

isfy other subsequent adopted mitigation requirements consistent with applicable local, State, and federal requirements. (DEIR MM BIO-5b)

Policy CO-2.43 Projects that have the potential to impact California tiger salamander breeding or terrestrial habitat in the Dunnigan Hills area, shall conduct a project-level biological assessment to determine the potential to impact California tiger salamander upland or breeding habitat (if such assessment has not already been done as part of an approved HCP/NCCP). Such an assessment will be required for all projects located within 1.3 miles of a known or potential breeding site. Development activities that would result in isolation of the breeding or upland habitat will be required to mitigate for such impacts. Mitigation shall consist of two components: 1) habitat preservation and enhancement of suitable upland habitat, and 2) preservation and construction of new breeding habitat. CTS upland habitat must be mitigated at a ratio of 3:1 (preserved:impacted), located within 2,100 feet of an occupied habitat, and include at least one suitable breeding pond. Equivalent or more stringent mitigation may be implemented as determined by trustee and responsible agencies. Mitigation must be coordinated with the HCP/NCCP program if adopted. (DEIR MM BIO-5c)

3. Implementation Program

Action CO-A25 Develop a conservation strategy that considers the preservation and protection of intact functioning landscapes, watersheds, and landscape corridors. The approach should be based on the initial identification of high value habitat areas (core areas) and how these areas could be physically linked across the landscape. Coordinate to ensure that the basic landscape-level conservation concepts are incorporated into the HCP/NCCP. (Policy CO-2.1 through 2.4, Policy CO-2.14, Policy CO-2.19 through CO-2.24, Policy CO-2.27, Policy CO-2.29, Policy CO-2.29, Policy CO-2.30, Policy CO-2.32, Policy CO-2.33)
Responsibility: Planning and Public Works Department
Timeframe: 2009/2010

Action CO-A26 Adopt and implement the Habitat Conservation Plan/Natural Communities Conservation Plan developed through the Yolo Natural Heritage Program. Integrate the HCP/NCCP (Natural Heritage Program) into the General Plan as appropriate. Direct habitat mitigation to strategic areas that implement the Yolo Natural Heritage Program and are consistent with the County's conservation strategy. Avoid the conversion

of agricultural areas and focus on lands where wildlife values and farming practices are complementary. (Policy CO-2.1 through CO-2.4, Policy CO-2.14)
Responsibility: Planning and Public Works Department
Timeframe: 2009/2010 and ongoing

Action CO-A27 Protect the habitat value and biological function of oak woodlands, grasslands, riparian areas, and wetland habitats. Avoid activities that remove or degrade these habitats and establish buffers to avoid encroachment into sensitive areas. (Policy CO-2.4, Policy CO-2.14, Policy CO-2.15, Policy CO-2.18, Policy CO-2.19, Policy CO-2.20 through CO-2.24)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A28 Create a program to encourage the planting of new oak seedlings in appropriate locations and the protection of plantings from damage by animals, insects, and people until seedlings are of sufficient size. (Policy CO-2.13, Policy CO-2.16, Policy CO-2.17)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A29 Adopt a heritage tree preservation ordinance. (Policy CO-2.17, Policy CO-2.36)
Responsibility: Parks and Resources Department
Timeframe: 2010/2011

Action CO-A30 Encourage landowners to participate in programs that restore degraded creek resources by:

- Removing exotic species and establishing native riparian vegetation.
- Managing the upland areas of watersheds to control erosion and overgrazing.
- Adding exclusionary fencing to keep livestock out of streams and stream bank areas. (Policy CO-2.12, Policy CO-2.20 through CO-2.24, Policy CO-2.25)

Responsibility: Parks and Resources Department
Timeframe: 2011/2012

Action CO-A31 Establish criteria for the preservation of vernal pools that include the following:

- unusual features;
- habitat quality;
- watershed integrity;
- defensibility and buffering;
- size;
- plant and animal species variety; and
- presence of special status species.

(Policy CO-2.20 through CO-2.24)
Responsibility: Parks and Resources Department
Timeframe: 2013/2014

Action CO-A32 Prepare a complete inventory of identified streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools for use in community plans, area plans and specific plans. (Policy CO-2.25, Policy CO-2.33, Policy CO-2.34)
Responsibility: Parks and Resources Department
Timeframe: 2013/2014

Action CO-A33 Coordinate with State and Federal agencies to rehabilitate and/or improve watersheds for the benefit of salmon and steelhead by encouraging landowner cooperation and participation, and involving agencies and local groups. (Policy CO-2.5 through CO-2.11, Policy CO-2.26, Policy CO-2.28)
Responsibility: Parks and Resources Department
Timeframe: 2014/2015

Action CO-A34 Identify stream sections with important fish and riparian habitat restoration needs. Seek funding and participate in programs to address needs. (Policy CO-2.5 through Policy CO-2.11, Policy CO-2.25, Policy CO-2.26, Policy CO-2.28)
Responsibility: Parks and Resources Department
Timeframe: 2014/2015

Action CO-A35 Integrate biological and habitat conditions and constraints into the County Geographical Information System. (Policy CO-2.1 through CO-2.4)

Responsibility: Information Technology Department
Timeframe: 2010/2011

Action CO-A36 Acquire fee title or easements from willing landowners to promote wildlife migration routes focusing on Cache Creek, Putah Creek, Dunnigan Hills, Willow Slough, the Sacramento River, and the Capay Hills. (Policy CO-2.37, Policy CO-2.38)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

E. Mineral Resources

1. Background Information

The mineral resources section of this chapter provides goals, policies and actions that guide Yolo County in ensuring continued productivity and conservation of the County's geologic reserves.

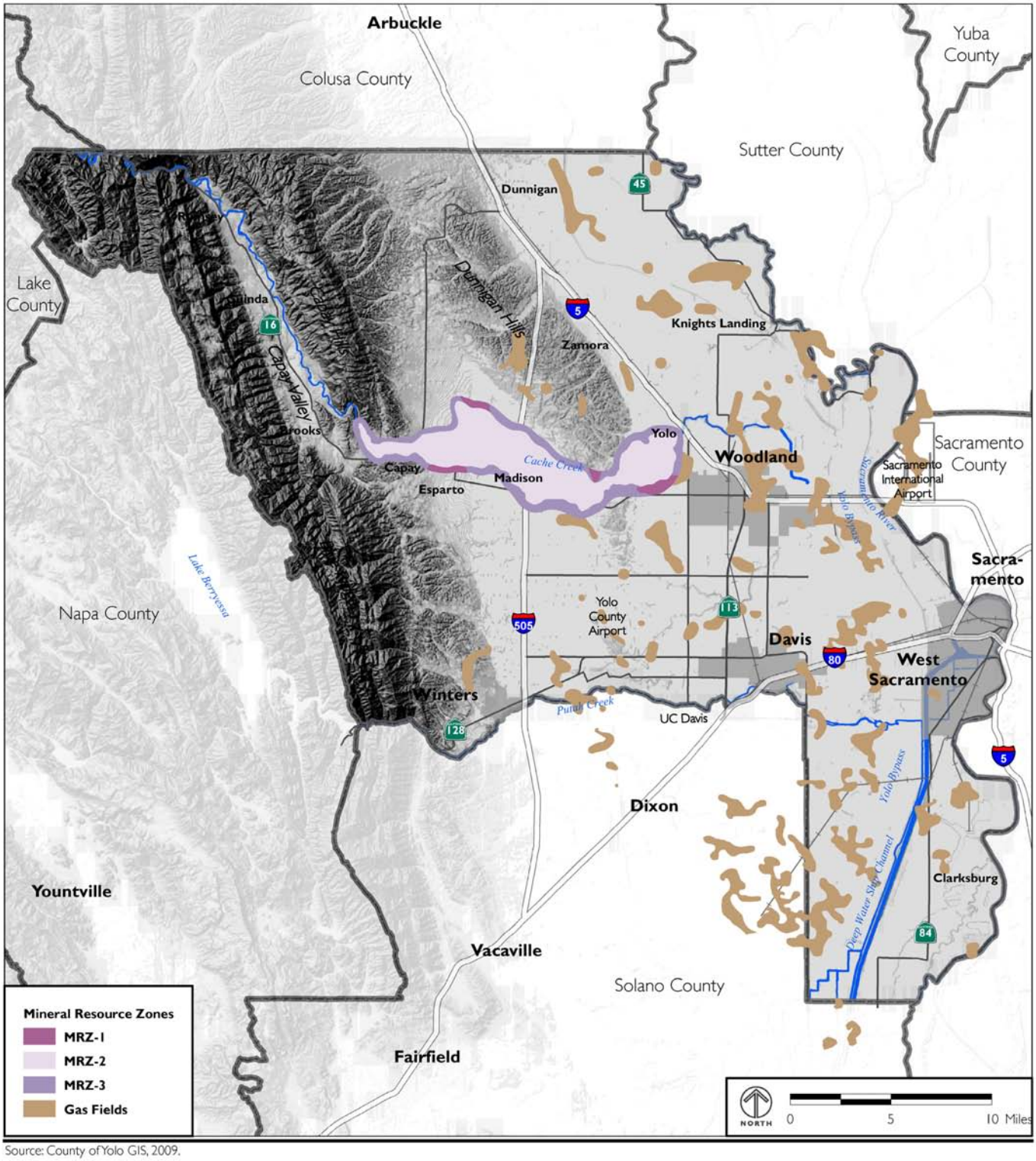
Yolo County also has important soil resources, which can be inferred from the County's high agricultural productivity. Soils are considered to be an agricultural resource and therefore are discussed in the Agriculture Element. Expansive soils and other geologic hazards are covered in the Geologic section of the Health and Safety Element.

Yolo County has two primary mineral resources, mined aggregate and natural gas. These resources are located throughout the County. There are six aggregate mines and 25 natural gas fields currently in operation in Yolo County (see Figure CO-5).

The Surface Mining and Reclamation Act (SMARA) of 1975 regulates mining in California. The purpose of SMARA is to identify the presence and significance of mineral resource deposits and to govern the excavation and reclamation of these areas. SMARA requires comprehensive management plans for operational mining areas. Mineral Resources Zones (MRZs) are used by the State to define areas containing valuable deposits. The California Division of Mines and Geology classifies MRZs according to the guidelines shown in Table CO-5.

There are 1,458 acres of MRZ-1, 18,452 acres of MRZ-2, and 8,220 acres of MRZ-3 in Yolo County. The Cache Creek MRZ-2 area is a significant high-grade aggregate deposit known to contain over 900 million tons of sand and gravel.

FIGURE CO-5 **MINERAL AND GAS RESOURCES**



Source: County of Yolo GIS, 2009.

TABLE CO-5 **SMARA MINERAL RESOURCE ZONE CATEGORIES**

MRZ-1	Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
MRZ-2	Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present. Such areas contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information; or such areas may be inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history.
MRZ-3	Areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRZ-2 category.
MRZ-4	Areas where geologic information does not rule out either the presence or absence of mineral resources. The distinction between the MRZ-1 and MRZ-4 categories is important for land-use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather there is a lack of knowledge regarding mineral occurrence. Further exploration work could well result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2 categories.

Source: Department of Conservation State Mining and Geology Board, Guidelines for Classification and Designation of Mineral Lands.

Mining in Yolo County is regulated by the Off Channel Mining Plan (OCMP), which is a component of the Cache Creek Area Plan (CCAP). The CCAP is incorporated into this General Plan. The focus of the CCAP is groundwater protection, agricultural preservation, restoration of Cache Creek, and limitation and regulation of mining.

The OCMP restricts the location and extent of new mining to lands outside of the riparian corridor, eliminates vested processing plants and facilities at the end of the mining period, creates a fund to address unforeseen environmental concerns, and adds various environmental protections and monitoring requirements to the base requirements of State law established by SMARA. The OCMP is implemented by two related ordinances: one regulating off-channel mining (mining outside of the creek channel) and one regulating reclamation of mined areas.

The CCAP also includes the Cache Creek Resources Management Plan (CCRMP), which includes policies and regulations to stabilize the channel, reduce erosion, protect infrastructure, improve habitat values, maintain flood capacity, and provide recreational opportunities. To support those goals, the County has adopted an In-Channel Maintenance Mining Ordinance. Although commercial mining is prohibited within Lower Cache Creek, carefully regulated and limited maintenance extraction is occasionally necessary to carry out the CCRMP.

Yolo County is one of the 28 counties in California that produce gas and oil. Most of the natural gas fields in Yolo County are located along the Yolo Bypass and the Sacramento River, with more fields located in the unincorporated area of Dunnigan Hills and at the foot of the Capay Hills (see Figure CO-5). Deep on-shore gas wells, reaching a depth of nearly 2 miles, are found near the Clarksburg area. In 2007, Yolo County produced over 3 million Mcf[4] of natural gas and 187 barrels of oil.[5] Further research is needed to determine the extent of present day natural gas reserves in Yolo County, particularly since natural gas has become a larger part of Yolo County's economy and an important tool to reduce vehicle air emissions as a part of the effort to address climate change.

2. Policy Framework

GOAL CO-3	**Mineral Resources. Protect mineral and natural gas resources to allow for their continued use in the economy.**

Policy CO-3.1 Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

Policy CO-3.2 Ensure that mineral extraction and reclamation operations are compatible with land uses both on-site and within the surrounding area, and are performed in a manner that does not adversely affect the environment.

Policy CO-3.3 Encourage the extraction of natural gas where compatible with both on-site and surrounding land uses, and when performed in a manner that does not adversely affect the environment.

Policy CO-3.4 Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable, natural gas policies of the Land Use and Resource Management Plan of the Delta Protection Commission.

Policy CO-3.5 Preserve and protect the County's unique geologic and physical features, which include geologic or soil "type localities", and formations or outcrops of special interest. (DEIR MM GEO-1a)

[4] Mcf is a gas standard equal to 1,000 cubic feet.

[5] California State Department of Conservation Division of Oil, Gas and Geothermal Resources, Online Projection/Injection, accessed July 9, 2008.

3. Implementation Program

Action CO-A37 Designate and zone lands containing identified mineral deposits to protect them from the encroachment of incompatible land uses so that aggregate resources remain available for the future. (Policy CO-3.1)
Responsibility: Planning and Public Works Department
Timeframe: 2009/2010

Action CO-A38 Amend the County Code to allow landowners to apply for redesignation of their property when it can be demonstrated that mineral resources are not present or are not economically feasible. (Policy CO-3.1)
Responsibility: Parks and Resources Department
Timeframe: 2010/2011

Action CO-A39 Encourage the responsible development of aggregate deposits along Cache Creek as significant both to the economy of Yolo County and the region. (Policy CO-3.1)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A40 Encourage recycling of aggregate materials and products. (Policy CO-3.1)
Responsibility: Parks and Resources Department, Planning and Public Works Department
Timeframe: Ongoing

Action CO-A41 Regularly review regulations to ensure that they support an economically viable and competitive local aggregate industry. (Policy CO-3.1)
Responsibility: Parks and Resources Department, County Administrator's Office
Timeframe: Ongoing

Action CO-A42 Implement the Cache Creek Area Plan to ensure the carefully managed use and conservation of sand and gravel resources, riparian habitat, ground and surface water, and recreational opportunities. (Policy CO-3.1)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A43 Monitor updates to the State Mineral Resource classification map and incorporate any needed revisions to the County's zoning and land use map. (Policy CO-3.1)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A44 Coordinate individual surface mining reclamation plans so that the development of an expanded riparian corridor along Cache Creek may be achieved. (Policy CO-3.1)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A45 Prohibit commercial mining in or adjoining Putah Creek. (Policy CO-3.1, Policy CO-3.2)
Responsibility: Parks and Resources Department, Planning and Public Works Department
Timeframe: Ongoing

Action CO-A46 Maintain standards and procedures for regulating surface mining and reclamation operations so that potential hazards and adverse environmental effects are reduced or eliminated. (Policy CO-3.1, Policy CO-3.2)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A47 Ensure that mined areas are reclaimed to a usable condition that is readily adaptable for alternative land uses, such as agriculture, wildlife habitat, recreation, and groundwater management facilities.
Responsibility: Parks and Resources Department (Policy CO-3.1)
Timeframe: Ongoing

Action CO-A48 Regularly update surface mining and reclamation standards to incorporate changes to State requirements, environment conditions, and County priorities. (Policy CO-3.1)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A49 Consider the exploration, drilling, and extraction of natural gas as compatible with agriculture and open space uses. (Policy CO-3.3)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A50 Evaluate any impacts to identified natural gas fields as part of the development review process. (Policy CO-3.3)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A51 Require that abandoned gas wells be sealed in accordance with State of California Division of Oil, Gas and Geothermal Resources regulations and that all drilling or production facilities be removed. Further require that the disturbed surface area be reincorporated into adjoining agricultural operations or revegetated with native vegetation within one year after abandonment. (Policy CO-3.3)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A52 Maintain and implement local and State criteria and development standards for the production, injection, and drilling of natural gas deposits. Ensure that the construction and operation of natural gas storage facilities meet all safety standards of the State of California Division of Oil, Gas and Geothermal Resources. (Policy CO-3.3)
Responsibility: Planning and Public Works Department
Timeframe: 2010/2011

Action CO-A53 The County's unique geologic or physical features, which include geologic or soil "type localities" and formations or outcrops of special interest, shall be researched, inventoried, mapped, and data added to the County GIS database. (DEIR MM GEO-1b) (Policy CO-3.5)
Responsibility: Planning and Public Works Department
Timeframe: 2012/2013

Action CO-A54 Implement the Cache Creek Area Plan (Policy CO-3.2).
Responsibility: Parks and Resources Department
Timeframe: Ongoing.

F. Cultural Resources

1. Background Information

Cultural resources include archaeological, paleontological and historic resources, including cemeteries and burials outside of cemeteries. Yolo County has examples of all of these, including prehistoric Native American sites, fossilized dinosaur remains, and historical man-made artifacts, buildings, sites and landmarks.

Before the establishment of what we now know today as Yolo County, a variety of people occupied the area. The first people to inhabit the Yolo region were two Native American tribes, the Patwin and, to a lesser extent, the Plains Miwok. Euro-American explorers, specifically the Spanish, came to this area as early as 1808 in search of new land on which to establish missions. Hunter/trapper groups also came to the area in search of valuable animal pelts to sell on an international market.

Settlements in the Yolo County region began during the first quarter of the 19th Century. The first American settlers were granted land from the Mexican Cessation of 1848, during which the U.S. bought the region as eleven Mexican land grants. In the beginning of U.S. control, the region was a stable, isolated farming community that was transformed into a booming agricultural area by the California Gold Rush. Fremont was the first town, founded in 1849, along the confluence of the Sacramento and Feather Rivers. It was also the first County seat, after the formal establishment of Yolo County in 1850. The County seat was moved to Washington (Broderick) in 1851, to Cacheville (Yolo) in 1857, and back to Washington in 1860. In 1862, the County seat was permanently moved to the City of Woodland.

The artifacts and legends left by these groups are important cultural resources. The preservation of cultural resources is important because they offer important educational opportunities and they provide the County with a unique sense of identity.

A countywide record search was conducted at the Northwest Information Center (NWIC) of California Historical Resources Information System at Sonoma State University, and additional sources were also used, to generate a list of over 1,200 recorded cultural resources within Yolo County. Of these, 270 are archeological resources. The locations of these resources have been kept confidential.

There are two tribes with registered traditional land in Yolo County, the Cortina Band of Indians and the Rumsey Band of Wintun Indians. The Cortina band is not known to currently own property nor be active within the County. The Rumsey Tribe is very active in the County. They are a significant landowner and employer as the operators of the Cache Creek Casino Resort in Brooks.

The Rumsey Band of Wintun Indians is a recognized sovereign nation. As such, the Department of the Interior, Bureau of Indian Affairs, holds approximately 267 acres in trust for the Rumsey Tribe (the Tribe). One site contains houses for the tribal members, a community center, and the Yocha-De-He Preparatory School. The other site is home to the Cache Creek Casino Resort. As sovereign lands, these areas are not a part of this General Plan. The Tribe also owns several thousand acres in and around the trust lands. These properties are not held in trust and are included within this General Plan.

In 1985, the Tribe began operation of a bingo hall on trust lands in the Capay Valley, which was expanded to include card games in 1993. Three years later, there was a second expansion of the bingo hall, including several restaurants. In 1999, following approval of the State Gaming Compact, the casino added slot machines and table games to its existing facility. A third expansion began in 2002 to create the Cache Creek Casino Resort, adding additional gaming space, restaurants, event center, club, 200-room hotel, spa, and a championship golf course. Today, the Resort is the second largest employer in Yolo County (after UC Davis) with more than 2,400 employees.

In 2002, the County and the Tribe approved an Intergovernmental Agreement to: (1) establish a mechanism for mitigation of the off-Reservation impacts expected to result from the Casino Resort expansion; (2) provide financial resources to help fund those mitigation measures; and (3) strengthen the government-to-government relationship between the County and the Tribe. The Agreement committed the Tribe to a wide range of measures to reduce the environmental impact of the expansion, as well as payment of over five million annually to the County to reimburse for the costs of the impacts. The County committed to developing a mitigation program to address impacts that occurred outside of trust lands, paid for through the funds provided by the Tribe, as recommended by a County Advisory Committee for Tribal Matters. Both parties agreed to hold regularly scheduled 2x2 meetings, open to the public.

In April, 2008, the Rumsey Tribe released a Draft Tribal Environmental Impact Report (TEIR) for a new expansion of the Resort. The proposal includes 467 new hotel rooms and 27 casitas, four additional restaurants, an event/conference center, retail shops, an expansion of the spa, additional gaming floor and office space, three new swimming pools, an additional parking garage, and related support facilities and utilities. The Final TEIR has not yet been released for this project.

Yolo County has conducted consultation with Native American tribes to aid in the protection of traditional and cultural places, or sacred sites, as required by Senate Bill 18 (SB 18). For the purposes of this element, the term “sacred site” refers to any specific, discrete, narrowly delineated location that is identified by a Native American tribe, or Native American individual determined to be an appropriate authoritative representative of a Native American religion, as sacred by virtue of its established religious significance to, or ceremonial use by, a Native American religion. In coordination with the two regional tribes, no sacred sites have been disclosed to the County.

Section 7050.5 of the California Health and Safety Code states that, when human remains are discovered, no further site disturbance shall occur until the County Coroner has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations

concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and the remains are recognized to be those of a Native American, the coroner shall contact the Native American Heritage Commission within 24 hours.

In addition to the archeological listings identified above, Yolo County maintains its own list of local historical landmarks (see Table CO-6). There are also county listings on the National Register of Historic Places, the list of California State Historical Landmarks, and the list of California Points of Historical Interest (see Table CO-7).

Individuals, various community groups and local organizations throughout Yolo County preserve historical resources. These groups include the County Planning Commission/Historic Preservation Commission and various volunteer historical societies. The Planning Commission serves as the Historic Preservation Commission which is tasked with establishing criteria, guidelines and standards to pursue the goals outlined in the County's Historic Preservation Ordinance. The Commission is responsible for maintaining an inventory of all historical landmarks and districts within Yolo County and recommending future historic designations to the Board of Supervisors. The Planning Commission decides permits for demolition and for alterations to historic structures.

There are a number of repositories of historical artifacts and information in Yolo County, including the Yolo County Historical Museum, the Yolo County Archives and Record Center and the Hattie Weber Museum. The Yolo County Historical Museum is located in Woodland. The museum provides tours of the architecturally historic building and displays furnishings and artifacts from Yolo County's past, specifically between 1850 and 1930, and includes outbuildings that feature artifacts associated with the agricultural industry and farming lifestyle.

The Yolo County Archives and Record Center maintains a comprehensive archive of historical materials dating back from the County's beginnings in 1850. A broad range of materials are stored at the Archive and Record Center, including County documents, original tax records, old newspapers, probates, wills, civil and criminal cases, original maps of Mexican land grants, personal scrapbooks, video reels and a complete set of meeting notes from every meeting of the Yolo County Board of Supervisors.

TABLE CO-6 **COUNTY-RECOGNIZED HISTORICAL RESOURCES IN UNINCORPORATED YOLO COUNTY**

Common Name	Address
Yolo Library	37750 Sacramento Street, Yolo, CA
James Borach House	419 Sacramento Street, Yolo, CA 95697
Yolo Town Hall	37735 Sacramento Street, Yolo, CA
Joseph T. Cooper House	CR 16a (between CR 98a and CR 98e) Box 545, Yolo, CA
Samuel Carpenter Cottage	CR 87e W of the end, Winters, CA95694
William L. Seawright House	SH 128 (North Side E Of CR 87d) Winters, CA95694
Adolph Oeste House	SE Corner Patwin Rd/ Russell Blvd, Davis, CA 95616
French Residence	37858 Russell Blvd, Davis, CA 95616
Hext Brothers Farmhouse	Box 2080, Rd. 97D and State Route 128, Davis, CA 95616
Gotfried Schmiser House	CR 31 and CR 96 Box 2560 Davis, CA 95616
"Yolanda"	CR 99, Box 70, at NW Corner Cr 25a, Woodland, CA 95695
William Marcus Jackson House	20123 East Street, Woodland, CA 95695
Frank N. Bullard House	CR 99, Box 150 (N of CR 27) Woodland, CA
Lorenz Heinz Ranch	38331-35 CR 29, Davis, CA
B. F. Conaway Ranch House	CR 103, Box 158 (N of CR 27), Woodland, CA 95695
Nelson Bump House (Aka "Lydia" House)	South River Road next to County Line, Clarksburg, CA
Hamilton S. Connor House	CR 144, Box 283, Clarksburg, CA
Holland Land Company Headquarters	Netherlands Road at Central Ave., Clarksburg, CA
Lawlor & Cosby General Merchandise	South River Road (corner of Netherlands Ave.) Clarksburg, CA
Husick Hardware	South River Road (S of Netherlands Ave) Clarksburg, CA
St. Joseph's Church And Rectory	South River Road, Box 52, Clarksburg, CA
Brown/Munk House	54080 South River Road, Clarksburg, CA
Gordon Cemetery	CR 20 E of CR 92C, Yolo, CA 95697
Robert Baur House	CR 23, Box 516 East of CR 86a Madison, CA 95653
Esparto Railroad Station	16770 CR 87, Esparto, CA
Fred Wyatt House	924 and 928 Grafton, Esparto, CA 95627
Clarence Johnson Home & Shop	26621 Capay Street, Esparto, CA
Ioof Building, Esparto	16651-63 Yolo Avenue Esparto, CA
Henry Mefford House	County Road 25 near County Road 86A Madison, CA 95653
Haines Store	1110 Main Street, Madison, CA 95653

TABLE CO-6 **COUNTY-RECOGNIZED HISTORICAL RESOURCES IN UNINCORPORATED YOLO COUNTY** (CONTINUED)

Common Name	Address
Union Church Of Dunnigan	3615 County Road 89A, Dunnigan, CA 95937
St. Agnes Church	SE Corner Main and Second Streets, Zamora, CA 95698
John Snowball Mansion	613 Front Street, Knights Landing, CA
Silas/ Edson House	509 3rd Street, Knights Landing, CA
Leithold's Drug Store, Knights Landing	223 Mill Street. Knights Landing, CA
First National & Home Savings Bank	225 Mill Street. Knights Landing, CA
Masonic Lodge, Knights Landing	414 3rd Street., Knights Landing, CA
Hanney/La Due House	602 Mill Street, Knights Landing, CA
Guinda Corner Store	Sate Route 16 and County Road 53, SW corner, Guinda, CA
Rumsey Town Hall	State Route 16 and Laurel Street, NE corner, Rumsey, CA
James Carey Montgomery House	Rt, 1, Box 1140, Davis, CA 95616

TABLE CO-7 **NATIONALLY- AND STATE-RECOGNIZED HISTORICAL RESOURCES IN UNINCORPORATED YOLO COUNTY**

Place Type	Location
National Register of Historic Places	
Yolo Branch Library	200 Sacramento Street, Yolo
Union Church of Dunnigan	3615 County Road 89A, Dunnigan
Rumsey Town Hall	State Route 16 at Manzanita Street, Rumsey
Nelson Ranch	41070 County Road 18C, Woodland
William B Gibson House	512 Gibson Road, Woodland
Canon School	0.5 mi. N of Brooks, Brooks
California State Historical Landmarks	
None in Unincorporated Yolo County	
California State Points of Historical Interest	
Russell Boulevard	Between Highway 113 and Road 98, Davis
Mary's Chapel	Intersection of County Roads 15 and 98
St. Agnes Church	County Road 98, Zamora
Capay School	State Route 16, Capay
Leonidas Taylor Monument	West bank of the Sacramento River, northwest of Sacramento
Yolo County Courthouse	725 Court Street, Woodland
Yolo County Historical Museum	512 Gibson Road, Woodland

Source: National Register of Historic Places, the list of California State Historical Landmarks, and the list of California Points of Historical Interest, 2008.

2. Policy Framework

GOAL CO-4	**Cultural Resources. Preserve and protect cultural resources within the County.**

Policy CO-4.1 Identify and safeguard important cultural resources.

Policy CO-4.2 Implement the provisions of the State Historical Building Code and Uniform Code for Building Conservation to balance the requirements of the Americans with Disabilities Act with preserving the architectural integrity of historic buildings and structures.

Policy CO-4.3 Encourage owners of historic resources to preserve and rehabilitate their properties.

Policy CO-4.4 Encourage historic resources to remain in their original use whenever possible. The adaptive use of historic resources is preferred when the original use can no longer be sustained. Older residences may be converted to office/retail use in commercial areas and to tourist use in agricultural areas, so long as their historical authenticity is maintained or enhanced.

Policy CO-4.5 Increase knowledge of historic preservation through public education and outreach programs.

Policy CO-4.6 Support historically oriented visitor programs at the local and regional level through the Yolo County Visitor's Bureau and similar efforts.

Policy CO-4.7 Encourage the identification of historic resources through the integrated use of plaques and markers.

Policy CO-4.8 Explore opportunities for promoting heritage tourism, including cooperation with regional and State marketing efforts.

Policy CO-4.9 Promote the use of historic structures as museums, educational facilities, or other visitor-serving uses.

Policy CO-4.10 Encourage voluntary landowner efforts to protect cultural resources consistent with State law.

Policy CO-4.11 Honor and respect local tribal heritage.

Policy CO-4.12 Work with culturally affiliated tribes to identify and appropriately address cultural resources and tribal sacred sites through the development review process.

Policy CO-4.13 Avoid or mitigate to the maximum extent feasible the impacts of development on Native American archaeological and cultural resources.

Policy CO-4.14 Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable cultural resources policies of the Land Use and Resource Management Plan of the Delta Protection Commission.

3. Implementation Program

Action CO-A55 Update the Historic Preservation Ordinance on a regular basis to be consistent with applicable federal, State and local Historic Preservation requirements. (Policy CO-4. Policy CO-4.2)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A56 Update the historic resources surveys (including the Historic Features Inventory), as needed, to reflect changes due to the passage of time, loss of existing historic resources, and the availability of new or reinterpreted information. (Policy CO-4.1)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A57 Identify and establish historic districts, where appropriate, to better preserve individual historical resources and their context. (Policy CO-4.1, Policy CO-4.4)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A58 Establish an inventory and map of known significant historic and cultural resources, as well as sensitive areas where such resources are likely to occur. Work with the Rumsey and Cortina Tribes to identify sacred sites and develop a cultural sensitivity map. This information is protected as confidential under State law. (Policy CO-4.1)
Responsibility: Planning and Public Works Department
Timeframe: 2011/2012

Action CO-A59 Conduct historic resource surveys as a part of community and specific plan preparation to document and identify those resources that meet the criteria for listing at the local level, on the California Register of Historical Resources, and on the National Register of Historic Places. Policy CO-4.1)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A60 Review and monitor demolition permits, grading permits, building permits, and other approval procedures to reinforce preservation goals. (Policy CO-4.1, Policy CO-4.2, Policy CO-4.3)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A61 Establish design guidelines for historic resources based on established federal and State standards and guidelines to address the adaptive reuse and modification of historic resources. (Policy CO-4.1, Policy CO-4.2, Policy CO-4.4)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A62 Preserve historical records and make them accessible to the public by maintaining the Yolo County Archives and Record Center. (Policy CO-4.1, Policy CO-4.5)

- Provide additional space for accommodation of the growing Archives collections
- Ensure that the collection is housed in an appropriate archival manner

Responsibility: County Library, General Services Department
Timeframe: Ongoing

Action CO-A63 Require cultural resources inventories of all new development projects in areas where a preliminary site survey indicates a medium or high potential for archaeological, historical, or paleontological resources. In addition, require a mitigation plan to protect the resource before the issuance of permits. Mitigation may include:

- Having a qualified archaeologist or paleontologist present during initial grading or trenching;
- Redesign of the project to avoid historic or paleontological resources;

- Capping the site with a layer of fill; and/or
- Excavation and removal of the historical or paleontological resources and curation in an appropriate facility under the direction of a qualified professional. (Policy CO-4.1, Policy CO-4.13)

Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A64 Require that discretionary projects which involve earth disturbing activities on previously undisturbed soils in an area determined to be archaeologically sensitive perform the following:

- Enter into a cultural resources treatment agreement with the culturally affiliated tribe.
- Retain a qualified archaeologist to evaluate the site if cultural resources are discovered during the project construction. The archaeologist will have the authority to stop and redirect grading activities, in consultation with the culturally affiliated tribe and their designated monitors, to evaluate the significance of any archaeological resources discovered on the property.
- Consult with the culturally-affiliated tribe to determine the extent of impacts to archaeological resources and to create appropriate mitigation to address any impacts.
- Arrange for the monitoring of earth disturbing activities by members of the culturally affiliated tribe, including all archaeological surveys, testing, and studies, to be compensated by the developer.
- Implement the archaeologist's recommendations, subject to County approval.
- Agree to relinquish ownership of all artifacts that are found on the project area to the culturally affiliated tribe for proper treatment and disposition. (Policy CO-4.1, Policy CO-4.13)

Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A65 Require that when cultural resources (including non-tribal archeological and paleontological artifacts, as well as human remains) are encountered during site preparation or construction, all work within the vicinity of the discovery is immediately halted and the area protected from further disturbance. The project applicant shall immediately notify the County Coroner and the Planning and Public Works Depart-

ment. Where human remains are determined to be Native American, the project applicant shall consult with the Native American Heritage Commission (NAHC) to determine the person most likely descended from the deceased. The applicant shall confer with the descendant to determine appropriate treatment for the human remains, consistent with State law. (Policy CO-4.1, Policy CO-4.11, Policy CO-4.12, Policy CO-4.13)
Responsibility: Planning and Public Works Department, Sheriff-Coroner's Office
Timeframe: Ongoing

Action CO-A66 Prohibit the removal of cultural resources from the project site except by a qualified consultant and after the County planning staff have been notified. Prehistoric resources include chert or obsidian flakes, projectile points, mortars, pestles, dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic resources include stone or adobe foundations and walls, structures and features with square nails, and refuse deposits often in old wells and privies. Policy CO-4.1, Policy CO-4.11)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A67 Consult with culturally affiliated tribes prior to amending the General Plan and adopting or amending specific plans, consistent with State law. (Policy CO-4.12, Policy CO-4.13)
Responsibility: County Administrator's Office, Planning and Public Works Department
Timeframe: Ongoing

Action CO-A68 Confer with culturally affiliated tribes prior to designating open space that includes any identified cultural places and develop a treatment and management plan for their preservation. (Policy CO-4.12, Policy CO-4.13)
Responsibility: County Administrator's Office, Planning and Public Works Department
Timeframe: Ongoing

Action CO-A69 Refer all development proposals that may adversely affect cultural resources to the Northwest Information Center (NWIC) at Sonoma State University for review and comments. The NWIC will identify the presence or absence of known cultural resources and/or previously performed studies in or near a given project area and will offer rec-

ommendations regarding the need for additional studies, where necessary. If the NWIC recommends further study, the project applicant shall contract with a qualified professional to conduct the study and make recommendations designed to avoid or minimize adverse impacts on cultural or historic resources and indicate whether further investigation is needed. All studies shall be completed and submitted to the County prior to the completion of any environmental document for the project. (Policy CO-4.1, Policy CO-4.11)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A70 Refer draft environmental documents, including any studies and recommended mitigation measures, to the appropriate culturally-affiliated tribes for review and comment as part of the public review process. (Policy CO-4.1, Policy CO-4.11, Policy CO-4.12)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

G. Water Resources

There are many significant water resources in Yolo County. Major rivers, creeks, streams, drainages and sloughs running through the county irrigate agricultural fields, control floods, transport water supplies to users throughout the county and provide wildlife habitat. This section discusses the major sources of surface and groundwater supply in the county, issues related to water quality, and the important planning and regulatory efforts that are concerned with these resources. Other water-related issues, including those related to water distributions systems, water treatment, and water-related infrastructure, are addressed in the Infrastructure and Services Element of this General Plan.

1. Background Information

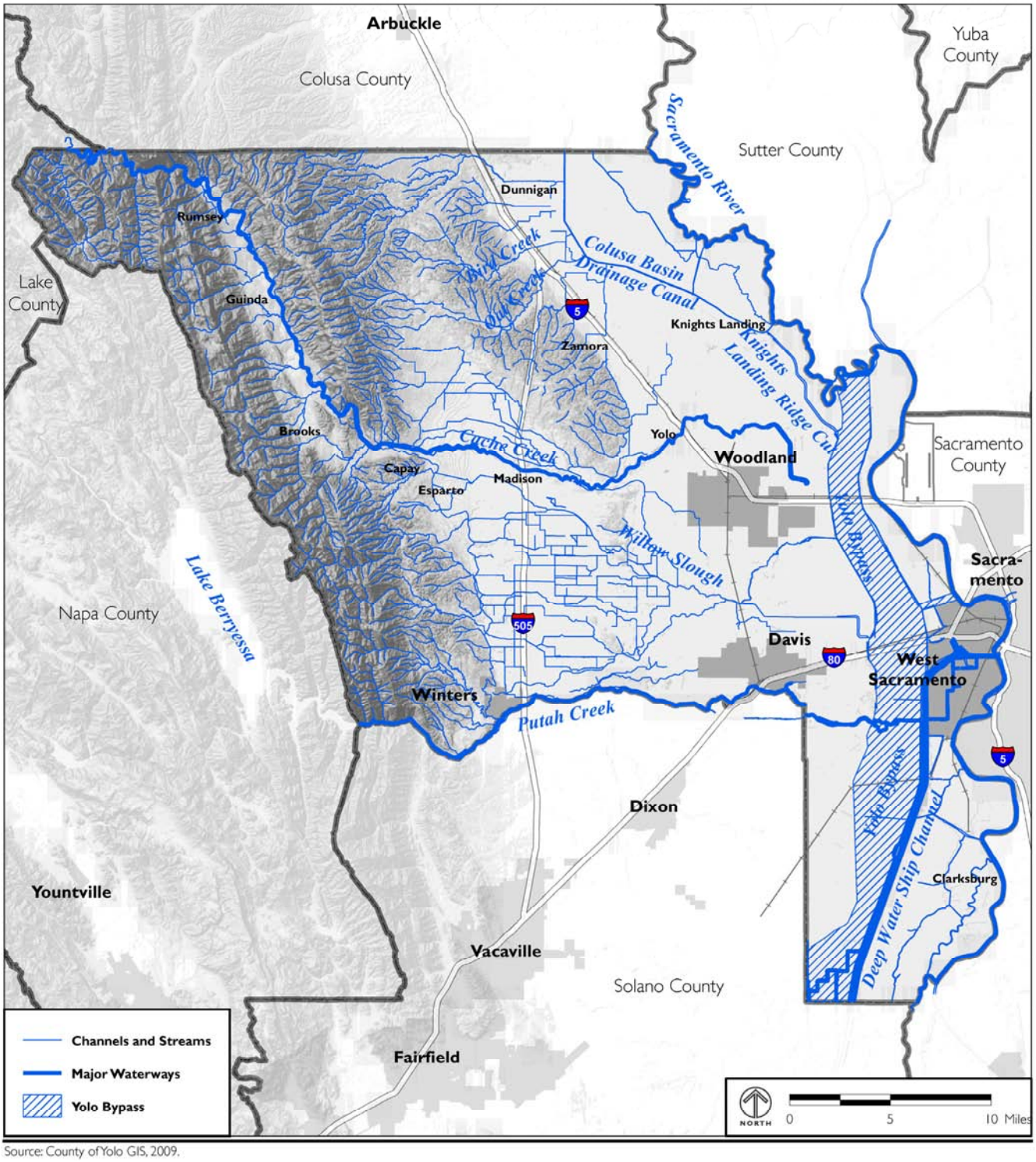
a. Major Water Sources

Surface Water

The major watersheds and surface water features in Yolo County include Cache Creek, Putah Creek, the Sacramento River, and the Yolo Bypass. These waterway areas are discussed below and are shown in Figure CO-6.

- **Cache Creek** is the outfall of Clear Lake, which is located in Lake County 50 miles northwest of Yolo County. The north fork of Cache Creek includes the 300,000-acre-foot Indian Valley Reservoir, also located in Lake County.

FIGURE CO-6 **MAJOR WATERWAYS AND SURFACE WATERS**



Source: County of Yolo GIS, 2009.

Upper Cache Creek, in the Rumsey Canyon *Source: Yolo Natural Heritage Program*

- **Putah Creek** begins in Lake County, flows through Napa County and the Lake Berryessa Reservoir into southern Yolo County, and eventually into the Yolo Bypass.
- **Sacramento River,** a 447-mile-long river, begins in Shasta County and passes west of the City of Sacramento. Its tributaries include the Pit, Feather, McCloud and American rivers.
- The **Yolo Bypass** is a 41-mile-long, several-mile-wide levied floodplain that carries flood flows from the Sacramento River to the Sacramento Delta. Its tributaries include Cache Creek, Putah Creek, Willow Slough and the Knights Landing Ridge Cut.

In addition to these natural sources, an extensive network of sloughs, irrigation canals and drainage ditches are located within the county. The major slough and canal facilities include:

- **Tehama-Colusa Canal** – transports water south from Tehama County into Yolo County, terminating near Dunnigan.

- **Colusa Basin Drain** – begins at Glenn County, carrying drainage water from the western side of the valley, to the Sacramento River at Knight's Landing on through the Ridge Cut to the Yolo Bypass.
- **Willow Slough** – minor watercourse that drains much of the area between Cache and Putah Creeks.
- **Winters Canal** – primary source of irrigation for most of the County between Cache and Putah Creeks.
- **West Adams Canal** – carries water from Cache Creek north to Hungry Hollow and Yolo-Zamora area.
- **Elk Slough** – drains much of the area around Clarksburg.

Yolo County has no natural lakes. However, as a result of aggregate mining and reclamation activity along Cache Creek, several small reclaimed lakes will be created and eventually become a part of the future planned Cache Creek Parkway. The Cache Creek Area Plan contains policies and regulations addressing the management of these future resources.

Water Quality

Dozens of organizations and agencies perform regular water quality monitoring in the county. Chemicals such as boron, diazinon, mercury and unknown toxics are pollutants found in Yolo County waterways. Studies on the physical and chemical characteristics of the Sacramento River and its tributaries within Yolo County have found high concentrations of nutrients and contaminants, particularly after major storms.

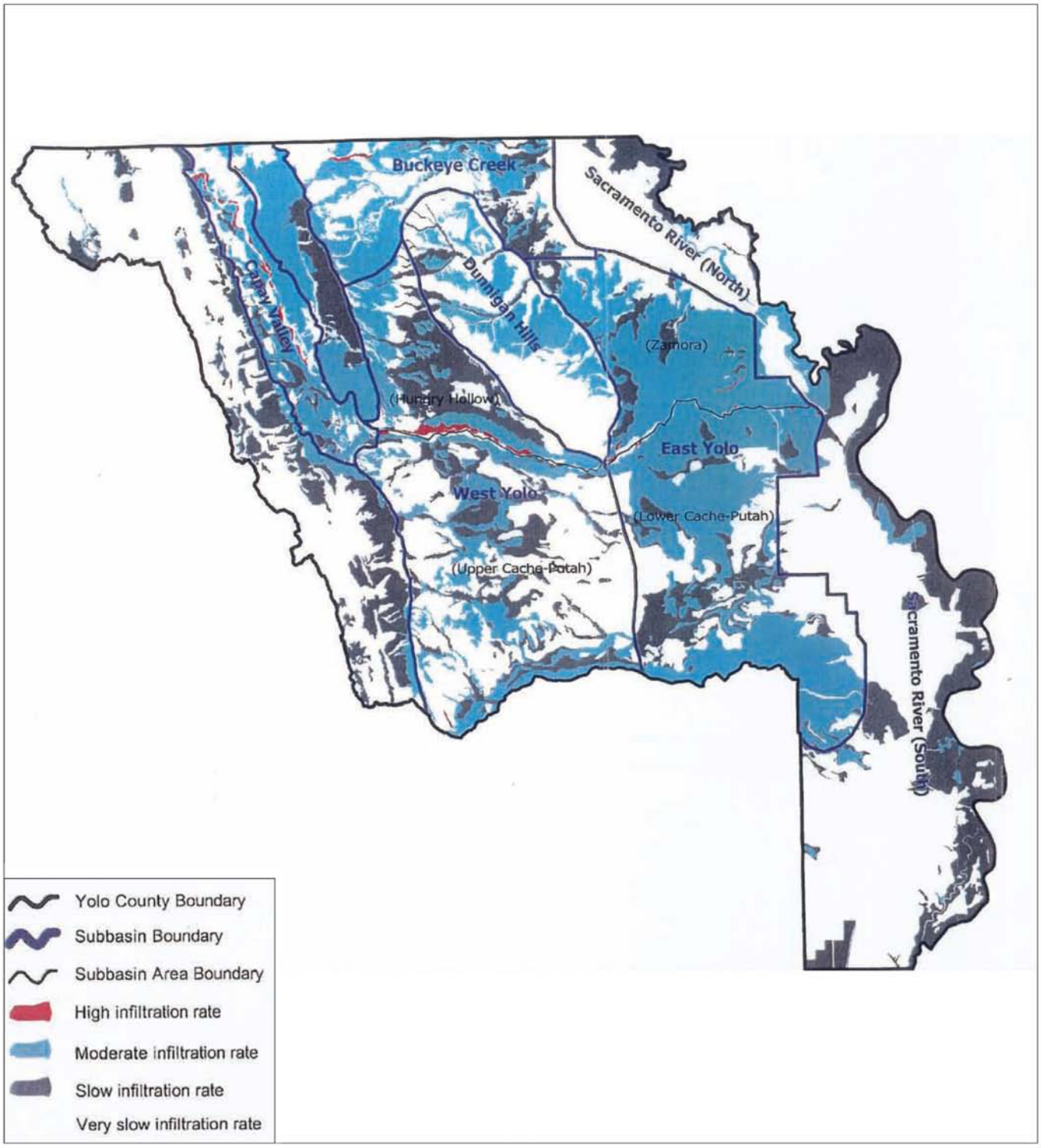
The Central Valley Regional Water Quality Control Board (CVRWQCB) has adopted Total Maximum Daily Load (TMDL) for mercury in Cache Creek. A separate TMDL is currently under review for mercury in the Sacramento-San Joaquin Delta. The CVRWQCB has also adopted TMDL for diazinon in the Sacramento River and the Delta.

Groundwater

Yolo County has an extensive system of shallow and deep aquifers on which the county depends for domestic and agricultural water supply. Wells in Yolo County are increasingly tapping deeper aquifers due to issues of subsidence and contamination, which are discussed below.

The County has six groundwater sub-basins, which are shown in Figure CO-7. The East Yolo sub-basin, which covers the eastern portion of the county from south of Dunnigan to Davis, provides the greatest supply of residential water extraction. The other five sub-

FIGURE CO-7 **GROUNDWATER BASINS AND INFILTRATION RATES**



Source: Soil Survey Geographic (SSURGO) Database, U.S. Department of Agriculture, Natural Resource Conservation Service.

basins are the Capay Valley, Buckeye Creek, Dunnigan Hills, West Yolo and Sacramento River sub-basins.

The primary source of groundwater recharge is applied irrigation water and direct rainfall. Recharge of aquifers typically occurs along the streambeds of creeks and canals. Recharge occurs naturally, and also through reservoir releases, such as the release of stored water from the Indian Valley Reservoir into Cache Creek during low flows periods. The Indian Valley Reservoir was built and is managed by the Yolo County Flood Control and Water Conservation District so that farmers could use surface water rather than pump groundwater, to reduce overdraft and subsidence.

Several issues face the county in its use of groundwater. Subsidence can cause permanent loss of aquifer capacity when upper soil layers collapse. Subsidence can also compromise wells, irrigation canals, levees and highways. The Yolo Subsidence Monitoring Project (YSMP) is a collaborative effort between the County, the Cities of Woodland and Davis, UC Davis, the U.S. Bureau of Reclamation, the Army Corps of Engineers, and the California Department of Water Resources. The YSMP includes 47 stations that are monitored to determine where subsidence may be occurring and to what extent. As a result of their work, it appears that land subsidence due to overdraft of the shallow aquifer is a significant concern in the East Yolo sub-basin and, to a lesser degree, throughout other parts of the county. The greatest amount of subsidence, approximately four feet over several decades, has occurred east of Zamora, where irrigation needs are supplied exclusively from groundwater because no surface water sources exist.

In addition to subsidence, contamination of groundwater is also an issue in parts of the County. Coliform, nitrates and dissolved salts are primary concerns. Coliform and nitrates are a consequence of failing, underperforming and/or over-concentration of septic systems, such as in Dunnigan, North Davis Meadows, Madison and rural areas around the County. Nitrate contamination is also associated with over-fertilization of agricultural crops, golf courses, parks, and landscaping, and may be associated with cemeteries, feed lots, and agricultural disposal areas. Dissolved salts are produced from evaporation of irrigation water and evapotranspiration of soil moisture and shallow groundwater. These salts can accumulate, resulting in groundwater contamination. Arsenic and other soil minerals are naturally occurring contaminants that leach into streams, such as along Cache Creek and particularly in the Wild Wings County Service Area. Although groundwater supplies in the county generally meet current drinking water standards, continued groundwater contamination is already a problem for some municipal, residential, and agricultural uses.

Figure CO-7 also identifies all rivers, creeks, streams, and other areas where groundwater recharge occurs, based on degree of infiltration.

Reclaimed Water

Reclaimed water from wastewater treatment facilities is used in Yolo County. Cache Creek Casino Resort and the Wild Wings County Service Area use treated tertiary wastewater for golf course irrigation. Other uses of reclaimed water include irrigation of agricultural fields and landscaping. The State regulates specific uses of reclaimed water. The level of prior treatment determines how the reclaimed water can be used. Tertiary treatment is generally required for human contact, as on golf courses and ornamental landscaping, or human consumption as on food crops. Secondary treatment may be adequate for other uses, such as fodder crops.[6]

The Regional Water Quality Control Board (RWQCB) also restricts discharge of reclaimed water to land. Where land discharge is allowed, it is regulated in order to protect groundwater resources. Nitrate removal is required in many cases where the reclaimed water will percolate to groundwater basins that are used for domestic water supply, although secondary treatment may be sufficient depending on soil conditions.[7]

b. Water Planning and Regulation

To ensure high quality and adequate supply, water resources in Yolo County are regulated by federal and State laws, as well as local water management plans. In 2007, the County adopted the Integrated Regional Water Management Plan (IRWMP). The IRWMP was developed by the Water Resources Association of Yolo County (WRA), in conjunction with the California Department of Water Resources (DWR). The IRWMP serves as an update to the County's 1992 water management plan, addressing major topics such as water supply, water quality, flood management, enhancement of aquatic and riparian habitat, and improvement of the County's recreational opportunities.

Besides the IRWMP, the County implements a number of planning documents to protect its water resources. The Yolo County Natural Heritage Program, previously mentioned in the Biological Resources section of this element, also serves as a water management plan with respect to wetlands and riparian corridors, in compliance with the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA). The Yolo County NHP does not, however, address aquatic species or their habitat. This plan is currently being developed by the Yolo county Habitat Joint Powers Authority and is expected to be published in 2009.

The Cache Creek Area Plan is comprised of the Off Channel Mining Plan and the Cache Creek Resources Management Plan, which together regulate and protect the area and manage the Creek as an integrated system. It protects water supply and aquatic habitat from contamination associated with mining. This plan, last updated in 2002, focuses on

[6] California Code of Regulations, Title 22, Division 4, Chapter 3, Article 3.
[7] California Code of Regulations, Title 22, Division 4, Chapter 3, Article 3.

regulating off channel aggregate mining, improving channel stability, reducing erosion, maintaining flood capacity and restoring habitats.

The Yolo County Stormwater Management Program (SWMP) was developed by the Yolo County Planning and Public Works Department in conjunction with other Yolo County agencies. The SWMP analyzes various activities in urbanized areas that are sources of pollutants in stormwater and identifies Best Management Practices to reduce their levels. The SWMP responds to the issues and regulations of the 1987 Clean Water Act.

c. Domestic Water

Most of Yolo County's domestic water supplies originate from groundwater. West Sacramento is the only urban area that currently relies on surface water rather than groundwater as its primary source of water supply. The cities of Woodland and Davis, as well as UC Davis, are working on a joint proposal to obtain municipal water from surface supplies in the Sacramento River. Although the most common problem associated with groundwater in municipal supplies is the hardness (mineralization), contamination of the aquifer with coliform, nitrates, naturally occurring arsenic, and fuel from leaking underground storage tanks can be a serious issue in some parts of the County.

Table CO-8 shows current conditions with regards to domestic water systems in the unincorporated areas of the county. In addition, the Rio Villa public housing in Winters and the Davis Migrant Center both have private water systems. The rest of the county relies on private on-site wells. Yolo County has also has six major water districts that focus primarily on the delivery of irrigation water for agricultural purposes, although there has been discussion about one or more of the districts providing municipal water. The water districts are: Dunnigan Water District, Yolo-Zamora Water District, Yolo County Flood Control and Water Conservation District, North Delta Water Agency, Colusa Dain Mutual Water Company, Colusa Drain Water Users Association, Reclamation Districts 108, 730, 737, 2035 and 2068, and Colusa County Water District. Water agency boundaries are shown in Figure CO-8.

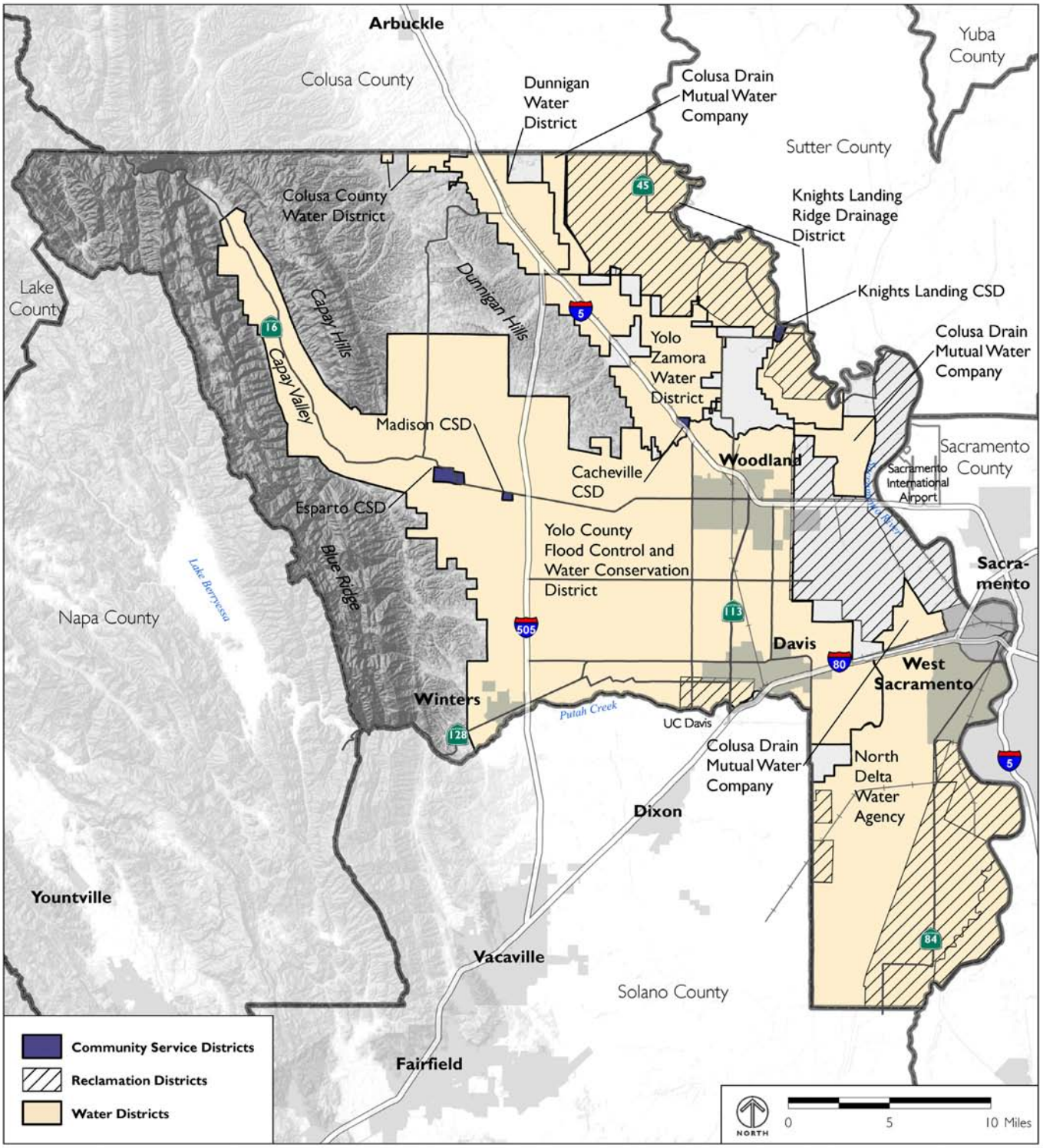
County regulations, contained in Title 7, Chapter 1, Section 7-1.04 of the Yolo County Code, require fire sprinkler systems in all new residential development and new non-residential buildings over 5,000 square feet or over three stories in height. Because most existing water systems in Yolo County do not operate at pressures sufficient to maintain a fire sprinkler system for commercial structures, every unincorporated community in the county needs to upgrade its water system to meet these requirements.

Other water supply and quality issues that Yolo County must address include increasingly stringent water quality regulations, availability of adequate water supplies during

TABLE CO-8 WATER SYSTEM CONDITIONS BY UNINCORPORATED AREA

Unincorporated Area(s)	Water System Conditions
Clarksburg	No community water system. Individual wells.
Dunnigan	No community water system. Private water systems serve the two mobile home parks. The Dunnigan Water District provides supplement non-potable fire flow for some customers. Nitrates have been a problem in the past with some wells in the community.
Esparto	Community water system based on groundwater, which is managed by a Community Services District. Water pressure has been a recent concern, especially regarding commercial fire flow.
Knights Landing	Community water system based on groundwater, which is managed by a Community Services District. Water pressure has been a recent concern, especially regarding commercial fire flow.
Madison	Community water system based on groundwater, which is managed by a Community Service District. New well recently installed to address previous problems with coliform and nitrate contamination. Water pressure has been a recent concern, especially regarding commercial fire flow.
Monument Hills	Wild Wings development has a community water system based on groundwater, which is managed by a County Service Area. Arsenic is a potential problem. The remainder of the Monument Hills area relies on individual wells.
West Kentucky	Private water system based on groundwater. System improvements needed.
Willowbank, El Macero, North Davis Meadows, Royal Oaks	Willowbank and El Macero have separate water systems managed by County Service Areas, which have been integrated with the City of Davis community water system. Royal Oaks is also served by the City of Davis. North Davis Meadows is also managed by a County Service Area, but is separate from the city's water system. Nitrate have been a problem in North Davis Meadows.
Yolo	Community water system based on groundwater, which is managed by a Community Service District. Water pressure has been a recent concern, especially regarding commercial fire flow.
Zamora, Binning Farms, Patwin Road, West Plainfield, Willow Oak	No community water system. Individual wells.

FIGURE CO-8 **WATER AGENCY BOUNDARIES**



Source: Yolo County LAFCO, 2008; Yolo County GIS, 2009.

severe drought conditions, subsidence problems as a result of groundwater overdraft, rising costs of providing water services, and increasingly complex and expensive regulatory compliance. Many of these issues have been addressed through the Integrated Regional Water Management Plan (IWRMP) prepared by the Water Resources Association, a multi-agency effort to coordinate water policies among the various jurisdictions of Yolo County. Currently, the County is also considering additional ordinances and/or the formation of a countywide water agency to provide enhanced groundwater resource management.

2. Policy Framework

GOAL CO-5	**Water Resources. Ensure an abundant, safe, and sustainable water supply to support the needs of existing and future generations.**

Policy CO-5.1 Coordinate with water purveyors and water users to manage supplies to avoid long-term overdraft, water quality degradation, land subsidence and other potential problems.

Policy CO-5.2 Support projects that provide reliable and sustainable surface water from a variety of energy efficient sources. Sources should be sufficient to serve existing and planned land uses in prolonged drought periods and protect natural resources and surface water flows.

Policy CO-5.3 Manage the County's groundwater resources on a sustainable yield basis that can provide water purveyors and individual users with reliable, high quality groundwater to serve existing and planned land uses during prolonged drought periods. (DEIR MM HYD-1a)

Policy CO-5.4 Support educational programs to educate the public about practices and programs to minimize water pollution and reduce water usage.

Policy CO-5.5 Integrate balanced water management programs that emphasize multiple benefits and balance competing needs into all aspects of the planning and development process.

Policy CO-5.6 Improve and protect water quality for municipal, agricultural, and environmental uses.

Policy CO-5.7 Support mercury regulations that are based on good science and reflect an appropriate balancing of sometimes competing public values including health, food chain, reclamation and restoration of Cache

Creek, sustainable and economically viable Delta agriculture, necessary mineral extraction, flood control, erosion control, water quality, and habitat restoration.

Policy CO-5.8 Support efforts to reduce the accumulation of methyl mercury in fish tissue in Cache Creek and the Delta, as well as the consumption of fish with high levels of methyl mercury.

Policy CO-5.9 Within the Delta Primary Zone, ensure compatibility of permitted land use activities with applicable water policies of the Land Use and Resource Management Plan of the Delta Protection Commission.

Policy CO-5.10 Encourage water purveyors to develop plans for responding to droughts and the effects of global climate change, including contingency plans, the sharing of water resources to improve overall water supply reliability, and the allocation of water supply to priority users.

Policy CO-5.11 Facilitate and encourage the development of new reliable future sources of supply consistent with local land use plans and regional water needs, including the completion of the Tehama-Colusa Canal.

Policy CO-5.12 Support the integrated management of surface and groundwater, stormwater treatment and use, the development of highly treated wastewater, and desalinization where feasible.

Policy CO-5.13 Ensure that regional, State, and federal water projects protect local water rights and areas of origin.

Policy CO-5.14 Require that proposals to convert land to uses other than agriculture, open space, or habitat demonstrate that groundwater recharge will not be significantly diminished.

Policy CO-5.15 Encourage new development and redevelopment to use reclaimed wastewater, where feasible, to augment water supplies and to conserve potable water for domestic purposes.

Policy CO-5.16 Require all development to have an adequate water supply. Require significant discretionary projects to demonstrate adequate long-term and sustainable water supplies by preparing a verified water supply assessment. The assessment shall demonstrate a long-term, reliable water supply satisfactory under normal and above normal rainfall conditions, as well as drought conditions. Satisfy the requirements of

CEQA Guidelines Section 15155 to consult with water agencies regarding water supply assessments.

Policy CO-5.17 Require new development to be designed such that nitrates, lawn chemicals, oil, and other pollutants of concern do not impair groundwater quality.

Policy CO-5.18 Encourage developers to build new homes to higher water-efficiency standards than already required.

Policy CO-5.19 Strive for "water-neutral" development with new water demand offset by efficiency improvements elsewhere in the system. Require all new developments to offset new water demands to the greatest extent feasible.

Policy CO-5.20 Encourage water purveyors to adopt conservation pricing strategies for existing and new development.

Policy CO-5.21 Encourage the use of water management strategies, biological remediation, and technology to address naturally occurring water quality problems such as boron, mercury, and arsenic.

Policy CO-5.22 Work with other agencies and non-profit organizations to provide educational and technical assistance programs to encourage farmers to adopt agricultural methods that improve water quality.

Policy CO-5.23 Support efforts to meet applicable water quality standards for all surface and groundwater resources.

Policy CO-5.24 Pursue funding to remediate historic mines and other sources of mercury contamination on the Cache Creek watershed.

Policy CO-5.25 Support the efforts of Davis, Woodland and UC Davis to acquire surface supplies from the Sacramento River for domestic water uses.

Policy CO-5.26 Provide financial and regulatory incentives for the installation of water conservation measures for agriculture.

Policy CO-5.27 Encourage the development of groundwater management plans pursuant to the State Groundwater Management Act (Sections 10750-10756 of the California Water Code) for all regions of the County.

Policy CO-5.28 Encourage the Water Resources Agency to implement and regularly update the Integrated Regional Water Management Plan.

Policy CO-5.29 Vigorously protect all water rights related to lands within Yolo County, including areas of origin, riparian water rights, and other existing water rights.

Policy CO-5.30 Anticipate and adapt to changes in the amount and timing of water availability due to predicted effects of global warming.

Policy CO-5.31 Encourage the Esparto CSD to explore the availability of Cache Creek water via the Flood Control District as an alternative source of municipal water. (DEIR UTIL-2b)

Policy CO-5.32 In water districts where there is insufficient water to serve new development, require new development to offset demand through one or more of the following measures as appropriate, so that there is no net increase in demand: use of reclaimed water, water catchments and reuse on-site; water retention serving multiple sites; retrofits of existing uses in the district to offset increased demand; and other such means. These measures should be achieved in partnership with the applicable water district. (DEIR MM UTIL 2c)

Policy CO-5.33 Strive to increase artificial recharge of important aquifers with surplus surface water supplies. (DEIR MM HYD-1b)

Policy CO-5.34 Require measures that reduce peak demand for water, and therefore allow for smaller pumps that use less energy overall.

3. Implementation Program

Action CO-A71 Collaborate with the Water Resources Agency to collect data from public water suppliers and other water users which use groundwater sources to monitor and report groundwater levels and yields, where appropriate, to manage long term aquifer conditions. (Policy CO-5.1, Policy CO-5.3)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A72 Work cooperatively with water purveyors and with other land use planning agencies to share data on water supply availability, anticipated demand, land use, and population projections. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A73 Create a central database for all jurisdictions within the County of proposed, pending, and approved development activity to be used in cumulative analyses and water supply assessments. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A74 Work with water purveyors in the County to plan for possible changes to water supply and quality resulting from global warming. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3, Policy CO-5.10)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A75 Participate in regional planning efforts regarding surface water resources, including the Sacramento River, Cache Creek, Putah Creek, Tehama-Colusa Canal, Yolo Bypass, and Sacramento-San Joaquin Delta. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A76 Oppose proposals for surface or groundwater exports to locations outside Yolo County that do not preserve both water quality and water supply for current and planned water users, including the environment. (Policy CO-5.2, Policy CO-5.3)
Responsibility: Parks and Resources Department, County Administrator's Office
Timeframe: Ongoing

Action CO-A77 Coordinate with local water purveyors to develop a conjunctive use program, consistent with the Integrated Regional Water Management Plan, to make the most efficient use of surface and groundwaters. (Policy CO-5.1, Policy CO-5.3)
Responsibility: Parks and Resources Department
Timeframe: 2010/2011

Action CO-A78 Ensure the collection and maintenance of data on water use, water supplies, and water quality to avoid long-term overdraft, water quality degradation, land subsidence and other potential groundwater problems. (Policy CO-5.5, Policy CO-5.6)
Responsibility: Health Department, Parks and Resources Department
Timeframe: Ongoing

Action CO-A79 Map operational and non-operational wells into the County's Geographic Information System. (Policy CO-5.3, Policy CO-5.5, Policy CO-5.6, Policy CO-5.7, Policy CO-5.8)
Responsibility: Health Department, Information Technology Department
Timeframe: 2010/2011

Action CO-A80 Work with local water purveyors to develop and implement urban and agricultural water management plans to provide a 20 percent improvement in water use efficiency throughout the county by 2030. (Policy CO-5.1, Policy CO-5.5)
Responsibility: Parks and Resources Department
Timeframe: 2011/2012

Action CO-A81 Develop and implement an integrated wellhead protection program. (Policy CO-5.6)
Responsibility: Agriculture Department, Health Department
Timeframe: 2009/2010

Action CO-A82 Develop a County grading ordinance that maintains existing terrain, channels, and vegetation to the extent possible, in order to minimize the disruption of natural systems. (Policy CO-5.5, Policy CO-5.6)
Responsibility: Planning and Public Works Department
Timeframe: 2009/2010

Action CO-A83 Adopt a Water Efficient Landscape Ordinance to require greater use of regionally native drought-tolerant vegetation, limitations on the amount of turf in residential development, computer controlled irrigation systems, and other measures as appropriate. (Policy CO-5.2, Policy CO-5.3, Policy CO-5.4)
Responsibility: Planning and Public Works Department
Timeframe: 2011/2012

Action CO-A84 Work with local agencies and non-profit organizations to provide educational and technical assistance to farmers to reduce sedimentation, provide on-site retention of irrigation water and flow attenuation, on-site detention of stormwater flows, and incorporate native vegetation. (Policy CO-5.4)
Responsibility: Agriculture Department
Timeframe: Ongoing

Action CO-A85 Coordinate with water purveyors in the unincorporated areas to inform the public about practices and programs to minimize water pollution. (Policy CO-5.4)
Responsibility: Parks and Resources Department, Agriculture Department
Timeframe: Ongoing

Action CO-A84.1 Consider adoption of an ordinance requiring that existing homes be retrofitted with water efficient appliances and fixtures prior to sale. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3, Policy CO-5.5)
Responsibility: Planning and Public Works Department
Timeframe: 2011/2012

Action CO-A86 Coordinate with the Yolo Resources Conservation District to create educational programs to inform agencies, stakeholders, and the public about groundwater Best Management Practices for efficient water use, water conservation, and recharge. (Policy CO-5.4)
Responsibility: Parks and Resources Department
Timeframe: 2011/2012

Action CO-A87 Establish the cost of operating and maintaining potable water treatment and distribution disposal systems/facilities to ensure they are borne by those receiving benefit, through the establishment of an appropriate maintenance entity and fees. (Policy CO-5.2, Policy CO-5.3, Policy CO-5.5)
Responsibility: Planning and Public Works Department, LAFCO
Timeframe: Ongoing

Action CO-A88 Adopt an ordinance to allow for shared water systems to facilitate the clustering of homes and preservation of agricultural land, where an entity is established to provide maintenance or financing for maintenance of the water system. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3)
Responsibility: Health Department
Timeframe: 2009/2010

Action CO-A89 Encourage roof catchment and the use of rainwater for non-potable uses to reduce the need for groundwater. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3, Policy CO-5.4)
Responsibility: Parks and Resources Department, Planning and Public Works Department
Timeframe: 2010/2011

Action CO-A90 Adopt development design standards to reduce or eliminate impervious surfaces where possible. (Policy CO-5.6)
Responsibility: Planning and Public Works Department
Timeframe: 2010/2011

Action CO-A91 Support water purveyors in the implementation and continued refining of the "Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California" in those areas where water suppliers are party to the MOU. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A92 Implement and regularly update the County Stormwater Management Plan and associated programs. (Policy CO-5.5, Policy CO-5.6)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A93 Require the implementation of Best Management Practices (BMPs) to minimize erosion, sedimentation, and water quality degradation resulting from new development and increases in impervious surfaces. (Policy CO-5.5, Policy CO-5.6)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A94 Adopt development design standards that use low-impact development techniques that emulate the natural hydrologic regime and reduce the amount of runoff and associated pollutants. Examples include vegetated swales, landscaped detention basins, permeable paving, and green roofs. (Policy CO-5.5, Policy CO-5.6)
Responsibility: Planning and Public Works Department
Timeframe:2012/2013

Action CO-A95 Work with the Central Valley Regional Water Quality Control Board and other State and federal agencies to implement mercury total maximum daily loads (TMDLs) for Cache Creek and to develop mercury TMDLs for the Delta and other Yolo County waterways where appropriate. (Policy CO-5.6, Policy CO-5.7)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A96 Evaluate the creation of a countywide water authority or other governance structure to address water conservation, flood control, water conveyance, and discourage water exports. (Policy CO-5.1, Policy CO-5.2, Policy CO-5.3)
Responsibility: County Administrator's Office, County Counsel
Timeframe: 2009/2010

Action CO-A97 Continue to monitor water quality in Lower Cache Creek and annually make the resulting data publicly available. (Policy CO-5.6)
Responsibility: Parks and Resources Department
Timeframe: Ongoing

Action CO-A98 Require service hook-up for all non-agricultural water users within a community when new domestic water services are made available. (Policy CO-5.6, Policy CO-5.17, Policy CO-5.23)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A99 Facilitate the extension of water service to nearby underserved existing unincorporated developments, such as Binning Farms. (Policy CO-5.6, Policy CO-5.17, Policy CO-5.23)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A100 Develop a generalized water balance for the County that uses updated hydrologic and topographic information to describe where water comes from and how it flows through the County, including recharge and extraction of ground waters. (Policy CO-5.3, Policy CO-5.5)
Responsibility: Parks and Resources Department
Timeframe: 2012/2013

Action CO-A101 Use watershed assessment to evaluate storm water and flood management programs to ensure that management efforts are consistent with local watershed hydrologic features and natural resource needs. (Policy CO-5.3, Policy CO-5.5)
Responsibility: Parks and Resources Department
Timeframe: 2013/2014

Action CO-A100.1 Create guidelines for local water providers to enact programs that promote: investigations of new sustainable sources such as recycled water and graywater that match water quantity and quality to the beneficial uses; and the securing of additional water rights for the pur-

veyors. (DEIR MM UTIL-2a) (Policy CO-5.1, Policy CO-5.2, Policy CO-5.11, Policy CO-5.15)
Responsibility: Parks and Resources Department
Timeframe: 2012/2013

H. Air Quality

1. Background Information

a. Air Basin and Meteorology

Yolo County is located in the Sacramento Valley Air Basin (SVAB), which also includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba and parts of Solano and Placer Counties. The SVAB is bounded by the Coast Ranges to the west, the Cascade Range to the north and the Sierra Nevada to the east. These mountain ranges channel wind through the Valley, but also limit dispersion of pollutant emissions from the Valley.

The SVAB is characterized by hot, dry summers and cool, rainy winters, with periods of dense and persistent low-level fog interspersed with the North Pacific storm track. The average summer daily temperatures for the Sacramento Valley air basin range from 50 to more than 90 degrees Fahrenheit. The winter average temperature is approximately 50 degrees Fahrenheit with winter low temperatures occasionally dropping below freezing.

The SVAB is subject to unique wind patterns, which can affect air quality by transporting pollutants. The ozone season in the SVAB, which occurs between May and October, is characterized by still air or light winds in the morning and an evening breeze that typically transports airborne pollutants out of the air basin. However, during part of the summer, wind patterns circle airborne pollutants back into the SVAB in a phenomenon referred to as an “inversion layer.” This phenomenon worsens the pollutant emission concentrations and contributes to violations of the air quality standards.

b. Regulatory Background

The Federal Clean Air Act (FCAA) governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA).

At the federal level, the United States Environmental Protection Agency (U.S. EPA) administers the CAA. The CCAA is administered by the California Air Resources Board (ARB) at the State level and by the various air quality management districts at the regional levels. The Yolo-Solano Air Quality Management District (District) regulates air

quality locally. The District's jurisdiction is the western portion of Lower Sacramento Valley Air Basin, comprised of Yolo County and the Northeast portion of Solano County.

The 1970 FCAA authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The FCAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans (SIPs) to demonstrate how they will achieve the national standards by specified dates. SIPs are not single documents, but rather are a compilation of new and previously submitted plans, programs, district rules, State regulations and federal controls. ARB reviews and approves the SIP, then provides the SIP to EPA for approval and publication. The CAA requires that projects receiving federal funds demonstrate conformity to the approved SIP and local air quality attainment plan for the region. Conformity with the SIP requirements also satisfies the CAA requirements.

In 1988, the CCAA required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards for carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2) and nitrogen dioxide (NO_2) by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources (Health and Safety Code Section 40716). Each district plan is to achieve a 5 percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each nonattainment pollutant or its precursors (Health and Safety Code Section 40914).

Based on this framework, national and State ambient air quality standards have been established for six pollutants: ozone, CO, lead, nitrogen dioxide (NO_2), particulate matter less than or equal to 10 or 2.5 microns in diameter (PM_{10} and $PM_{2.5}$), and sulfur dioxide (SO_2). Ambient air quality standards are designed to protect public health and welfare with a reasonable margin of safety. Because individuals vary widely in their sensitivity to air pollutants, standards are designed to protect more sensitive populations such as children and the elderly. Generally, California Ambient Air Quality Standards are more stringent than national standards.

Areas of California not meeting federal or State air quality standards are classified as nonattainment areas. Yolo County is designated as a nonattainment area for both the State and federal ozone standards and for the State inhalable particulate matter (PM_{10}) standards.

At both the federal and state level, control of greenhouse gases that contribute to global warming and other adverse climate changes is a relatively new area of policy and regu-

lation. Please refer to Section J (Climate Change) of this Element for a discussion of this issue.

c. Applicable State and Federal Air Quality Plans and Transportation Plans

The CCAA requires areas that have not attained State ambient air quality standards to prepare plans to attain these standards by the earliest practicable date. The District is designated as nonattainment for ozone, and accordingly, the 1992 Air Quality Attainment Plan (AQAP) was developed pursuant to CCAA requirements to provide progress toward attaining the State ozone standard. The District's Board of Directors adopted the AQAP on February 19, 1992, and it was approved by ARB on May 28, 1992.

State law does not require attainment plans for State particulate matter standards. State law does require annual and triennial progress reports regarding implementation of control measures, and triennial plan revisions to reflect and respond to changing circumstances.

The FCAA required a non-attainment plan (i.e. SIP) in 1994. The 1994 State Implementation Plan (SIP) superseded the 1992 AQAP. The SIP was deemed by ARB to fulfill the requirements for the first Triennial Progress Report to the AQAP. Additional Triennial Progress Reports were completed in 1997, 2000, and 2003.

In addition to these federal and State air quality plans, the District developed the Transportation and Land Use Toolkit in 2003, in partnership with several regional transportation agencies. The Toolkit discusses projects for alternative transportation modes that may mitigate and reduce emissions. SACOG has also created a Preferred Blueprint Scenario, approved in 2003, which outlines a vision of growth that promotes compact land use patterns which would contribute to reduced vehicular emissions.

2. Policy Framework

GOAL CO-6	**Air Quality. Improve air quality to reduce the health impacts caused by harmful emissions.**
Policy CO-6.1	Improve air quality through land use planning decisions.
Policy CO-6.2	Support local and regional air quality improvement efforts.
Policy CO-6.3	Encourage employers to increase telecommuting, telepresence, provide bicycle facilities, and enhance access to public transit for employees.

Policy CO-6.4 Engage the public in efforts to increase awareness of the health risks associated with air pollution and to take voluntary actions that reduce emissions.

Policy CO-6.5 Encourage community participation in air quality planning.

Policy CO-6.6 Encourage implementation of YSAQMD Best Management Practices, such as those listed below, to reduce emissions and control dust during construction activities:

- Water all active construction areas at least twice daily.
- Haul trucks shall maintain at least two feet of freeboard.
- Cover all trucks hauling soil, sand, and other loose materials.
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut-and-fill operations and hydroseed area.
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Sweep streets if visible soil material is carried out from the construction site.
- Treat accesses to a distance of 100 feet from the paved road with a 6 to 12 inch layer of wood chips or mulch.
- Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel. (DEIR MM AIR-1)

Policy CO-6.7 Pursue legislation to assist farming operations with permitting bio-energy operations.

3. Implementation Program

Action CO-A102 Implement the guidelines of the Transportation and Land Use Toolkit, developed by the Yolo-Solano Air Quality Management District (YSAQMD). (Policy CO-6.1, Policy CO-6.2)

Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A103 Require development proposals that introduce sources of toxic air pollutants to prepare a health risk assessment and, based on the results of the assessment, establish appropriate land use buffer zones around those uses posing substantial health risks. (Policy CO-6.1)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A104 For discretionary permits, require agricultural Best Management Practices regarding odor control, stormwater drainage, and fugitive dust control where appropriate. (Policy CO-6.1)
Responsibility: Agriculture Department
Timeframe: Ongoing

Action CO-A105 Implement the regulations and programs established by the YSAQMD to bring local air quality into attainment with State and federal standards. (Policy CO-6.1, Policy CO-6.2)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A106 Coordinate air quality planning efforts with other local, regional and State agencies. (Policy CO-6.1, Policy CO-6.2)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A107 Regulate the location and operation of land uses to avoid or mitigate harmful or nuisance levels of air emissions to the following sensitive receptors: residentially designated land uses; hospitals, nursing/convalescent homes, and similar board and care facilities; hotels and lodging; schools and day care centers; and neighborhood parks. Home occupation uses are excluded. New development shall follow the recommendations for siting new sensitive land uses consistent with the CARB's recommendation as shown in Table CO-9 below. (DEIR MM AIR-3) (Policy CO-6.1, Policy CO-6.2)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

TABLE CO-9 **RECOMMENDATIONS ON SITING NEW SENSITIVE LAND USES**

Source	Category Advisory Recommendations
Freeways and High-Traffic Roads	Avoid concentrating sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid concentrating sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid concentrating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid concentrating sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within 1 mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid concentrating sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	Avoid concentrating sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid concentrating sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid concentrating sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not concentrate sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	Avoid concentrating sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Notes:

1. These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
2. Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
3. The relative risk for these categories varies greatly. To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
4. These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
5. Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
6. This table does not imply that mixed residential and commercial development in general are incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
7. A summary of the basis for the distance recommendations can be found in Table 1-2 (see ARB's *Land Use Handbook*).

Source: California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April and Tschudin Consulting Group, April 2009.

Action CO-A108 Establish additional air quality monitoring stations in consultation with the YSAQMD, where appropriate. (Policy CO-6.1, Policy CO-6.4)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A109 Prohibit wood-burning fireplaces in new residential developments. (Policy CO-6.1)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

I. Energy Conservation

The following discussion includes goals, policies and actions relating to energy production, usage and conservation within Yolo County. Other policies relating to energy conservation, particularly associated with green building, are also located in the Land Use and Community Character Element of this General Plan.

1. Background Information

Title 24, Part 6 of the California Code of Regulations sets forth the State energy efficiency standards for residential and non-residential buildings. Title 24 requirements address a wide range of design and energy performance features of development, including insulation; the use of energy-efficient heating, ventilation and air conditioning equipment; solar reflective roofing materials; and energy-efficient indoor and outdoor lighting systems.

Energy conservation has numerous benefits besides economic and financial savings for individual consumers. The combustion of fossil fuels to produce heat or electricity, or to power internal combustion engines, has been linked to poor air quality in the Sacramento Valley, global warming and negative impacts on crops. In Yolo County, energy conservation can be achieved via a reduction in electricity usage and private automobile use, encouraging efficient siting and exposure for buildings, and implementing land use and transportation policies that encourage fewer and shorter vehicle trips.

2. Policy Framework

GOAL CO-7	**Energy Conservation. Promote energy efficiency and conservation.**

Policy CO-7.1 Encourage conservation of natural gas, oil and electricity, and management of peak loads in existing land uses.

Policy CO-7.2 Support efforts to improve energy efficiency in existing irrigation systems.

Policy CO-7.3 Require all projects to incorporate energy-conserving design, construction, and operation techniques and features into all aspects of the project including buildings, roofs, pavement, and landscaping.

Policy CO-7.4 Require the use of Energy Star certified appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units, where feasible.

Policy CO-7.5 Require all new parking lots to significantly increase shading to relieve the potential for "heat islands."

Policy CO-7.6 Encourage the use of building materials and methods that increase energy efficiency a minimum of 15 percent beyond State Title-24 standards for residential buildings and 20 percent beyond State Title 24 standards for commercial buildings.

Policy CO-7.7 Support farmers and landowners in their efforts to maximize the efficiency of agricultural end uses.

Policy CO-7.8 Increase energy efficiency and alternative energy utilization in existing buildings where feasible.

Policy CO-7.9 Require that new site and structure designs maximize energy efficiency.

Policy CO-7.10 Encourage residents to retrofit existing residences to maximize energy efficiency.

Policy CO-7.11 Strongly encourage LEED certification or equivalent for all public, private and existing buildings and strongly encourage LEED-Neighborhood Design (ND) certification or equivalent for other applicable projects, particularly within the Specific Plan areas.

3. Implementation Program

Action CO-A110 Amend the Zoning Code to streamline permitting for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels. (Policy CO-7.1)
Responsibility: Planning and Public Works Department
Timeframe: 2010/2011

Action CO-A111 Require the use of Energy Star certified appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units, in all new subdivisions. (Policy CO-7.1, Policy CO-7.4)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A112 Use development agreements to garner commitments from developers of new projects to increase the energy efficiency in existing development. . (Policy CO-7.1, Policy CO-7.8)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A113 Amend the Zoning Code to include regulations for all new parking lots to include tree plantings that will result in 50 percent shading of parking lot surface areas within 10 years. (Policy CO-7.1, Policy CO-7.5)
Responsibility: Planning and Public Works Department
Timeframe: 2010/2011

Action CO-A114 Use Development Agreements and/or adopt an ordinance to require the use of building materials and methods that increase energy efficiency a minimum of 15 percent beyond State Title-24 standards for residential construction and 20 percent beyond Title 24 for commercial construction, where feasible. (Policy CO-7.6)
Responsibility: Planning and Public Works Department, County Counsel
Timeframe: Ongoing

Action CO-A115 Streamline the permit process to promote energy production from agricultural bio-waste. (Policy CO-7.7)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

J. Climate Change

A summary of the issue of climate change is provided in this subsection, however climate change policies also occur in every element of this General Plan and are denoted by the symbol "🌎".

1. Background Information

A balance of naturally occurring greenhouse gases (GHGs) in the earth's atmosphere is responsible for maintaining a habitable climate. Emissions from human activities, such as electrical production, motor vehicle use, and some forms of agriculture are elevating the concentrations of greenhouse gases in the atmosphere, and have led to increasing instability in the earth's climate. This is known as climate change. Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the primary GHGs. Other greenhouse gases of concern include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect is enhanced and global warming occurs.

California's major initiatives for reducing climate change or GHG emissions are outlined in Assembly Bill 32 (signed into law 2006), 2005 Executive Order and a 2004 California Air Resources Board (CARB) regulation to reduce passenger car GHG emissions. Among other things, AB 32 establishes a statewide GHG emissions cap for 2020, based on 1990 emissions. The Executive Order and the CARB regulations also aim at reducing GHG emissions 80 percent below 1990 levels by 2050. The CARB is tasked with implementation of these directives.

How California communities are designed and built has large consequences on the State's GHG emission levels, and as a result, has an impact on global climate change. The majority of the State's greenhouse gas (GHG) emissions are the result of infrastructure and development decisions: how we build our buildings, where we put them, and the quality and types of infrastructure that are required to serve them. This General Plan addresses those issues for unincorporated Yolo County.

This General Plan establishes the land use pattern that will accommodate the residents, businesses, and attendant infrastructure planned through 2030 in Yolo County. Decisions about the location of commercial, residential and civic buildings, roads and transit systems, water supply, building design, natural resources, open space, agriculture, and energy infrastructure determine the level of GHG emissions in the County. Thus, through the implementation of this General Plan it is possible to reduce in local GHG emissions. Local decisions regarding agricultural land preservation, transportation, air quality, water supply, economic development, environmental

protection, and affordable housing need to be coordinated and balanced to achieve the County's multiple policy objectives and still minimize GHG emissions.

Motor vehicle use creates a significant proportion of GHG emissions. There are three interrelated components that can contribute to transportation sector emission reductions: 1) vehicle technology, 2) fuels, and 3) vehicle use. Local government has the ability to affect only one area – vehicle use. Vehicle use is affected by providing transportation alternatives and by managing the demand for transportation.

Transportation demand management (TDM) and alternative mobility options, including walking, biking, and transit, require coordinated land use decisions and measures that maximize the efficient use of existing transportation systems and provide for the increased availability and use of efficient transit, as well as walking and biking infrastructure to increase mobility, improve health, and provide other economic and environmental benefits. The effectiveness of efforts to provide transportation alternatives to the automobile and to implement TDM policies and strategies can be measured in terms of reductions in vehicle miles traveled (VMT) or expected growth in VMT. VMT reductions (and speed stability) correlate directly with reductions in GHG emissions.

Land use patterns also have a direct relationship to GHG emissions. Studies have shown that the following land use characteristics lead to significantly higher average vehicle ownership, daily VMT per capita, annual traffic fatality rate, and maximum ozone level days.

- Population dispersed in low-density residential development.
- A lack of mixed uses (homes, shops, and workplaces).
- A lack of distinct, thriving activity centers, such as strong downtowns or town centers.
- A network of roads marked by very large block size and poor access from one place to another.

Research of the many factors that can be used to analyze the relationship between development and transportation implies that density may have the most significant relationship to travel and transportation outcomes. Controlling for other factors, the difference between the length and amount of trips, low density U.S. metropolitan areas have over 40 percent more daily VMT per capita than high density areas. In general, a doubling of neighborhood density can be expected to result in approximately a 5 percent reduction in both the number of vehicle trips and their length.

Overall VMT and vehicle trips per household decline as accessibility, density, and land-use mixing increase, which have historically been tenets of land use planning in Yolo County, as in this General Plan.

Yolo County has undertaken several actions to date to reduce greenhouse gases as related to County operations and programs:

- **Climate Change Working Group.** Yolo County has created a climate change team through the County Administrator's Office and has organized a climate change working group that includes the cities and various districts, to coordinate countywide climate change efforts.
- **Cool Counties.** The County has committed to the Cool Counties Climate Stabilization Declaration, a pledge to reduce greenhouse gas emissions from County operations by 80 percent by 2050.
- **California Climate Action Registry.** The County has prepared a baseline audit energy usage associated with County operations. This baseline will be used to measure energy usage over time. Through the registry the County will use a common GHG emission reporting system and will receive credit for reductions in emissions.
- **UC Davis Partnership.** The County has engaged civil and environmental engineering students to assist in studying its carbon generation from county operations, and develop policies and strategies to reduce emissions.
- **Increasing Energy Efficiency.** The County has taken steps to increase the energy efficiency of county operations including replacement of incandescent lights with compact fluorescent bulbs, retrofit of infrastructure in County buildings, installation of computerized climate control in all major county buildings, installation of cogeneration capacity at the Monroe Detention Facility, development of a building closure program to retire less energy-efficient buildings, and a countywide appliance replacement program for Energy Star appliances. The County has a goal of ten percent annual reduction in energy usage through 2013.
- **Full-Scale Landfill Bioreactor.** The County recovers methane gas, a potent greenhouse gas, from the Central Landfill to generate electricity.
- **LEED.** The County has adopted Leadership in Energy and Environmental Design (LEED) standards for new county buildings.
- **Recycling.** All County buildings recycle paper, cardboard, cans, bottles, fluorescent tubes, oil, computers, rigid plastics, agricultural plastics, PVC pipe, toner cartridges, cell phones, batteries, and electronic waste. The County has a goal of 50 percent recycling of all sorted material at the landfill. The County also has a Construction and Demolition Recycling Ordinance that requires diversion and recycling of construction and demolition debris.
- **Agricultural Marketing.** The Agriculture Commissioner has initiated an agricultural marketing program to reduce "food miles," and therefore result in reductions in carbon dioxide emissions.

- **Transportation and Fleet Vehicles.** The County has installed charging stations for electric vehicles and uses electric vehicles for commuting between local facilities.
- **Personnel Training.** County staff attends classes on the California Environmental Quality Act (CEQA) and on climate change issues.
- **Tree Planting.** The County operates a small nursery that provides tree planting for County facilities.
- **Research.** The County is involved in a variety of research projects related to energy conservation and control of GHG emissions.

The County also requires energy efficient project design and landscaping design as a part of the development review process. Additionally, the Cache Creek Area Plan establishes monetary and regulatory incentives to encourage recycling of aggregate products.

2. Policy Framework

GOAL CO-8	**Climate Change. Reduce greenhouse gas emissions and plan for adaptation to the future consequences of global climate change.**

Policy CO-8.1 Assess current greenhouse gas emission levels and adopt strategies based on scientific analysis to reduce global climate change impacts.

Policy CO-8.2 Use the development review process to achieve measurable reductions in greenhouse gas emissions.

Policy CO-8.3 Prepare appropriate strategies to adapt to climate change based on sound scientific understanding of the potential impacts.

Policy CO-8.4 Encourage all businesses to take the following actions, where feasible: replace high mileage fleet vehicles with hybrid and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling.

Policy CO-8.5 Promote GHG emission reductions by supporting 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 CO-8.6 Undertake an integrated and comprehensive approach to planning for climate change by collaborating with international, national, State, regional, and local organizations and entities.

Policy CO-8.7 Integrate climate change planning and program implementation into County decision making.

Policy CO-8.8 Increase public awareness about climate change and encourage county residents and businesses to become involved in activities and lifestyle changes that will aid in reduction of greenhouse gas emissions.

Policy CO-8.9 Work with local, regional, State, and Federal jurisdictions, as well as private and non-profit organizations, to develop a regional greenhouse gas emissions inventory and emissions reduction plan.

3. Implementation Program

Action CO-A116 Develop a Greenhouse Gas (GHG) Emissions Reduction Plan and/or Climate Action Plan (CAP) for the County, to control and reduce net GHG emissions, and to address economic and social adaptation to the effects of climate change. Development of this plan(s) shall include the following steps:

1) conduct a baseline analysis (GHG emissions inventory) for 1990. or most appropriate baseline year;
2) adopt an emissions reduction target;
3) develop strategies and actions for reducing emissions including direct offsets and fees to purchase offsets;
4) develop strategies and actions for adaptation to climate change;
5) implement strategies and actions; and
6) monitor emissions and verify results a minimum of every five years starting in 2010.

Utilize the 1982 Energy Plan as a starting point for this effort. Encourage collaboration with the cities to include the incorporated areas in the plan(s). Amend the General Plan to include the plan(s) after adoption. Require County operations and actions, as well as land use approvals to be consistent with this plan(s). This plan must be in place prior to adoption of any specific plan. (Policy CO-8.1)

Responsibility: County Administrator's Office
Timeframe: 2009/2011

Action CO-A117 In the interim until the GHG Emissions Reduction Plan/Climate Action Plan is in effect, the following significance thresholds shall be used for project analysis:

- Projects consistent with the General Plan and otherwise exempt under CEQA – Assumed to be de minimus.
- Projects consistent with the General Plan and subject to CEQA – Net zero threshold to be achieved by the applicant as follows:
  - Apply practical and reasonable design components and operational protocols to reduce project GHGs emissions to the lowest feasible levels;
  - Use verifiable offsets to achieve remaining GHG reductions to the greatest feasible extent, offsets shall be: locally based, project relevant, and consistent with other long term goals of the County. (Policy CO-8.9).

Responsibility: Planning and Public Works Department; Parks and Resources Department
Timeframe: Ongoing

Action CO-A118 Monitor State progress in the development of GHG quantification protocol and guidance for local governments that allows for statewide uniform measurement and estimation of expected jurisdiction-wide GHG emissions. (Policy CO-8.1)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A119 Require the implementation of cost-effective and innovative GHG emission reduction technologies in building components and design. (Policy CO-8.2, Policy CO-8.4)
Responsibility: Planning and Public Works Department, General Services Department
Timeframe: Ongoing

Action CO-A120 Adopt urban forestry practices that encourage forestation as a means of storing carbon dioxide, with the goal of doubling the tree canopy in unincorporated communities by 2030. Use appropriate protocols to assess owner eligibility to sell carbon credits. (Policy CO-8.1)

Responsibility: Planning and Public Works Department, Parks and Resources Department
Timeframe: 2012/2013

Action CO-A121 Require new development to incorporate designs and/or programs to reduce travel demand and vehicle emissions. (Policy CO-8.2, Policy CO-8.4)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A122 Require that new development incorporate alternative modes of transportation, including transit, bicycling and walking, in order to reduce vehicle emissions. (Policy CO-8.2, Policy CO-8.4)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A123 Consider the provision of local housing for County employees to reduce commute travel time. (Policy CO-8.2)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action CO-A124 In conjunction with, or immediately following, preparation of the Greenhouse Gas Emissions Reduction/Climate Action Plan(s) for the County, require countywide departmental analysis of how predicted effects of climate change will affect responsibilities and resources of each department. Develop strategies and actions to addresses outcomes. (Policy CO-8.3, Policy CO-8.7)
Responsibility: County Administrator's Office
Timeframe: 2011/2012

Action CO-A125 Encourage Incorporation of the County's Greenhouse Gas Emissions Reduction Plan/Climate Action Plan into a regional climate action plan. The regional plan should strive to achieve its fair-share contribution towards a minimum 80 percent reduction in regional greenhouse gas emissions by 2050. (Policy CO-8.9)
Responsibility: County Administrator's Office
Timeframe: 2011/2012

K. Delta Region

The following discussion includes goals, policies and actions relating to the County's interests in the Delta region. Other policies relating to the Delta are also located in each of the other elements of this General Plan.

1. Background Information

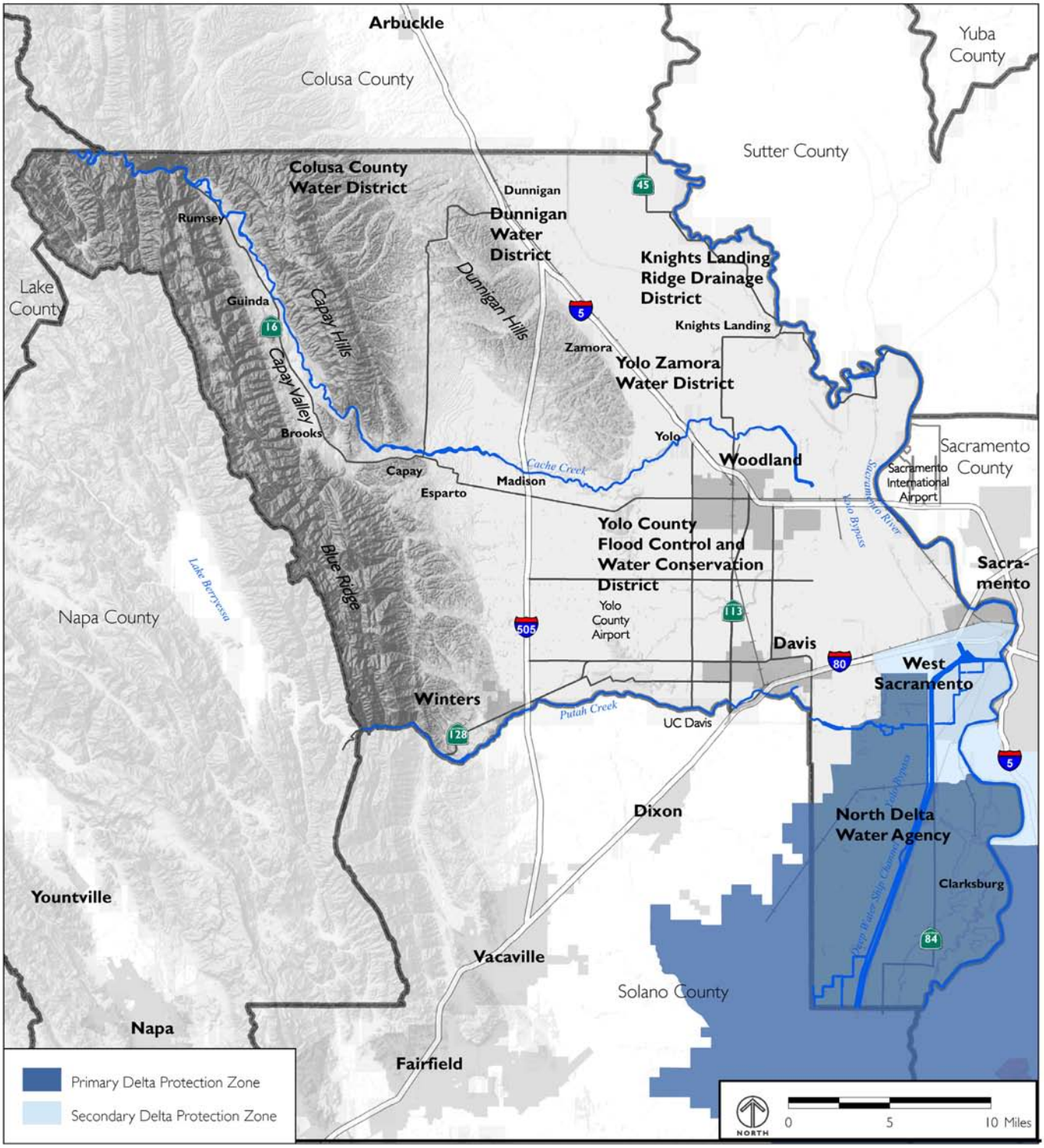
In the past two years, the Delta has become an area of intense interest, with numerous planning and legislative efforts looking to redefine the policy and regulatory landscape. This General Plan will incorporate the timely results of these various state processes, where appropriate, once they are adopted. Other processes may be the subject of future Amendments to bring the General Plan into conformance with new laws and/or regulations.

Those areas of the Yolo Bypass, the City of West Sacramento, and the unincorporated area that lie south of Interstate 80 are located within the Primary and Secondary Zones of the Sacramento-San Joaquin Delta (see Figure CO-9, Delta Protection Zones). Land use in these areas must not only be consistent with this General Plan, they must also be consistent with the Land Use and Resource Management Plan (LURMP), as adopted by the Delta Protection Commission (DPC). The DPC is currently in the process of updating the LURMP, to address a wide range of issues, including recent court decisions related to water export, studies that indicate serious problems with the health of the Delta ecosystem, concerns about the ability of levees to withstand significant flood and/or seismic events, and the effects of future global climate change. This review may include areas outside of the Delta as currently defined. The updated Draft LURMP is expected to be released in 2009.

Similarly, in 2006, the Governor issued an Executive Order creating the Delta Vision process. The Delta Vision Blue Ribbon Task Force (DVBRTF) is a group of public officials, experts, and stakeholders, charged with developing recommendations on the overall management and governance of the Delta, including goals related to improving safety, ensuring water supply and water quality, expanding recreation, coordinating emergency response, and protecting infrastructure and public safety. The DVBRTF is currently conducting their strategic planning process, which is expected to be completed by early 2009.

The Bay Delta Conservation Plan (BDCP) is a collaborative effort between Federal and State agencies, water districts, environmental organizations, and the California Farm Bureau to help recover endangered/sensitive species and their habitats in the Delta, while ensuring sufficient and reliable water supplies for Central and Southern California. Primary among their recommendations is the construction of a new facility to convey water

FIGURE CO-9 **DELTA PROTECTION ZONES**



Source: Delta Protection Commission, 2008.

Clarksburg Marina *Source: April Farnham-Morrison*

from the North Delta to the South Delta. There are two potential alignments for an alternative conveyance: one going through Sacramento County and one through Yolo and Solano Counties. Extensive habitat restoration to mitigate for the plan is also under consideration, including the lower Yolo Bypass and the Clarksburg region. The BDCP is expected to be completed by 2010.

The Central Valley Regional Water Quality Control Board (CVRWQCB) is in the process of developing Total Maximum Daily Loads (TMDLs) for mercury. Both refined and elemental mercury are contaminants in the Delta, the result of natural deposits and the ongoing effects of gold mining in the 18th century. Mercury becomes more concentrated as it is carried up the food chain, adversely affecting development in the young. It is of particular concern to the health of fish species and people who consume large amounts of

Delta fish. The TMDLs will strictly regulate the amounts of mercury that can be discharged into the Delta and its tributaries.

The Lower Bypass Planning Forum provides a stakeholder process to assess a broad range of issues concerning the southerly portion of the Yolo Bypass. A State-funded planning process, it includes participation by the DPC, Yolo Basin Foundation, Metropolitan Water District, and Westlands Water District.

2. Policy Framework

GOAL CO-9	**Delta Governance. Participate in State and regional efforts to establish governance, policy, and regulations for the Delta, to ensure the consideration of Yolo County's interests.**

Policy CO-9.1 Advocate for the establishment of funding mechanisms independent of the State budget for payment to the County of in-lieu property taxes and other fees on land acquired in the Delta for habitat restoration and water conveyance.

Policy CO-9.2 Ensure that the acquisition of new municipal water for the City of Davis, City of Woodland, and UC Davis from the Sacramento River is not precluded.

Policy CO-9.3 Pursue the establishment of dedicated State and federal funding sources to remediate mercury, in the various sources located in the upper Cache Creek watershed, in the sediments and waterways of both Cache Creek (including the Settling Basin) and the Yolo Bypass, and where it methylizes in the Delta.

Policy CO-9.4 Ensure that the design and construction of habitat restoration projects within riparian areas do not result in increased levels of mercury biomethylization within the Yolo Bypass and Delta.

Policy CO-9.5 Encourage funding to maintain and strengthen flood capacity along the Sacramento River and Yolo Bypass, including support from beneficiaries of the State and Central Valley Water Projects, which have changed flow regimes to the detriment of levee integrity.

Policy CO-9.6 Support efforts to provide a minimum 100-year flood protection for the community of Clarksburg.

Policy CO-9.7 Protect water quality in the Sacramento River, its tributaries, and groundwater aquifers from excess salinity due to decreased fresh water inflow from Delta projects.

Policy CO-9.8 Work to implement high priority projects in Yolo County's Integrated Regional Water Management Plan, especially related to flood management on Cache Creek.

Policy CO-9.9 Ensure existing and future operations of the Port of Sacramento as an industrial and transport hub for the region, including protection and improvement of the levees along the deep-water ship channel, as well as deepening the ship channel.

Policy CO-9.10 Support improvements necessary to ensure the continued transportation of agricultural products along State Route 84 for the Clarksburg region.

Policy CO-9.11 Ensure that proposed changes to the operation of the Sacramento Weir fully mitigate any potential adverse impacts to Old River Road (County Road 22).

Policy CO-9.12 Work to ensure that changes to the operation of the Yolo Bypass, including the Fremont Weir, toe drain, and/or increased frequency of intentional flooding do not adversely affect Yolo County interests. These may include: the economic viability of agriculture within the Bypass, the feasibility of planned development for the Elkhorn Specific Plan, the use of County Road 22 as an alternative route during closures of Interstate 5, and the continued operation of Interstates 5 and 80, and the Union Pacific Railroad across the Bypass.

Policy CO-9.13 Encourage funding for the construction and operation of the Pacific Flyway Center at a site located next to the Yolo Bypass.

Policy CO-9.14 Establish Clarksburg as a gateway entry for visitors to the Delta region seeking agricultural tourism, ecotourism, and recreational opportunities.

Policy CO-9.15 Pursue funding to assist non-governmental organizations acquire agricultural conservation easements within Yolo County, where appropriate.

Policy CO-9.16 Pursue funding to assist non-governmental organizations acquire habitat conservation easements within Yolo County, where appropriate.

Policy CO-9.17 Support the establishment of a Delta Conservancy to provide funding and work with federal, State and local governments, local Habitat Conservation Programs, nonprofit organizations, and landowners on improvements to Delta land use management.

Policy CO-9.18 Work to ensure recognition by the Central Valley Regional Water Quality Control Board (CVRWQCB) of the economic, habitat, water resources, and flood management impacts associated with developing Total Maximum Daily Loads (TMDLs) for mercury within the Delta.

Policy CO-9.19 Recognize the special character of "heritage" or "legacy" communities in the Delta (such as Clarksburg) and promote their economic vitality.

Policy CO-9.20 Seek to ensure that future changes to the boundaries of the Delta, including the boundaries of the Primary and Secondary Zones, are consistent with the goals and policies of this General Plan.

Policy CO-9.21 Work to ensure that State and federal habitat restoration efforts recognize and support the Yolo Natural Heritage Program.

Policy CO-9.22 Pursue policy and legislative strategies to ensure that the Clarksburg Agricultural District can be fully implemented within the Delta Protection Commission Land Use and Resource Management Plan, Delta Vision, Bay-Delta Conservation Plan, and other regional efforts.

3. Implementation Program

Action CO-A126 Pursue recognition and compensation from the State and other appropriate entities, public or private, for the economic effects of changes to the management and governance of the Delta on Yolo County. (Policy CO-9.1, Policy CO-9.3, Policy CO-9.20, Policy CO-9.21)
Responsibility: County Administrator's Office, Parks and Resources Department
Timeframe: Ongoing

Action CO-A127 Actively participate in State and regional efforts to establish land use policy, regulation, and governance for the Delta to ensure the consid-

eration of Yolo County's interests. (Policy LU-4.2, Policy CO-20, Policy CO-9.21)
Responsibility: Planning and Public Works Department, County Administrator's Office, Parks and Resources Department
Timeframe: Ongoing