



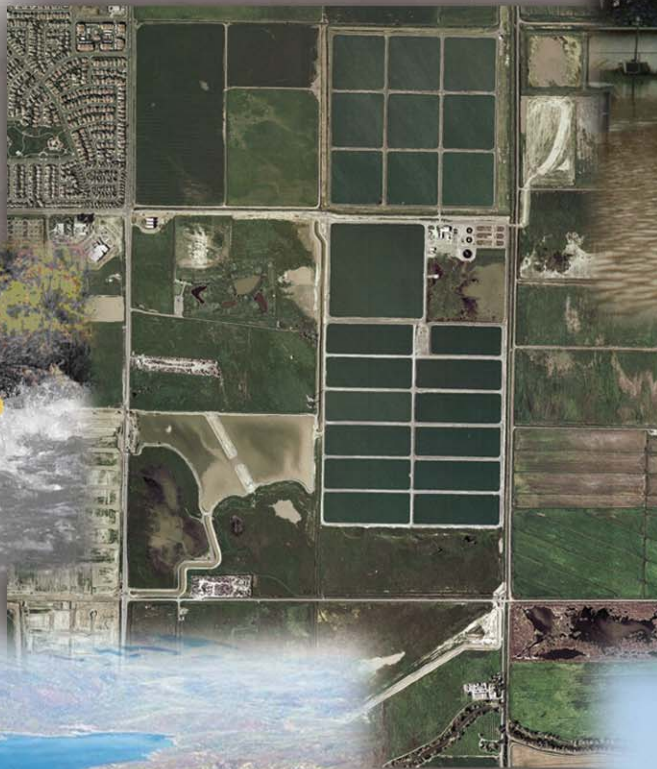
Water Resources Association of Yolo County
**INTEGRATED REGIONAL WATER
MANAGEMENT PLAN**

APRIL 2007

Water Quality

Flood
Management

Recreation



Riparian & Aquatic
Ecosystem
Enhancement

Water Supply &
Drought Preparedness





I n t e g r a t e d R e g i o n a l W a t e r M a n a g e m e n t P l a n
April 2007

Plan Adoption

The undersigned representatives of the Member Agencies of the Water Resources Association of Yolo County hereby formally adopt the Integrated Regional Water Management Plan for Yolo County:

Sue Greenwald, Mayor
City of Davis

Date

Wes Beers, Council Member
City of West Sacramento

Date

Tom Stone, Council Member
City of Winters

Date

William Marble, Council Member
City of Woodland

Date

Duane Chamberlain, Supervisor
County of Yolo

Date

Gary Schaad, Board Member
Dunnigan Water District

Date

Regina Cherovsky, Manager
Reclamation District No. 2035

Date

Sidney England, Environmental Planner
University of California, Davis

Date

David Scheuring, Chair
Yolo County Flood Control &
Water Conservation District

Date

Plan Adoption (Signature Page)

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B Alternate Prioritization Method

C Water-Related Policy Options for the Yolo County General Plan

D Community Workshop Outcomes

E Stakeholder Meeting Summaries

F Comments / Responses – Draft IRWMP, October 2006

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Acronyms

BMPs	Best Management Practices
CCD	County Census Designation
CCRMP	Cache Creek Resource Management Plan
CEQA	California Environmental Quality Act
CWC	California Water Code
CDFG	California Department of Fish and Game
CLBL	Center for Land-Based Learning
DPC	Delta Protection Commission
DWR	[California] Department of Water Resources
FEMA	Federal Emergency Management Agency
HCP/NCCP	Habitat Conservation Plan/Natural Communities Conservation Plan
IGSM	Integrated Groundwater Surface Water Model
IRWMP	Integrated Regional Water Management Plan
LID	Low Impact Development
LiDAR	Light Detection and Ranging
LPCCC	Lower Putah Creek Coordinating Committee
NCWA	Northern California Water Association
NED	National Economic Development
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
RD	Reclamation District
RWA	Regional Water Authority
RWQCB	Regional Water Quality Control Board
SAFCA	Sacramento Area Flood Control Agency
SCADA	Supervisory Control and Data Acquisition
SCWA	Solano County Water Agency
SWP	State Water Project
SWRCB	State Water Resources Control Board
TC	Technical Committee (of WRA)
TMDL	Total Maximum Daily Load
UC	University of California
WRA	Water Resources Association of Yolo County
WRID	Water Resources Information Database
YCFCWCD	Yolo County Flood Control & Water Conservation District

Integrated Regional Water Management Plan
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Glossary of Terms

Action – A *project*, *program*, or *policy* that addresses one or more issues articulated by the Water Resources Association of Yolo County (WRA).

Component Action – Individual action included in an integrated action.

Foundational Action – *Project* or *program* that forms a foundation for resource management. Foundational actions may include planned or existing ongoing studies, modeling projects, or monitoring programs used to collect, simulate, or predict information.

Implementation Strategy – A coherent approach to implementing integrated and individual water management actions, based upon priority, readiness, funding opportunities, and other considerations.

Individual Action – An *action* that addresses one or more issues in one of five water resource management categories (see “Water Resource Management Category” definition).

Integrated Action – A combination of *actions* that are linked by resources, geographic location, or other attribute, to address in a comprehensive manner multiple issues in more than one water resource management category (see “Water Resource Management Category” definition).

Issue – A water resource management problem or need affecting the citizens or resources of Yolo County, articulated by WRA.

Partner – An entity collaborating with other entities in implementing an integrated action.

Policy – A type of *action* taken by a WRA agency, which guides acceptable procedures with a specific goal or objective.

Prerequisite Task – Study or other activity that must be conducted before a particular action can be implemented.

Prioritization – A quantitative or qualitative method to compare the relative importance and timeliness of desired actions.

Project – A type of *action* taken by a WRA agency, which results in a direct physical change.

Program – A type of *action* taken by a WRA agency, which consists of an activity or set of activities, such as a resource management plan.

Water Resource Management Category – Five separate but related resource management areas considered essential elements in a region or watershed, and designated for evaluation and improvement by an integrated, regional watershed management plan.

Preparers and Sources of Information

This IRWMP was prepared under the direction of the Board of the Water Resources Association of Yolo County (WRA) by the WRA Technical Committee, with the support of a consultant team and the California Department of Water Resources (DWR).

2006-2007 WRA Board of Directors

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Sid England	University of California, Davis, <i>WRA Vice-Chair</i>
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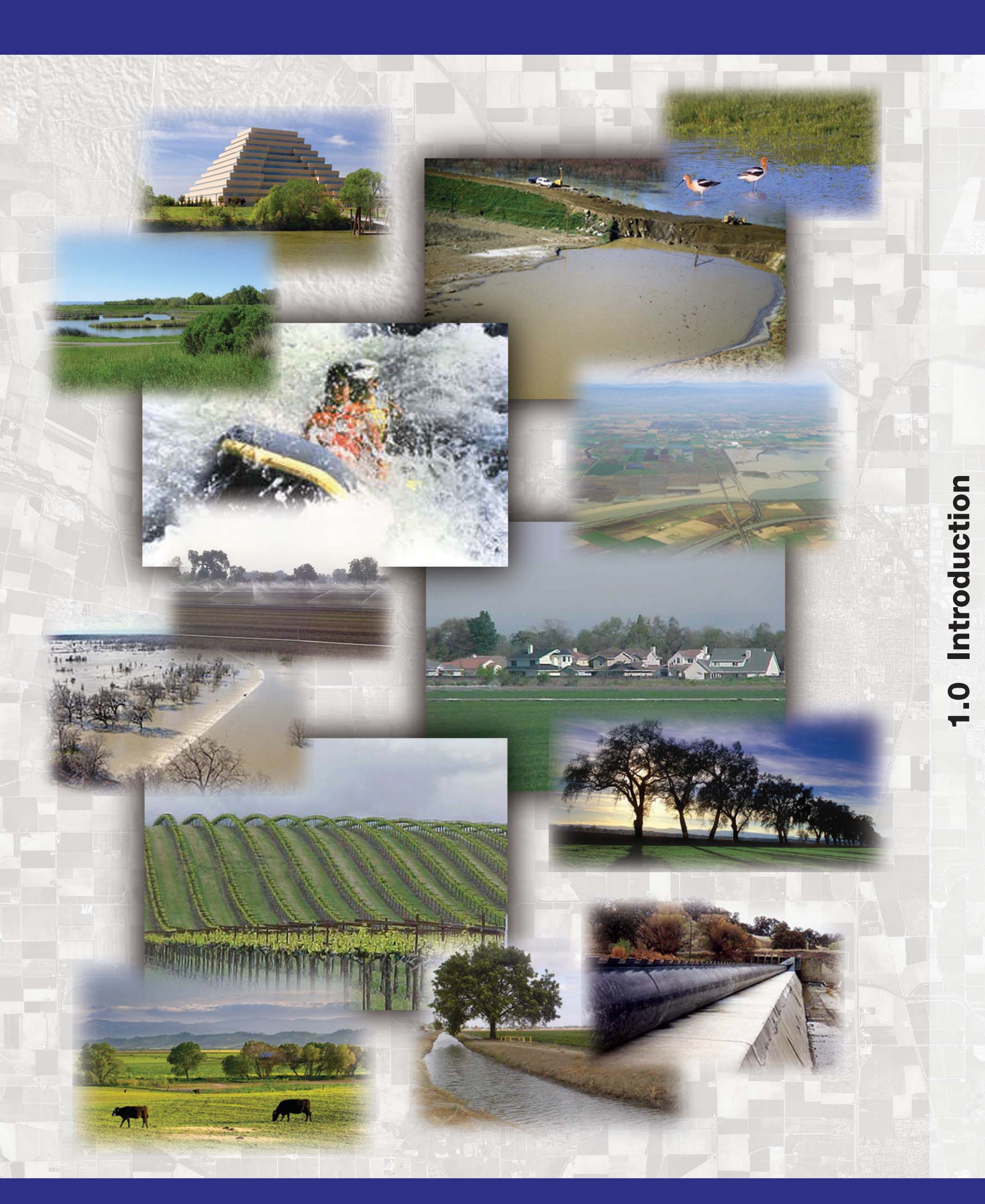
Sources of Information

Information used for this IRWMP include existing published reports and other documents, WRA member agency staff, and outside experts (see Section 8 “References”, and references cited at the end of each chapter in Appendix A).

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1.0 Introduction

1.0 Introduction

This Integrated Regional Water Management Plan (IRWMP) is consistent with the Integrated Regional Management Program Grant Guidelines issued by the State Water Resources Control Board (SWRCB) and the California Department of Water Resources (DWR). Summarized below are the eight sections and the appendices included in this IRWMP:

- **Section 1: Introduction.** This section provides information relevant to this IRWMP.
- **Section 2: Goals and Objectives.** This section identifies the goals and objectives of this IRWMP and how it relates to the County General Plan Update and to statewide priorities and water management strategies.
- **Section 3: Plan Development.** This section outlines how the WRA developed this IRWMP, and addresses the regional coordination of water resource management planning efforts in adjacent regions, community and stakeholders outreach, and other relevant issues.
- **Section 4: Findings and Issues.** This section documents the findings and water resource management issues identified by the WRA.
- **Section 5: Potential Actions and Prioritization.** This section presents the potential foundational actions, individual actions by water resource management category, integrated actions, and the evaluation of actions based upon the objectives and issues identified by the WRA.
- **Section 6: Implementation Strategy.** This section outlines the implementation strategies for integrated water resource management actions.
- **Section 7: Action Program.** This section identifies the necessary tasks to implement the foundational and integrated action and reflects the results of attention devoted in some geographic subareas to prioritize and integrate potential actions.
- **Section 8: References.** This section lists the References cited in this IRWMP.
- **Appendices.** This IRWMP includes **Appendix A** through **Appendix F**. The information provided within the respective appendices is summarized below:

Appendix A: Background Data and Information – This document was prepared to serve as a resource reference for the WRA to summarize findings and issues and to formulate potential actions.

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Appendix B: Alternate Prioritization Method – This documents was prepared to use in prioritizing potential individual and integrated actions; however, was ultimately not applied. It is included with this IRWMP for potential use and application as actions become better defined.

Appendix C: Water-Related Policy Options for the Yolo County General Plan – This documents presents draft policy options that reflect the WRA’s effort to integrate water and land use since this IRWMP and the General Plan Update were being performed concurrently.

Appendix D: Community Workshops Outcomes – This material summarizes the information presented and input received at the three public workshops held by the WRA during the preparation of this IRWMP.

Appendix E: Stakeholder Meetings Outcomes – This material presents a summary of the meetings that were held with stakeholders in various geographic regions of Yolo County during the preparation of this IRWMP. It provides the results of two public meetings held by the City of West Sacramento and Yolo County to refine the Sacramento River West Bank Integrated Project subsequent to preparing the draft IRWMP in 2006.

Appendix F: Comments / Responses Draft IRWMP, October 2006 – This appendix includes the written comments submitted to the WRA and the responses to those comments.

1.1 Background

This IRWMP was prepared by the WRA. The WRA is a non-profit, mutual benefit corporation and consortium of entities that are authorized to provide a regional forum to coordinate and facilitate solutions to water management issues in Yolo County. A draft IRWMP was prepared in October 2006, and made available for public review and comment.

1.2 Purpose of the IRWMP

This IRWMP provides a wide-ranging vision for the future water management in Yolo County, consistent with the intent of Proposition 50, Chapter 8, passed by the California voters in November 2002, and administered by DWR and the State Water Board. High-priority water management actions including projects, programs, or policies are identified to improve water management in Yolo County. This IRWMP describes integrated water management actions that combine elements of five water management categories:

1. Water Supply and Drought Preparedness
2. Water Quality
3. Flood Management and Storm Drainage

Integrated Regional Water Management Plan April 2007

- 4. Aquatic and Riparian Ecosystem Enhancement
- 5. Recreation

This IRWMP is a living document and will require periodic updates to remain useful as a water resource management planning tool. As work is completed and the understanding of resources issues and opportunities becomes better defined and collaboration and relationships within the County and within neighboring regions matures, this IRWMP will need to be updated (see Section 6 “ Implementation Strategy”).

1.3 Participating Agencies

This IRWMP applies to Yolo County. The member agencies of WRA represent major water management interests in Yolo County. The jurisdictions of the member agencies are identified in **Figure 1-1**.

The WRA was organized in 1993, to coordinate the implementation of the Water Resources Management Program, as proposed in the 1992 Yolo County Water Plan Update. The WRA has nine members that include urban and agricultural water purveyors and Yolo County. The water management responsibilities of each WRA member are presented in **Table 1-1**.

Table 1-1 – WRA Member Agencies Responsibilities Related to Water of the WRA Member Agencies	
WRA Member Agency	Responsibilities Related to Water
City of Davis	Operates and maintains municipal water and wastewater treatment facilities and storm drainage facilities.
Dunnigan Water District	Operates and maintains agricultural water distribution facilities.
Reclamation District 2035	Maintains levees and operates and maintains agricultural water delivery systems and agricultural and storm drainage facilities.
University of California, Davis	Operates and maintains municipal and agricultural water facilities, wastewater treatment facilities, and storm drainage facilities.
City of Winters	Operates and maintains municipal water and wastewater treatment facilities and storm drainage facilities.
City of West Sacramento	Operates and maintains municipal water and wastewater treatment facilities and storm drainage facilities.
City of Woodland	Operates and maintains municipal water and wastewater treatment facilities and storm drainage facilities.
Yolo County	Provides land use planning, support for water and wastewater service, levee maintenance, flood management, drainage, implementation of the Cache Creek Resource Management Plan and other aquatic and riparian ecosystem enhancement programs, and implementation of water-related recreation programs.
Yolo County Flood Control & Water Conservation District	Operates and maintains water storage, agricultural water delivery systems, and agricultural and storm drainage facilities.

Jurisdictional Boundaries of Member Agencies

Legend

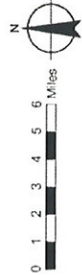


Reclamation District (RD)

Note: County Service Areas and Community Service Districts are not shown.

UC Davis WRA Member Agency

Note: Yolo County is a WRA member.



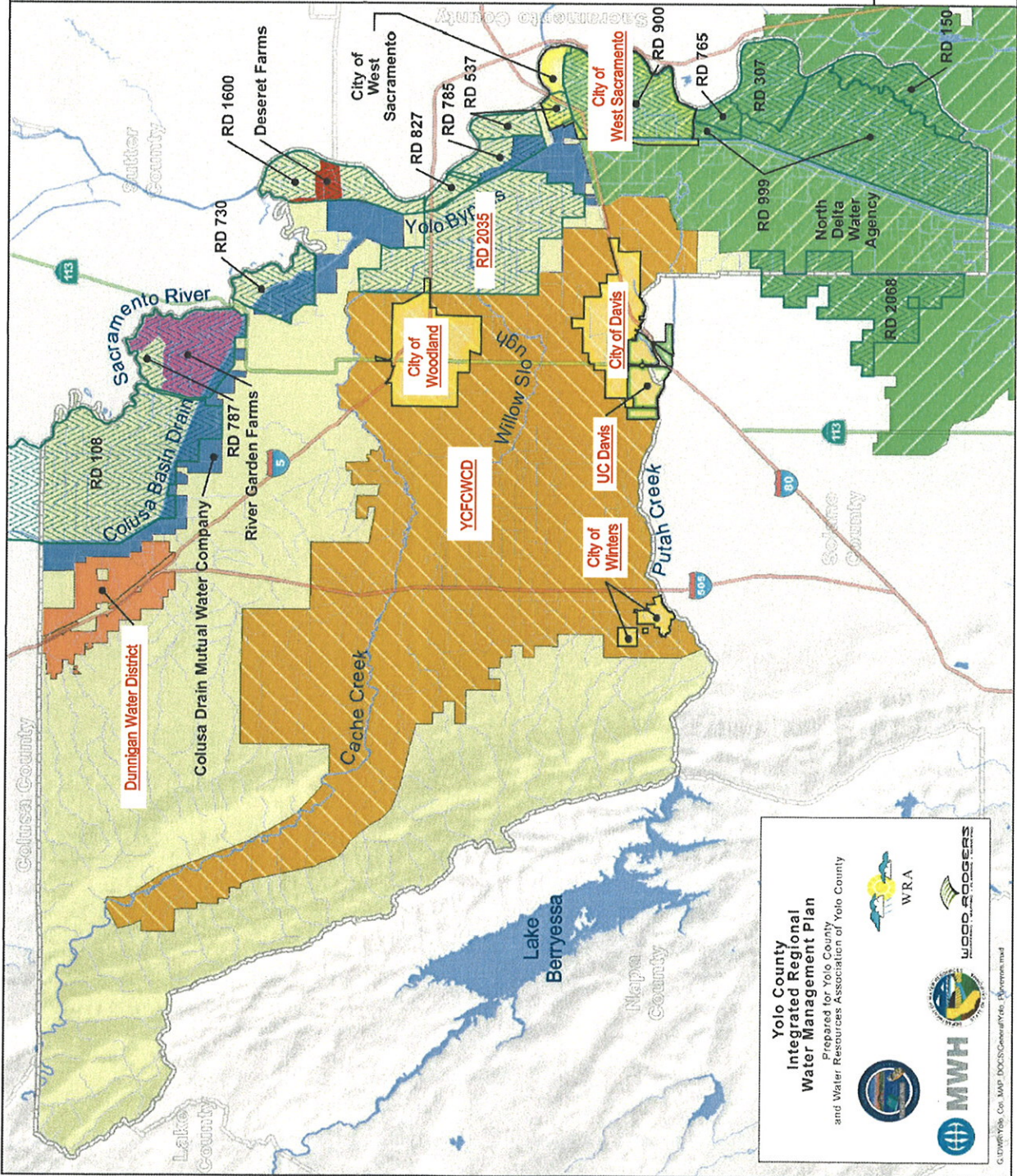
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Boundary Data Compiled by
Department of Water Resources -
Central District

Production Date - February, 2005

Yolo Co. Boundary - Yolo Co. GIS

Map Prepared by:



**Yolo County
Integrated Regional
Water Management Plan**

Prepared for Yolo County
and Water Resources Association of Yolo County

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WOOD RODGERS
MWH

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FIGURE 1-1

I n t e g r a t e d R e g i o n a l W a t e r M a n a g e m e n t P l a n
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The WRA is governed by a Board of Directors with an elected representative from each of the member agencies. Each member also has a designated Board alternate. The Board of Directors meets quarterly, or as needed, to review or take action on time-sensitive and high-priority matters. The Board reviews WRA activities related to progress and budget, and provides a forum to coordinate water-related activities and to inform member agencies of activities underway within the Yolo County.

The WRA’s Technical Committee (TC) prepared this IRWMP. The TC is made up of senior staff from each of the member agencies who met biweekly, or as required, to complete this IRWMP, and to address other specific activities requested by the WRA Board of Directors. The TC reviewed member activities, coordinated ongoing and planned collaborative efforts, and considered other water-related activities throughout the region, coordinating with federal and state agencies and neighboring regions. The TC recommends actions and other substantive information for the WRA’s Board to consider and approve.

The planning process outlined in this document is structured for implementation, recognizing the unique characteristics of the geographic subareas in Yolo County. The planning process and, in particular, the public involvement and outreach components, are essential to facilitate future implementation of priority projects, following compliance with the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA). WRA member agencies are involved both as agencies that plan the IRWMP and as agencies that plan and implement their own independent water resource management activities—both processes are moving forward concurrently.

This IRWMP, however, recognizes the accomplishments and value of organizations that are not necessarily WRA member agencies, but are, nevertheless, a tremendous resource and it would be beneficial to the community if they became involved with the WRA in coordinating activities. Section 6.0 contains a description of the implementation strategy and the need for effective collaboration and coordination not only among the WRA member agencies, but non-member agencies and organizations as well.

Member agencies are performing and will continue to perform work that complements and supports this IRWMP, and vice-versa. For example, urban and groundwater management plans are essential to this IRWMP. Member agencies are updating these plans separately from but in coordination with this IRWMP process. Examples include work by the cities of Davis and Woodland to update their urban water management plans in compliance with California Water Code (CWC) 10610, and by the YCFCWCD and Dunnigan Water District to update groundwater management plans in compliance with CWC 10753.7.

Another example is the Environmental Impact Report being prepared for the cities of Davis and Woodland and UC Davis, to obtain a supplemental surface water supply from the Sacramento River. The work will be performed through a partnership between the respective entities above and the YCFCWCD. WRA envisions that this type of collaboration will implement many of the projects identified in this IRWMP. Partnerships may develop among member agencies,

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with agencies in neighboring regions, or with federal or state agencies. The two-track process is illustrated in **Figure 1-2**.

In the past, water agencies and private parties, individually obtained and developed water supplies to meet the needs of Yolo County residents. However, members of the WRA recognize that managing existing water supplies, from the standpoint of quantity, quality, and environmental considerations, can no longer be done individually. They must work together to achieve the best solutions to challenges facing water users in Yolo County. A collaborative effort within this region and neighboring regions is essential to manage existing resources and, even more importantly, to embark on new projects that can enhance the reliable water supply and quality. WRA members recognize the importance of investigating issues and opportunities and projects at the local level before reaching out to neighboring regions. For that reason, the WRA deliberately defined the IRWMP region using the Yolo County boundary. This decision was made with the understanding that detailed formulation and implementation of projects may involve member agencies working in partnership with agencies from other neighboring regions.

1.4 Description of Region

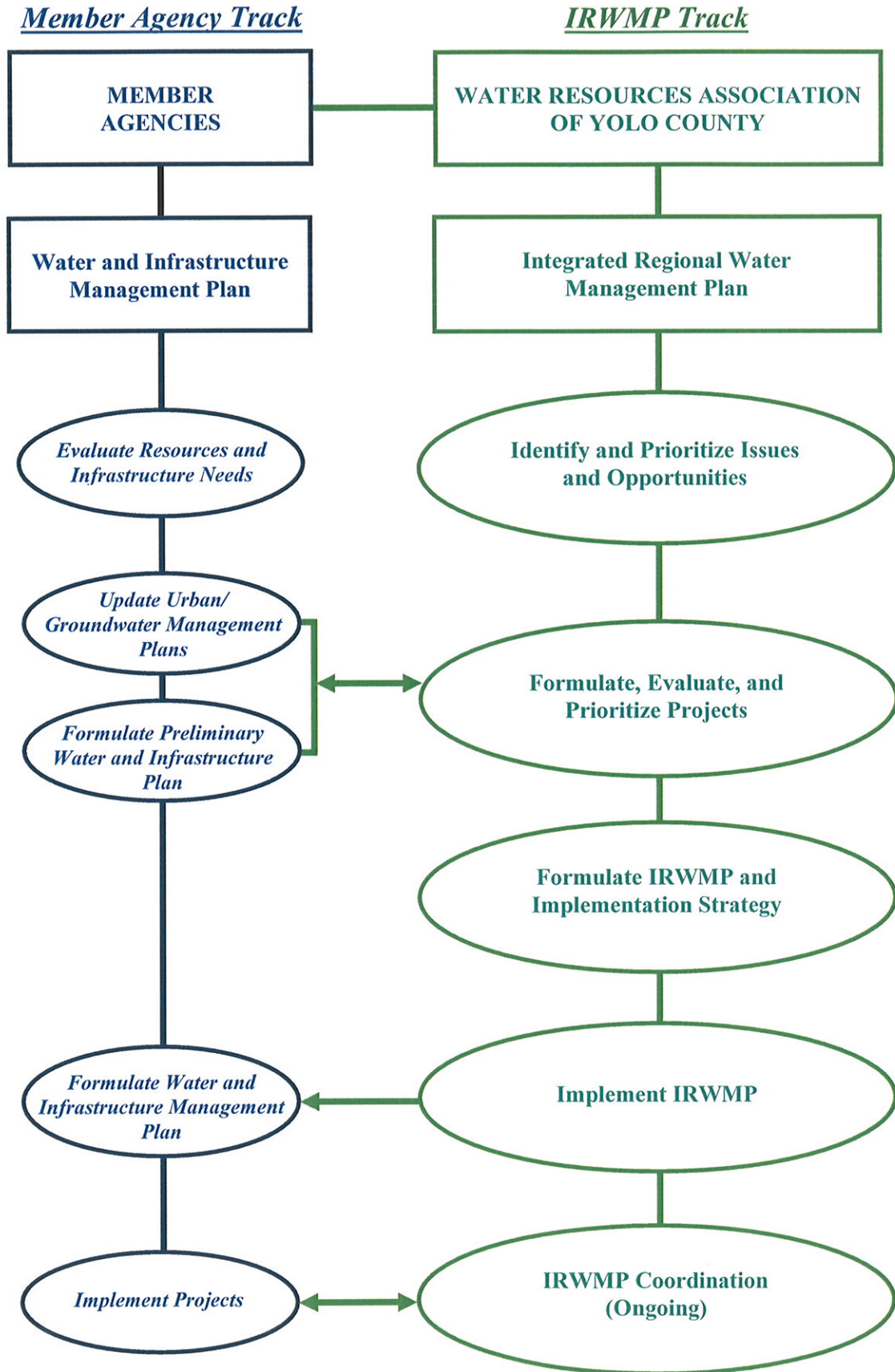
1.4.1 Overview

Yolo County has a unique setting, as illustrated on **Figure 1-1**, with wide-ranging water and environmental resources, which provides the County with many opportunities and partnerships for resource management. The neighboring regions and linkage or resource relationship are shown in **Table 1-2**.

Table 1-2 – Surface Water Resources Shared with Neighboring Regions	
Neighboring Region	Surface Water Resource Connection
Lake County	Cache Creek
Sacramento Valley	Sacramento River and Colusa Basin Drain
City of Sacramento and Surrounding Area	Sacramento River and Yolo Bypass
Solano County	Putah Creek

FIGURE 1-2

IRWMP – PLAN FORMULATION AND IMPLEMENTATION SCHEMATIC



Source: WRA IRWMP Proposition 50 Grant Application
May 12, 2005

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This section includes a summary description of the water resources of Yolo County. Additional details on the physical, environmental, institutional, and legal aspects of Yolo County water resources are presented in the Background Data and Information Appendix (**Appendix A**). Appendix A includes data from existing reports, studies, programs, investigations, and planning efforts and forms the detailed factual foundation for this IRWMP planning effort.

Appendix A includes the following main topics:

- § **Overview of IRWMP Effort:** Background information regarding integrated water management planning in the county.
- § **Geology, Hydrogeology, and Groundwater:** Geologic history (providing an understanding of the geological environment and how it has influenced the formation of aquifers in the area today), hydrogeologic and groundwater quality information, and the delineation of groundwater subbasins.
- § **Soils:** Soils found within Yolo County and their characteristics, mostly derived from the soil survey of Yolo County conducted by the Natural Resources Conservation Service (NRCS).
- § **Hydrology:** A general understanding of the surface water resources within or potentially available to Yolo County to facilitate formulating programs and projects that can help meet and sustain water needs.
- § **Land Use, Water Use, and Water Supplies:** A countywide land use summary, countywide water use summary, description of water management, water use, and supply characteristics of various water-related administrative bodies.
- § **Aquatic and Riparian Ecosystems:** The aquatic and riparian ecosystems of Yolo County, recognizing that the County’s water resources are also used for agricultural, municipal, and recreational purposes.
- § **California Water Rights Pertaining to Water Resource Management:** A brief overview of water law, rights, and institutional frameworks under which surface water and groundwater resources are managed and highlights of elements for water-related administrative bodies in Yolo County.

1.4.2 Groundwater Supplies

Aquifers beneath Yolo County are essentially contained within two stratigraphic units: (1) the older thick alluvial and river sediments of the Tehama formation, and (2) the younger sediments of the Red Bluff formation, floodplain deposits, and stream channel deposits that overlie the Tehama formation.

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Aquifers are unconfined near the surface and become increasingly confined with depth (California DWR 2003; Williamson *et al.* 1989). There are no regionally continuous barriers to vertical flow, but inter-bedded clays and silts create a cumulative impediment to vertical groundwater flow with increasing depth (California DWR 2003; Williamson *et al.* 1989). Older, deeper sediments also tend to be more compact and therefore less permeable than younger, shallower sediments (Bryan 1923).

The natural hydraulic gradient of groundwater (its slope and flow direction) is toward the east and south, roughly following the topographic incline. Groundwater pumping has had an impact on this gradient (Hull 1984; Bertoldi *et al.* 1991) by creating localized depressions in the water table and land subsidence beneath areas of more intensive groundwater pumping (D'Onofrio and Frame 2003).

Developing surface water has relieved much of the stress on aquifers beneath Yolo County (Quad Knopf 2002; West Yost & Associates 1994). Localized groundwater effects are still evident beneath areas dependent on groundwater as a primary water supply, such as beneath the City of Woodland, beneath the City of Davis and the UC Davis area, and beneath the Yolo-Zamora Water District.

The aquifers are recharged by runoff and groundwater from the east-facing foothills, by percolation of precipitation, and by infiltration of surface water. Surface water infiltration is provided by the creeks and streams that flow from the Coast Ranges into the County; from delivered and applied irrigation water; from Sacramento and Feather River flood waters diverted to the Yolo Bypass; from the Sacramento River; and from the Sacramento River Deep Water Ship Channel that extends south from West Sacramento.

The aquifers are either entirely within the Tehama formation or within a combination of the Quaternary alluvial sediments and the uppermost Tehama formation. Groundwater quantity and quality varies, depending on location within the County. For this reason, it is helpful to segment the County into groups, or groundwater subbasins, to better characterize groundwater conditions throughout the region. Developing an understanding at the subbasin level is particularly important for stakeholders and water managers responsible for management of groundwater resources within Yolo County.

The Yolo County Region is contained completely within the Sacramento Valley Groundwater Basin (Basin 5-21) as described by DWR Bulletin 118 - Update 2003 (California DWR 2003). Furthermore, Yolo County overlies portions of the Capay Valley (5-21.68), Colusa (5-21.52), Yolo (5-21.67) and Solano (5-21.66) subbasins as described in Bulletin 118. However, the groundwater basins delineated and presented in **Appendix A** differ from subbasins delineated in Bulletin 118. The subbasin boundaries in **Appendix A** more concisely characterize the groundwater hydrology of the county and better coincide with political boundaries under which water management occurs in Yolo County. The subbasin boundaries were developed with the support of the DWR, as well as Yolo County WRA member agencies, during the preparation of **Appendix A**.

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The six subbasins are:

1. Capay Valley
2. Buckeye Creek
3. Dunnigan Hills
4. West Yolo
5. East Yolo
6. Sacramento River

Characteristics of the groundwater subbasins are summarized in **Table 1-3**. The six subbasins are described in detail in **Appendix A**.

An overview of groundwater quality is also included in **Appendix A**. Further study of the groundwater quality and quantity may be required for specific projects.

Table 1-3 – Summary of Yolo County Groundwater Subbasin Characteristics					
Subbasin	Predominant Freshwater Bearing Sediments	Total Thickness	Primary Developed Land Use¹	Predominant Water Supply Mix	Comments
Capay Valley	Tehama Formation Flood Plain And Stream Channel Deposits	>1,000 feet	Agriculture	Surface water and groundwater	
Buckeye Creek	Tehama Formation Stream Channel Deposits	Unknown	Agriculture	Surface water and groundwater	Relatively few wells have been developed in this subbasin.
Dunnigan Hills	Tehama Formation Red Bluff Formation	Unknown	Agriculture	Surface water and groundwater	Wells are relatively less productive than wells tapping the Tehama elsewhere in the county.
West Yolo	Tehama Formation Flood Plain Deposits	Unknown	Agriculture and M&I	Surface water (relatively small amount ground-water usage)	

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Table 1-3 – Summary of Yolo County Groundwater Subbasin Characteristics

Subbasin	Predominant Freshwater Bearing Sediments	Total Thickness	Primary Developed Land Use¹	Predominant Water Supply Mix	Comments
East Yolo	Tehama Formation Stream Channel Deposits	>1,500 feet	Agriculture and M&I	Groundwater	Extensive pumping for domestic needs (Woodland, Davis, UC Davis) and some irrigation needs. Significant land subsidence (more than 1') has occurred.
Sacramento River	Tehama Formation Flood Plain Deposits	>2,500 feet	Agriculture and M&I	Surface Water	

¹M&I: municipal and industrial

1.4.3 Surface Water Resources

Most runoff that affects Yolo County, favorably and unfavorably, originates outside of the County. As defined by DWR, Yolo County is a small portion, 3.8% (1,034 square miles) of the large Sacramento Hydrologic Region or watershed, which covers 26,960 square miles of land.

The principal watersheds that affect Yolo County are briefly described below. A more detailed discussion of these watersheds, including descriptions of the drainage systems, flooding/flood management, water availability, water quality, and erosion and sedimentation for each watershed, is presented in **Appendix A** (Chapter 4).

Sacramento River

The Sacramento River system is a complex network of natural and man-made features that are operated to achieve established objectives for water supply, flood control, and environmental purposes. Operating the system has become more complex with time as the water demands for each purpose have changed and when supplies are short and competition for water has become more intense.

The Sacramento River flows along the entire length of the eastern boundary of Yolo County. Its flow and the availability of water are controlled almost entirely by conditions outside the County.

Yolo Bypass

From a flood hydrology standpoint, the Yolo Bypass is an integral part of the Sacramento River system and plays a major role in providing flood protection for the City of Sacramento. It is a

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component of the Sacramento River Flood Control Project that was constructed between 1917 and 1924. It consists of a 41-mile-long swath of agricultural land bounded by levees that are 7,000 to 16,000 feet apart and convey floodwater to the Sacramento-San Joaquin Delta near Rio Vista. An 8-mile segment along the western boundary of the Yolo Bypass immediately south of Putah Creek has no levee because ground elevations are high enough to contain floodwater within the Yolo Bypass, except during extremely large flood events. The major inflows to the Yolo Bypass are from the Sacramento River at the Fremont and Sacramento weirs. Other local tributaries include the Colusa Basin Drain (via the Knights Landing Ridge Cut), Cache Creek, Willow Slough, and Putah Creek

Colusa Basin Drain

The Colusa Basin Drain (Drain) watershed comprises nearly 1,620 square miles in the Sacramento Valley, and includes portions of Glenn, Colusa, and Yolo counties. The portion of the watershed in Yolo County is approximately 255 square miles. The Drain is a man-made channel designed to convey irrigation drainage to the Knights Landing outfall gates for discharge into the Sacramento River. There are 32 ephemeral streams that convey storm runoff to the Drain, seven of which originate in the Dunnigan Hills of Yolo County. Major concerns about the quality of water in the Drain and potentially the Sacramento River include temperature, turbidity, herbicides and pesticides, recirculation of irrigation tailwater, soil erosion and sedimentation.

Cache Creek

Under natural conditions, Cache Creek can be considered an ephemeral stream. The Cache Creek drainage system is divided into the Upper and Lower Cache Creek portions. The Upper Cache Creek portion of the system includes the watershed upstream of the YCFCWCD's Capay Diversion Dam. The Lower Cache Creek portion of the system extends from the Capay Diversion Dam downstream to and including the Cache Creek Settling Basin. For hydrologic purposes, however, the downstream limit of the Lower Cache Creek portion of the system will be considered at Interstate 5 or Yolo. The total Cache Creek drainage system, upstream of Interstate 5, encompasses 1,139 square miles, with the drainage area above Capay Diversion Dam comprising 1,044 square miles.

Willow Slough

The Willow Slough watershed drains most of the central part of Yolo County between Cache Creek and Putah Creek. Natural levees that formed through deposition of sediment along the valley floor reaches of Cache and Putah creeks cause local runoff to flow away from the main creek channels and to enter a complex network of sloughs and small drainage channels. These channels flow eastward and eventually consolidate into the Willow Slough. Willow Slough, just east of Highway 113, discharges into the Willow Slough Bypass, which is part of the Sacramento River Federal-State Flood Control Project. The Willow Slough Bypass discharges directly into the Yolo Bypass.

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Putah Creek

The Putah Creek watershed encompasses approximately 710 square miles and extends from an elevation of 4,700 feet at Cobb Mountain in Lake County southeast for a distance of about 50 miles to the Yolo Bypass, at an elevation a few feet above sea level (Thomasson *et al.* 1960). Approximately 600 square miles of the watershed are upstream of Monticello Dam, located seven miles west of Winters. Monticello Dam was completed in 1957 by the U. S. Bureau of Reclamation and impounds Lake Berryessa, which has a capacity of 1.6 million acre-feet. Operations and maintenance of the project is performed by the Bureau of Reclamation. Water released from Lake Berryessa flows down Putah Creek to the Putah Diversion Dam, three miles west of Winters, where water is diverted into Putah South Canal for delivery to agricultural and municipal users in Solano and southern Yolo County. The Putah Diversion Dam impounds Lake Solano. The tributary drainage area for the “inter-dam” reach is 38 square miles, and only one tributary of any significance – Dry Creek – enters Putah Creek between the Putah Diversion Dam and the Yolo Bypass (Northwest Hydraulic Consultants 1998). Natural levees, deposited by the creek as it flowed across its alluvial fan toward the center of the Sacramento Valley, cause lands along both sides of lower Putah Creek to drain away from the creek.

1.4.4 Surface Water Supplies

Yolo County relies on many different water supply sources, such as the Sacramento River, Cache Creek, and groundwater. There are also many different water-related administrative bodies within Yolo County, each of which has its own water supply sources (**Table 1-4**). Details of the region’s surface water supplies are discussed in **Appendix A** (Chapter 5).

Table 1-4 – Water-Related Administrative Bodies and Sources of Supply											
Administrative Bodies that Deliver Water	Administrative Bodies’ Sources of Supply										
	Cache Creek	Willow Slough	Putah Creek	Putah South Canal	Yolo Bypass	Other Streams	Colusa Basin Drain	Sacramen to River	Tehama Colusa Canal	Ground-water	Shallow/ Intermediate/ Deep Wells ¹
Cities and Universities											
City of Davis										X	85% Inter.; 15% Deep
City of West Sacramento								X		X ²	
City of Winters			X ³							X	
City of Woodland										X	
UC Davis (Drinking Water)										X	100% Deep
UC Davis (Utility Water)										X	100% Shallow/ Inter.
UC Davis (Field Teaching and Research)	X ⁴			X						X	100% Shallow/Inter.
Community Service Districts											
Cacheville CSD										X	
Esparto CSD										X	
Knights Landing CSD										X	
Madison CSD										X	

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Table 1-4 – Water-Related Administrative Bodies and Sources of Supply												
Administrative Bodies that Deliver Water	Administrative Bodies’ Sources of Supply											
	Cache Creek	Willow Slough	Putah Creek	Putah South Canal	Yolo Bypass	Other Streams	Colusa Basin Drain	Sacramen to River	Tehama Colusa Canal	Ground-water	Shallow/Intermediate/Deep Wells ¹	
County Service Areas												
El Macero CSA											X	
North Davis Meadows CSA											X	
Wildwing CSA											X	
Willowbank CSA											X	
Special District												
Yolo County FC&WCD	X											
Mutual Water Company												
Colusa Drain Mutual Water Company							X					
Reclamation Districts												
RD 108							X	X			X ⁵	
RD 150						X						
RD 787 (River Garden Farms)							X	X			X	
RD 999						X		X				
RD 2035 (Conaway Conservancy)	X	X						X			X	
RD 2068						X						
Water Districts												
Dunnigan Water District									X			
Yolo-Zamora Water District ⁶												
County Water District												
Colusa County Water District ⁷									X			
Water Users’ Association												
Rumsey Water Users’ Association	X											
Notes:												
¹ Shallow Wells (0’-300’), Intermediate Wells (300’-600’), Deep Wells (>700’).						⁴ Cache Creek water provided to UC Davis from YCFCWCD.						
² Available stand-by wells.						⁵ All in Colusa County.						
³ Putah Creek Underflow Rights.						⁶ Yolo-Zamora WD does not currently deliver water.						
						⁷ Only a small part of the district is in Yolo County.						

1.4.5 Ecological Processes and Environmental Resources

A description of ecological processes and environmental resources within the region is provided in **Appendix A** (Chapter 6).

1.4.6 Land Use

Yolo County is unique in California: The County has a rich diversity of land use, water use, and water supplies. Agriculture, growing cities, and various flora and fauna exist throughout the County and they, together with public policy committed to agriculture and open space, are largely responsible for this diverse makeup.

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The Yolo County region is approximately 653,000 acres (**Table 1-5**).

Table 1-5 – Yolo County Land Use Summary	
General Land Use Category	Acres (1997)
Yolo County – Total Acres	653,370
Agriculture	366,058
Urban	30,437
Native (Non-cultivated Vegetation)	238,479
Riparian Settings	6,439
Other Water Bodies	9,261
Lands Not Surveyed	2,696

Data Source: 1997 DWR Land Use Survey and YCFCWCD Engineer’s 2001 Annual Report (in: Borcalli & Associates, Inc., 2001)

As noted in **Table 1-5**, over half of Yolo County’s acreage (approximately 366,000 acres or 56%) is in agriculture. According to a 1997 U.S. Department of Agriculture report, Yolo County has 923 farms averaging 581 acres, with 14% of the farms over 1,000 acres in size. Common crops include truck crops such as tomatoes and pasture such as alfalfa and hay. The *Yolo County General Plan Agricultural Element Policy Document and Background Report* confirms that agriculture has always been an important part of Yolo County’s history, culture, and economy. The County made efforts in its general plan to conserve and preserve agricultural land by enacting ordinances limiting the use of agricultural lands, creating minimum parcel sizes, and implementing the Williamson Act (which enables local governments to enter into contracts with private landowners to restrict specific parcels of land to agricultural or related open space use). Strong community support and UC Davis (which conducts much of Northern California’s research on agriculture) have also helped the County preserve its agricultural lands.

Approximately 30,000 acres (5%) of the land is classified as urban. The majority of this acreage is located within the four incorporated cities of Davis, West Sacramento, Winters, and Woodland and UC Davis. The remaining urban areas are spread throughout the County in the unincorporated communities of Capay, Clarksburg, Dunnigan, Esparto, Guinda, Knights Landing, Madison, Rumsey, Yolo, and Zamora.

Approximately 254,000 acres (38%) is characterized by native vegetation, riparian settings, and other water bodies.

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1.4.7 Demographics

Population

Population in the region is increasingly dominated by the incorporated cities. According to the California Department of Finance, between 1987, when West Sacramento became an incorporated city, and April 2000, the population of the four incorporated cities increased from 107,500 to 147,199 (**Table 1-6**). The population of unincorporated areas in the county has grown much less, from 18,950 in 1987 to 21,461 in April 2000. During this time, the total county population increased from 126,450 in 1987 to 168,660. According to projections developed by the Sacramento Area Council of Governments (SACOG) the total Yolo County population is projected to grow significantly, to 266,325 by 2025.

Table 1-6 – Yolo County Population by Area			
Area	Population (April 2000)	% Change from 1990	% Change from 1987
Yolo County – Total Population	168,660	19.4	33.4
City of Davis	60,308	28.8	36.9
City of Woodland	49,151	21.7	
City of West Sacramento	31,615	7.9	
City of Winters	6,125	NA	
Unincorporated	21,461	NA	13.3

Data Source: California Department of Finance 2002.

Employment

According to the U.S. Census Bureau (2000 Census Data), the total number of jobs increased by a moderate 16% from 1990 to 2000, primarily in the management and professional fields (**Table 1-7**).

Table 1-7 – Yolo County Employment Summary		
Employment Category	Persons Employed that are 16 Years and Older	
	1990	2000
Yolo County – Total Employed	66,260	76,648
Management, professional, and related occupations	25,754	31,725
Service occupations	8,521	10,860
Sales and office occupations	16,220	18,226
Farming, fishing, and forestry occupations	3,278	1,979
Construction, extraction, and maintenance occupations	3,967	5,479
Production, transportation, material moving occupations	8,520	8,379

Data Source: U.S. Census Bureau - 2000 Census.

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Housing

Table 1-8 presents a summary of housing unit structures for Yolo County. Between 1990 and 2000 the number of housing units increased about 16%, enough to keep pace with population growth. The greatest increases were single family residences and multiple family residences with five or more units. There was a smaller percentage increase in mobile homes, and negligible change in the number of multiple family residences with two to four units.

Table 1-8 - Yolo County Housing Summary	
Housing Unit Structures	Number of Housing Units (April 2000)
Yolo County - Total Dwelling Units	61,587
Single Family Unit	38,872
2 to 4 Units	4,429
5 to 19 Units	4,957
20 or more Units	9,718
Mobile Homes	3,426
Boats, RV, Van, etc.	185

Data Source: California Department of Finance 2002.

Income

According to the U.S. Census Bureau 2000 Census Data (in 1999 dollars), the median household income \$40,769, while the 1990 U.S. Census (in 1989 dollars) reported a median income of \$28,866 for the region. This shows an average annual increase of approximately 41% between 1990 and 2000.

1.4.8 Social Values

Open space and preservation of farmland have been and will continue to be high-priority social values in developing public policy affecting land use, as well as education and continued support for Native American traditions.

Equally important are efforts to develop opportunities for environmental enhancement, as illustrated in the work of the Yolo Basin Foundation in the Yolo Bypass, the Putah Creek Council on Putah Creek, and the on-going effort to develop a Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) for Yolo County.

1.5 Environmental Compliance Process

A CEQA compliance document (i.e., EIR or Negative Declaration) does not need to be prepared for this IRWMP, because it is a planning study that does not have a legally binding effect on later activities (Public Resources Code 21102, CEQA Guidelines 15262). This

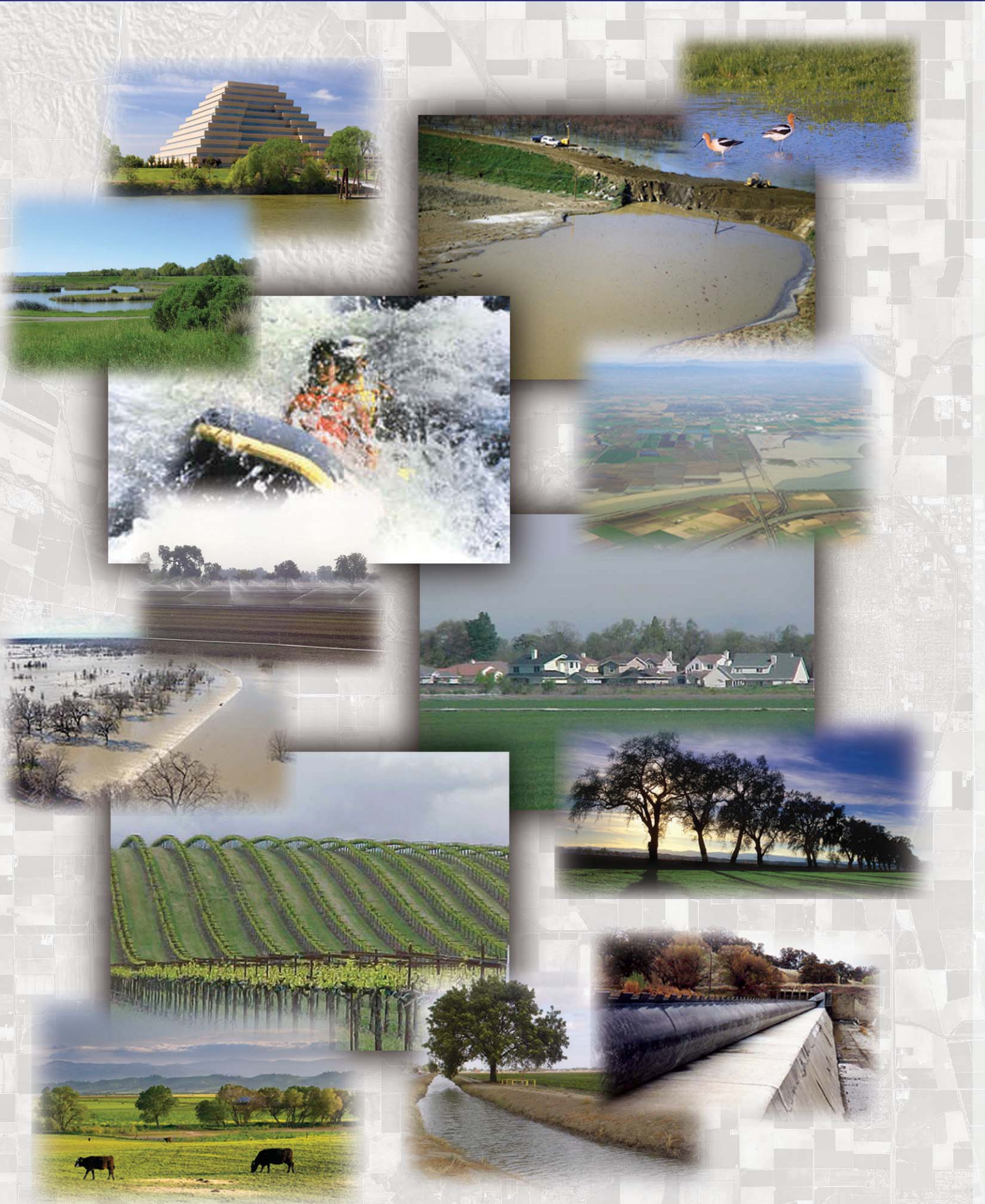
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IRWMP identifies and prioritizes potential future actions, but does not commit any agency to any actions without additional design and analysis before approval.

Potential actions identified in this IRWMP may be subject to CEQA upon implementation. Actions may also be subject to other environmental laws and regulations, including but not limited to the Clean Water Act, the Endangered Species Act, the California Fish and Game Code, and county and city ordinances. The general compliance process for implementation of actions identified in this IRWMP is outlined in Section 6 “Implementation Strategy.”

1.6 IRWMP Adoption

Prior to its completion, this IRWMP was presented to the councils and boards of the WRA member agencies for formal adoption. Adoption by all nine member agencies was requested for finalization and adoption of this IRWMP. The signatories to this IRWMP are on the Plan Adoption page at the front of this document.



2.0 Goals and Objectives

2.0 Goals and Objectives

This section outlines the goals and objectives formulated by the WRA for the Yolo County IRWMP. It presents the statewide priorities established by DWR and the State Water Resources Control Board (SWRCB) that this IRWMP is aiming to meet, as well as water management strategies suggested in the Proposition 50 Guidelines and water resource management categories selected by the WRA to organize findings, issues, and actions.

2.1 Overview

The goals and objectives for water management have been developed through a variety of countywide planning efforts, including the *Yolo County Water Plan – 1984* (Borcalli, Ensign and Buckley, 1984) and the *Yolo County Water Plan Update – 1992* (Borcalli & Associates, Inc., 1992). In addition, the Memorandum of Understanding that formed the WRA and the WRA bylaws include statements of purpose and powers that are effectively goals for water resource management in Yolo County.

The WRA will coordinate with land use planning agencies to integrate water resource planning and land use planning activities (see Objective 5 below). One of the ways in which the WRA is achieving this objective is by coordinating this IRWMP process with Yolo County’s General Plan Update process. For this purpose, the WRA developed suggested water management policies for the General Plan. These potential policies are suggestions only and are not binding on any agency in this form. The County may choose to use some suggested policies, may modify specific policies and include them, or may choose not to include any of the suggestions. The suggested policies are appended to this IRWMP (**Appendix C.**, “Water-Related Policy Options for the Yolo County General Plan”). Similarly, objectives for water-related policies were developed for the General Plan that is taking place concurrently with development of this IRWMP. These objectives were developed for the respective water management categories and are included herein as well.

Preliminary information from the General Plan update was used to generate some of the assumptions in this IRWMP about future conditions in Yolo County. In particular, future water demand as referenced in the potential actions and development patterns used in this IRWMP, were based upon preliminary results of the Yolo County General Plan Update.

2.1.1 Goals

The goals of this IRWMP are identified as follows:

- Ensure an adequate water supply – both in quantity and quality – for the residents of Yolo County, present and future, in a manner that is efficient, economical, and environmentally beneficial.

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- Ensure high quality surface water and groundwater resources throughout Yolo County on a sustainable basis to serve the needs of all beneficial uses, including urban, agricultural, environmental, and recreational uses.
- Reduce the risk to the people and property of Yolo County from hazards associated with storm runoff and flooding.
- Enhance, improve, and maintain aquatic and riparian ecosystems and aquatic biodiversity throughout the county.
- Provide superior water-related recreational opportunities for Yolo County's growing population.

2.1.2 Objectives

The objectives of this IRWMP are identified as follows:

1. Coordinate and conjunctively manage surface water and groundwater supplies to avoid the potential adverse impacts from surface water supply development and use and from groundwater extraction (e.g., water quality degradation, environmental deterioration, and land subsidence).
2. Formulate a comprehensive water management, conservation, and reuse program for municipal, industrial, and agricultural waters users.
3. Provide a mechanism or process that facilitates the rational treatment of proposals for importing water, for the intra-county transfer of water, and for the export of water.
4. Ensure open and frequent communication with the public.
5. Integrate water resource planning and land use planning.
6. Maximize the extent to which priority projects help meet statewide priorities.
7. Assist disadvantaged communities with basic infrastructure improvements.
8. Help meet Total Maximum Daily Load (TMDL) being developed for mercury in the Cache Creek watershed.
9. Enhance the aquatic and riparian environment.
10. Use recycled water to the maximum extent possible.

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11. Identify measures to be implemented to reduce point-source and non-point source pollution.
12. Comply with applicable water discharge requirements.
13. Provide recreational opportunities that balance public investment interests and consideration of effects upon private property owners
14. Provide adequate storm drainage and flood control, consistent with recommendations of the State’s Floodplain Management Task Force.

2.2 Statewide Priorities

This IRWMP meets statewide priorities, established by the DWR and SWRCB. These statewide priorities are:

- Reduce conflict between water users or resolve water rights disputes, including interregional water rights issues.
- Implement TMDLs that are established or under development.
- Implement Regional Water Quality Control Board (RWQCB) Watershed Management Initiative Chapters, plans, and policies.
- Implement the SWRCB’s Non-point Source Pollution Plan.
- Implement as applicable, the Delta Vision and Delta management Plan, and assist in meeting Delta Water Quality Objectives.
- Implement recommendations of the Floodplain Management Task Force, Desalination Task Force, Recycling Task Force, or State Species Recovery Plan.
- Address environmental justice concerns.
- Assist in achieving one or more goals of the CALFED Bay-Delta Program.

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Section 5 describes in detail how the statewide priorities were used to evaluate potential actions for each of nine “integrated actions” (described in detail in Section 5.4) of this plan, as well as 18 additional stand-alone potential actions. Section 5.5.3 of this IRWMP discusses how statewide priorities were used to evaluate *all* potential actions.

2.3 Water Management Strategies and Water Resource Management Categories

To achieve the objectives of its IRWMP the WRA considered several water management strategies suggested in the Proposition 50 Guidelines. These strategies are listed in **Table 2-1**.

Table 2-1 – Water Management Strategies Considered by the WRA to Meet IRWMP Objectives	
• Conjunctive Use	• Surface Storage
• Ecosystem Restoration*	• Water and Wastewater Treatment
• Environmental and Habitat Protection and Improvement*	• Water Conservation*
• Flood Management*	• Water Quality Protection and Improvement*
• Groundwater Management*	• Water Recycling*
• Imported Water	• Water Supply Reliability*
• Land Use Planning	• Water Transfers
• Non-Point Source Pollution Control	• Watershed Planning
• Recreation and Public Access*	• Wetlands Enhancement and Creation*
• Storm Water Capture and Management*	

*These water management strategies must be considered to meet the minimum IRWMP Standards pursuant to CWC §§ 79562.5 and 79564.

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The WRA organized the water management strategies into the five following Water Resource Management Categories.

1. Water supply and Drought Preparedness
2. Water Quality (Surface Water and Groundwater)
3. Flood Management and Storm Drainage
4. Aquatic and Riparian Ecosystem Enhancement
5. Recreation

Table 2-2 shows the relationship between individual Water Management Strategies and the five Water Resource Management Categories. These five water resource management categories provide the framework for developing this IRWMP. Specific objectives were developed by the WRA for each category and are presented below. These objectives, except for those presented for recreation, are incorporated as water-related policies in the County’s General Plan, which is currently being updated. The respective categories are used throughout the development of this IRWMP to identify and organize findings and issues, from which potential actions are identified and integrated. Specific objectives were developed for each of the water resource management categories. These objectives are presented below under the respective categories.

Water Supply and Drought Preparedness

Objectives

- Provide reliable and sustainable surface water from a variety of sources sufficient to serve urban, agricultural, environmental, and recreational uses (as planned by Yolo County’s water purveyors and consistent with this IRWMP) in normal, above normal, and prolonged drought periods, which is protective of natural resources and surface water flows.
- Manage Yolo County’s groundwater resources on a sustainable yield basis that provides water purveyors and individual users with reliable, high quality groundwater to serve urban, agricultural, environmental, and other uses during normal, above normal, and prolonged drought periods.
- Develop conjunctive use and groundwater protection programs within the next 10 years, consistent with this IRWMP and the needs of water purveyors, which maximizes the efficiency, sustainability, and value of Yolo County’s surface and groundwater.

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Table 2-2 – Relationship Between Water Management Strategies Identified in the Integrated Regional Water Management Grant Program Guidelines and the Water Management Categories in this IRWMP

Water Management Categories	Water Management Strategies*																	
	Ecosystem Restoration*	Environment, and Habitat Protection and Improvement*	Flood Management*	Groundwater Management*	Imported Water	Land Use Planning	Non-Point Source Pollution Control	Recreation and Public Access*	Storm Water Capture and Management*	Surface Storage	Water and Wastewater Treatment	Water Conservation*	Water Quality Protection and Improvement*	Water Recycling*	Water Supply Reliability*	Water Transfers	Watershed Planning	Wetlands Enhancement and Creation*
Water Supply and Drought Preparedness				X	X	X				X		X		X	X	X	X	
Water Quality							X				X		X				X	
Flood Management and Storm Drainage			X			X		X									X	
Aquatic and Riparian Ecosystem Enhancement	X	X				X		X									X	X
Recreation						X		X									X	X

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- Work with the area's water purveyors within the next five years to develop state-of-the-art urban and agricultural water use efficiency programs that meet statewide guidelines and provide substantial and measurable water use reductions throughout Yolo County.

Water Quality

Objectives

- Meet state and federal standards for water quality protection in all surface and groundwater resources, working closely with water purveyors, landowners and businesses, citizens, and state, federal, and local agencies and non-profits.
- Develop continuous monitoring, management, and protection programs and institutional capacity to ensure that water quality continues to meet standards for surface water and groundwater sources.
- Work in a collaborative manner with state and federal agencies and both public and private water dischargers to ensure a fair and open process of achieving long-term countywide and regional water quality protection standards for point source and non-point source pollutants.

Flood Management and Storm Drainage

Objectives

- Meet agreed upon standards to reduce flood risk in all areas of Yolo County within 20 years, taking into consideration resource constraints and environmental impacts.
- Become a model area for flood risk reduction and management approaches that incorporate environmental protection and restoration efforts, and enhance recreational opportunities, while serving flood management needs.
- Develop innovative storm water management requirements, guidelines, and best practices within five years that enable Yolo County to meet state and federal permit requirements, as well as improving storm water runoff quality and reducing impacts to surface water resources.

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Aquatic and Riparian Ecosystem Enhancement

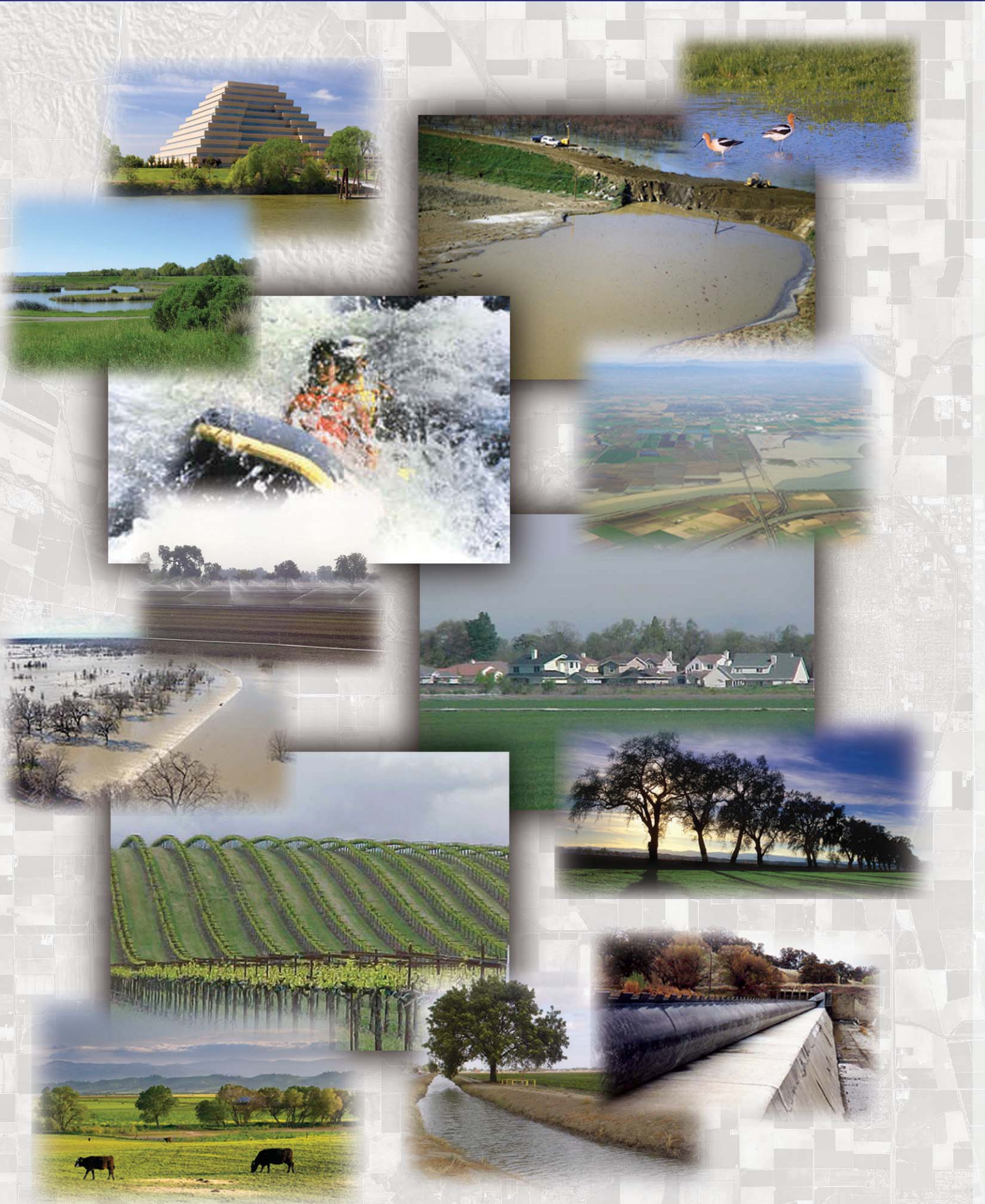
Objectives

- Establish priority aquatic and riparian habitat areas consistent with the emerging Yolo County NCCP/HCP, for enhancement within five years; and establish the necessary management and funding responses to meet NCCP/HCP restoration and protection goals.
- Become a model area for integrating agricultural production and habitat conservation through the use of sustainable agricultural water use practices and habitat enhancement incentives that are compatible with agricultural production.
- Utilize a variety of tools (such as the land development and permitting process, state and federal grants, and university resources) to achieve a sustainable and effective monitoring, management, and reporting process for priority aquatic and riparian habitats in Yolo County within 10 years.

Recreation

Objectives

- Maintain, improve, and expand public access for recreational use of publicly-owned water, waterfronts and banks, and open space.
- Create new recreational facilities as part of public investments in water supply and conveyance, water quality, natural resource conservation, flood control, and storm water management infrastructure and operations.
- Integrate complementary recreational access and facility improvements within IRWMP implementation and projects.
- Harness joint funding and development methods to leverage investments across recreational, flood control, water supply, natural resource conservation, water quality and other IRWMP project objectives.
- Establish public recreation benefits as a performance standard for public investment in projects that protect private property or provide for private property development.



3.0 IRWMP Development

3.0 Plan Development

This section describes the process and consideration of the WRA in developing this IRWMP.

3.1 Overview

Input from stakeholders and the public were crucial components in the development of this IRWMP. Public input was gathered through a variety of means, including in three public workshops. Six additional, more focused meetings were held in April 2006, where input on potential actions was gathered from stakeholders.

3.2 Community Outreach

3.2.1 Public Participation Program

The following approaches were applied to involve the community in the IRWMP development process:

- Maintained a user-friendly web site (www.yolowra.org) with the following publicly accessible items:
 - Draft IRWMP sections and related documents
 - Community workshops, including meeting agendas and minutes
 - WRA Board, Executive Committee and WRA TC meeting announcements, agendas and minutes (including agenda items)
 - Comment forms
 - List of frequently asked questions
 - Brief overview of the IRWMP
- Conducted three community workshops in November 2005, May 2006, and October 2006 to inform the public about the IRWMP process, and seek input on water-related issues and potential solutions.
- Solicited input from the public during the open meetings of the WRA Board, Executive Committee, and WRA TC that included discussions of the IRWMP.
- Published three IRWMP newsletters describing the process.

3.2.2 Disadvantaged Communities and Environmental Justice

Based upon the Proposition 50 Guidelines, there are two communities that would be considered disadvantaged within Yolo County. They are the East Yolo County and Knights Landing County Census Designations (CCD). The Knights Landing CCD includes the towns of Dunnigan and Yolo, and the East Yolo CCD includes a strip of land along the Sacramento River from the north County line to Clarksburg, including West Sacramento. Although they may not meet the Proposition 50 Guidelines, other communities, such as Esparto and Madison, are disadvantaged due to failing or deficient infrastructure or drainage and flooding problems that require attention. The WRA TC attempted to involve these communities in the public planning process; however, it was recognized that their participation might be limited within the framework of formal public meetings or workshops. Therefore, an effort will be made to enlist their participation through small group meetings.

A representative of the WRA TC visited with the reclamation districts along the Sacramento River, as well as with the General Plan Advisory Committees of unincorporated communities to discuss their concerns and update these communities about the IRWMP. Special attention was given to informing the communities of the potential to resolve existing infrastructure problems. Several communities, including Esparto, Madison, Knights Landing, East Yolo, and Dunnigan are subject to growth, but their infrastructure for water, sewer, etc., is considered inadequate. These disadvantaged areas, upon meeting the criteria of Proposition 50, were incorporated into the IRWMP process, and specific actions to improve infrastructure and reduce flood hazard were incorporated into this IRWMP. There will be a focused effort to include representatives from the respective communities in the implementation activities.

3.3 Community Workshops

Three community workshops were hosted by WRA to seek input from the public regarding water issues and potential solutions. The workshops were held in November 2005, May 2006, and October 2006, and included presentations from key individuals involved in developing the Yolo County IRWMP. Attendees were given opportunities to ask questions of the team and to engage in dialogue with team members, both in a plenary meeting part and in break-out sessions focusing on particular geographic areas. Summaries of the three community workshops are provided in Appendix D.

3.4 Stakeholder Involvement

The WRA held six meetings with stakeholder groups to solicit comments on the IRWMP development and to seek input on potential actions. A total of 32 stakeholders were interviewed. **Table 3-1** presents the interests that were represented.

I n t e g r a t e d R e g i o n a l W a t e r M a n a g e m e n t P l a n
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Table 3-1 – Stakeholder Organizations and Interests Interviewed by the WRA to Solicit Input on Potential Actions	
Area of Interest	Represented Organizations or Interests
Putah Creek	City of Davis, City of Winters, Landowners (2), Lower Putah Creek Coordinating Committee, Putah Creek Council, UC Davis Putah Creek Reserve
Cache Creek	Aggregate mining companies, Cache Creek Conservancy, Tuleyome
West Yolo County	California Audubon, Yolo County Audubon
North Yolo County	Landowners (2), Reclamation District 108, Yolo County Farm Bureau
Yolo Bypass	California Department of Fish and Game, California Department of Water Resources, Landowners (2), Reclamation Board of California, Yolo Basin Foundation, Yolo Wildlife Area
Non-WRA Yolo County Agencies	California Urban Water Agencies, Natural Resources Conservation Service, Yolo County Agricultural Commissioner’s Office, Yolo County HCP/NCCP Joint Powers Agency, Yolo County Resource Conservation District

Stakeholder representatives provided several potential actions and commented on water issues and priorities for water resource management. Appendix E provides summaries of the stakeholder meetings outcomes.

WRA made a concerted effort to involve stakeholder groups in developing implementation strategies for the IRWMP. In particular, the WRA TC and its consultants met with the Yolo Basin Working Group, Department of Fish and Game, DWR, Yolo Basin Foundation, the Yolo County HCP/NCCP Joint Powers Authority and the Putah Creek Stream Keeper to discuss action implementation strategies.

3.5 Stakeholder Involvement and Coordination Challenges

Although the WRA made an effort to reach stakeholders throughout the Yolo County through community workshops, newsletters, newspaper announcements, and the WRA Website, additional efforts will be required to engage stakeholders regarding specific issues during implementation of this IRWMP.

For example, WRA, working in partnership with the YCFCWCD, Yolo County, and the City of Woodland, conducted a series of interviews and meetings to determine an approach to developing a community consensus on protecting the north and northeast parts of Woodland and unincorporated areas. Those interviewed included agency representatives and other community members who offered insight into the process. Most importantly, the interviews solicited ideas for a new approach to a solution. Based on these interviews, a process was proposed to finding a solution to the flood management problem.

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Other specific efforts will be needed as a part of planning and implementing the proposed actions in this IRWMP. However, no particular standard format can be proposed, because the stakeholder engagement process will need to be tailored to the particular issues and each stakeholder group. Section 6.5 provides additional discussion regarding the public outreach needed as a part of developing the specific strategies to implement actions.

3.6 Identification of Issues and Potential Actions

3.6.1 Identification of Issues

WRA identified major water resource issues for each of the five water management categories. Members of the WRA TC drafted the first set of issues for the water management category, which were then reviewed by the other TC members and by other senior staff at the WRA member agencies (see Section 4 “Findings and Issues”).

3.6.2 Identification of Potential Actions

Potential actions can be projects, programs or policies. The potential actions included in this IRWMP were obtained from the following sources:

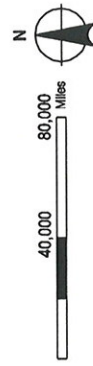
- WRA TC and its consultants
- Interviews with WRA member agency staff
- Community input received at community workshops held in November 2005 and May 2006 (see Section 3.3 “Community Workshops”)
- Stakeholder Interviews (see Section 3.4 “Stakeholder Involvement”)

For each action the following attributes were provided: (1) related water management categories, (2) brief description, and (3) corresponding geographic area. Most actions were assigned to one of the water management categories they were most clearly associated with. In addition, foundational actions were identified as a sixth category of potential actions. Foundational actions are projects or programs that form a foundation for resource management. Foundational actions may include planned or existing ongoing studies, modeling projects, or monitoring programs used to collect, simulate, or predict information.

The planning region was subdivided into subregions or subwatersheds, based on a combination of watershed- and political boundaries (**Figure 3-1**). Each individual action was assigned to one or more subareas.

Yolo County IRWMP Geographic Subareas of Yolo County

- Legend**
- County Boundary
 - Major Roads
- Subareas**
- Cache Creek
 - Colusa Basin Drain
 - Willow Slough
 - Putah Creek
 - Woodland
 - Davis
 - Yolo Bypass
 - Sacramento River

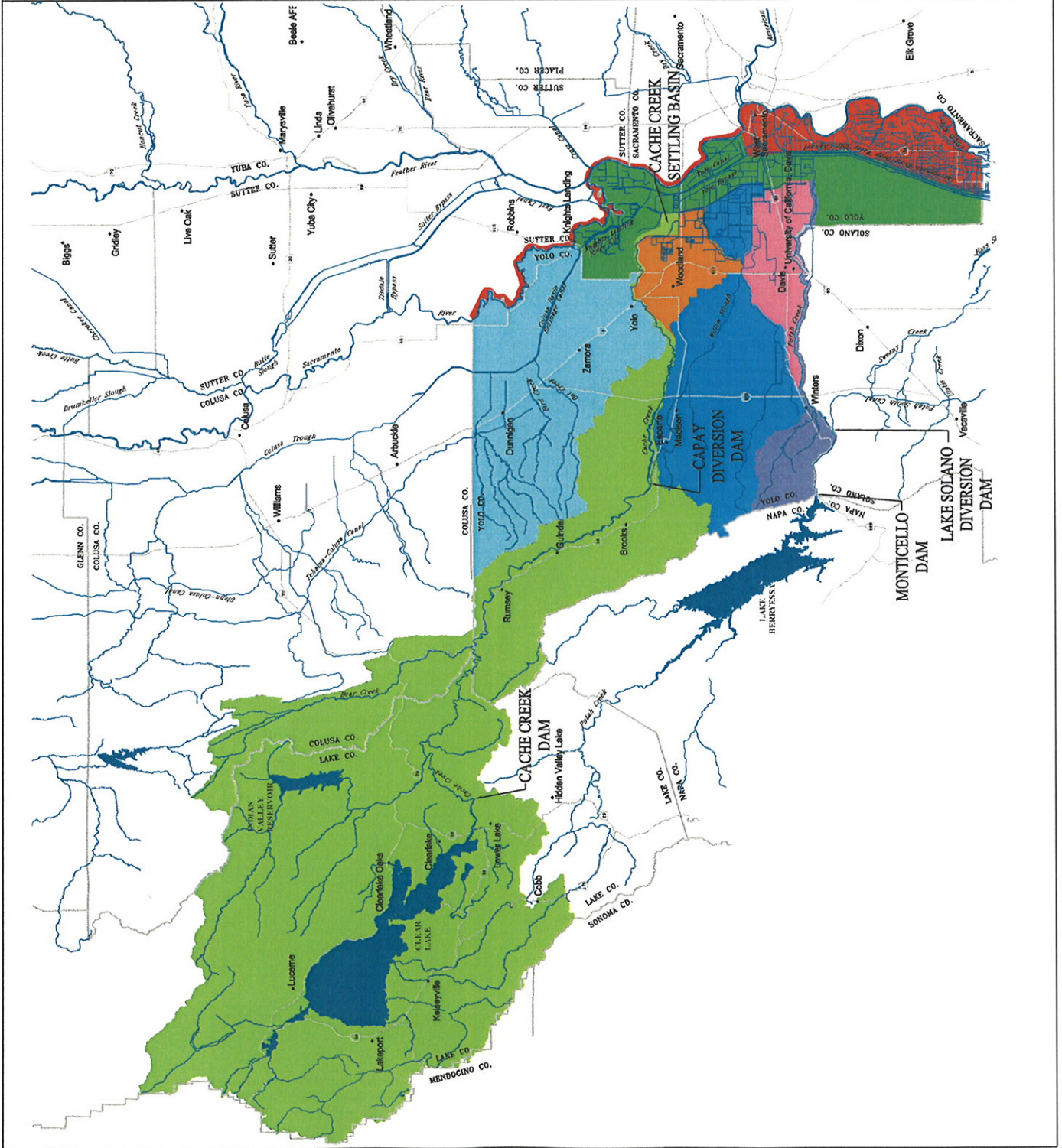


Source: Yolo County Integrated Regional Water Management Plan, Appendix A

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FIGURE 3-1



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3.7 Action Integration

Whenever actions would confer improved benefits or reduced environmental impacts by being aggregated, they were combined, provided that they served a particular common or related set of objectives. Potential individual actions were combined into mutually dependent integrated actions. Actions were also integrated if they were located within the same subregion or subwatershed.

Integrated actions were designed to make better use of water resources by expanding the beneficial uses of water, increasing efficiency, reducing conflicts, increasing environmental and recreational benefits, or by simply widening the geographic area or enlarging the population where benefits were conferred.

However, there were also individual actions that did not require pairing with one or more other actions to be effective. Some individual actions did not gain additional resource benefits from integration, and were simply considered important as stand alone efforts worthy of implementation.

3.8 Evaluation and Prioritization of Actions

Each of the integrated actions and each of the remaining individual actions (not part of an integrated action) were evaluated to determine which of the objectives and identified water resource issues were addressed by the action. Integrated actions that addressed a greater number of objectives and a greater number of issues were considered to have a higher priority.

3.9 Regional Coordination

Yolo County shares several significant water resources with its surrounding regions. For example, Putah Creek is shared with Solano County, Cache Creek is shared with Lake County, and the Sacramento River and Yolo Bypass are shared with Sutter and Sacramento Counties, among others. Regional coordination of water resource management is therefore of the utmost importance.

The water resources of Yolo County are closely linked to those of the surrounding areas and efficient management of the water resources requires regional coordination. This section highlights adjacent regions of importance for coordination and comparable planning programs these regions are engaged in. This section draws on a regional coordination meeting held on August 4, 2006 among representatives of WRA, DWR, Lake County, Regional Water Authority (RWA) (representing the American River Basin water agencies), Northern California Water Association (NCWA) (representing the Sacramento Valley water agencies), and Solano County Water Agency (SCWA). Regional coordination is also discussed under work plans for specific integrated projects in Section 6 “Implementation Strategy.”

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3.9.1 Solano County

An IRWMP has been prepared for Solano County by the SCWA and its member cities and districts (Solano Agencies 2005). The Solano County plan addresses 10 strategic issues:

1. How can supply best match demand through the long term?
2. What measures are necessary to manage the County's groundwater resources?
3. What measures should be taken to encourage sending water of the appropriate quality to the appropriate end user?
4. What measures can be taken to improve runoff quality?
5. How can flood management services best be managed?
6. What should participation in multi-county flood control entail?
7. How can environmental resources best be managed?
8. How can state and federal funding opportunities best be leveraged?
9. What measures would best address safety and security issues?
10. How should the region prepare for climate change?

The actions with the highest priority for implementation in the Solano County IRWMP are:

- Continue ongoing water resource efforts (including regional);
- Administer Solano Project contract and defend water rights;
- Administer State Water Project (SWP) contract;
- Work with SWP, State water contractors, and CALFED to explore water supply and storage opportunities outside the region;
- Improve water treatment technology for water supplies;
- Increase North Bay Aqueduct capacity and utilization;
- Quantify countywide demand and supply;
- Transfer water within the county;

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- Optimize delivery of water to end users based on quantity and quality;
- Purchase contingency supplies at the wholesale level;
- Improve conveyance at Putah Diversion Dam;
- Increase opportunities for conjunctive use;
- Increase use of groundwater;
- Increase participation in the Mojave Exchange Agreement;
- Develop final SCWA flood control funding/construction/maintenance policy from existing “interim principles”;
- Implement water use efficiency efforts; and
- Clarify regulations in developing areas to minimize runoff.

At the regional coordination meeting, David Okita, General Manager of the SCWA, identified four areas of potential regional coordination:

- Coordinated operation of the groundwater basin that is shared between Yolo and Solano counties,
- Addressing flood control issues along Putah Creek,
- Continued coordination on the LPCCC, and
- Reinitiate studies of the extension of the Tehama–Colusa Canal, to provide high quality water to Solano County.

3.9.2 Sacramento Valley

A draft IRWMP has been prepared by NCWA for the Sacramento Valley Region (Northern California Water Association 2006). Four primary objectives were identified in the Draft Sacramento Valley IRWMP:

- Increase regional water supply reliability
- Improve flood protection and floodplain management

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- Improve and protect water quality
- Protect and enhance the ecosystem

Prioritized actions were not identified in the draft, but will be presented in the final IRWMP.

At the regional coordination meeting, David Guy, Executive Director of NCWA, identified the following issues for regional coordination:

- Water quality, in particular rural nonpoint source pollution issues;
- Water supply, in particular the Tehama–Colusa Canal and Sacramento River related issues;
- Groundwater issues; and
- Education within the larger legislative arena.

Coordination through the Sacramento Valley RWQCB’s “Ag Waiver” program could lead to improved documentation, data quality control, and protection of water rights.

3.9.3 American River Basin

Sixteen members of the Regional Water Authority (RWA), a joint powers authority representing water providers in Sacramento, El Dorado and Placer Counties, and the US Army Corps of Engineers have prepared an IRWMP for the American River Basin (Regional Water Authority 2006). Although the Sacramento Area Flood Control Agency (SAFCA) is not part of the RWA, it closely coordinates with the IRWMP.

The goals of the IRWMP are:

- Plan for and implement programs and projects that develop the highest level of reliability in public drinking water supplies, and equitably distribute capital and operating costs.
- Provide the highest practicable level of achieving flood control and storm water quality in the region.
- Protect and enhance groundwater resources and groundwater quality in accordance with adopted groundwater management plans in the region.
- Coordinate with agencies developing plans that identify and implement ecosystem restoration projects along sensitive wildlife habitat areas in the region and Bay-Delta.

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- Move forward in the long term planning of recycled water use to improve water use efficiency in the region, reduce TMDLs for certain constituents in receiving waters of treated wastewater effluent.
- Continuously look for innovative solutions in providing the highest level of protection in raw water sources used for potable drinking water supplies.
- Implement regional water management strategies that provide the highest level of understanding and financial support for regional programs and projects to meet the American River Basin IRWMP objectives.

Water quality and flood control are two areas where water management in Yolo County (in particular at the Yolo Bypass and west bank of the Sacramento River) and the American River Basin could be coordinated.

3.9.4 Lake County

Although Lake County is not currently developing an IRWMP, it is actively engaged in several large scale water management projects. These include:

- ***The Full Circle Wastewater Treatment Program***—A program that will build the necessary infrastructure for a wastewater treatment system that can be accessed by the communities surrounding Clear Lake. The new system will connect areas not currently served by the regional wastewater treatment system, and will ensure high quality water supplies for surrounding communities, while protecting the lake from wastewater, and may provide water to the Geysers geothermal power generating area.
- ***The Middle Creek Flood Damage Reduction and Ecosystem Restoration Project***—A project that will eliminate flood risk to structures and 1,280 acres of agricultural land and will restore damaged habitat and the water quality of the Clear Lake watershed. The project is under development by the US Army Corps of Engineers and the Lake County Flood Control and Water Conservation District.
- ***Adobe Creek Conjunctive Use Project***—The Adobe Creek Conjunctive Use Project utilizes the existing Highland Springs Reservoir to help meet the goals of the Big Valley Groundwater Management Plan through conjunctive use. Additional surface water will be stored in Highland Springs Reservoir in the spring. This water will be released in the summer to recharge the groundwater in the western portion of Big Valley.

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- **Clear Lake Integrated Aquatic Plant Management Plan**—A plan to manage the aquatic plants in Clear Lake that is integrated with the California Department of Food and Agriculture’s eradication program of the noxious aquatic weed hydrilla.

At the regional coordination meeting, Pamela Francis, Water Resources Program Manager for Lake County, indicated that numerous opportunities exist for regional coordination, in particular for flood control, water supply and water-related recreation. Lake County and the YCFCWCD have coordinated water resource management through a “2 x 2 Ad Hoc Committee” meeting in November 2005, which included two Lake County supervisors, two representatives of YCFCWCD and staff.

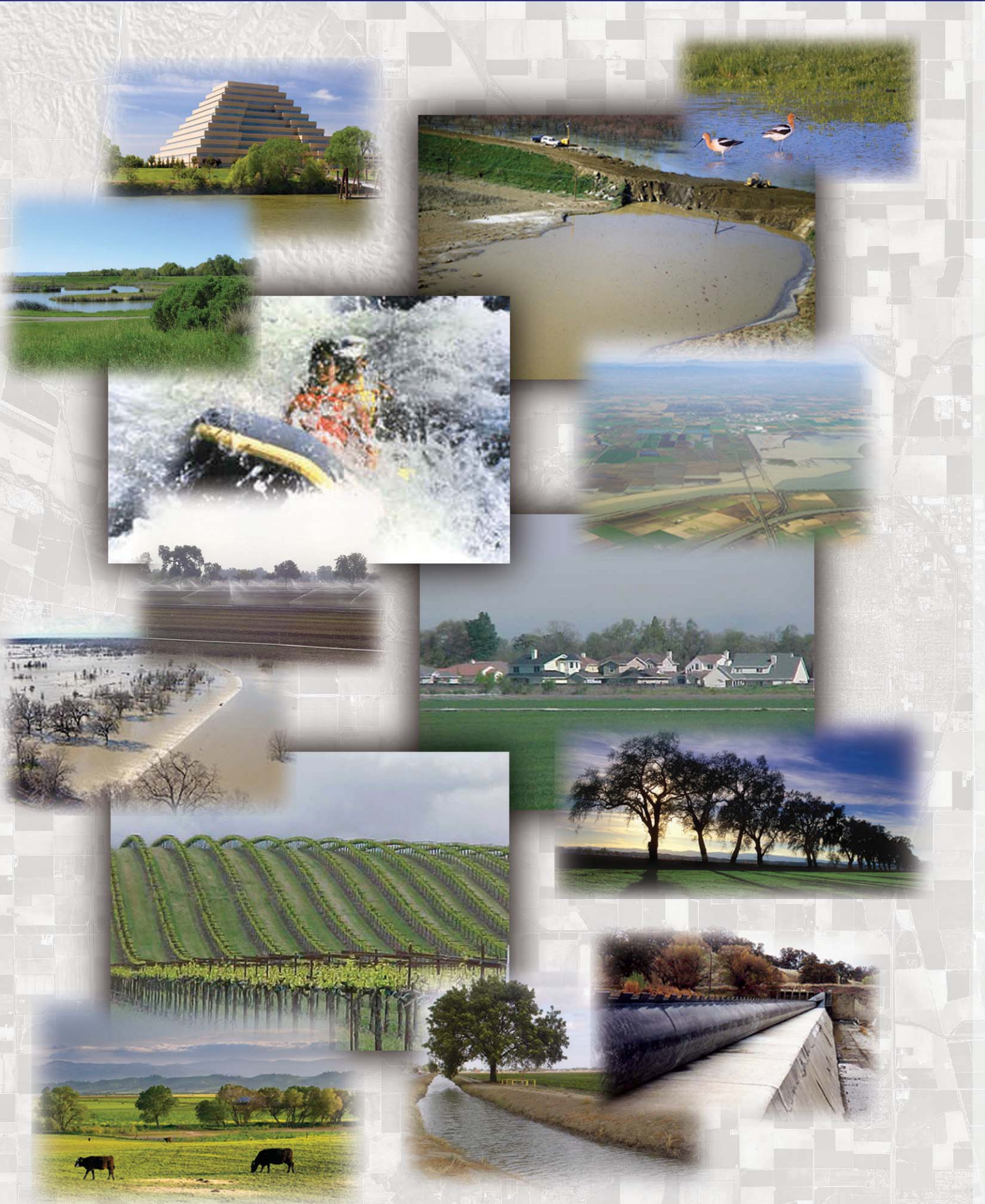
3.10 Implementation Strategy Development

Work plans were drafted for the first three to five years of further development and implementation of certain integrated actions. Lead partners involved with some integrated actions felt it was premature to identify preliminary budgets and time lines for performing prerequisite tasks so none are included. The work plans describe the lead agency, partners, and stakeholders for each integrated action and the prerequisite studies and investigations that need to be conducted to develop each integrated action. For each potential component action was noted which prerequisite actions/tasks would benefit them. A preliminary schedule and estimated cost range was developed for each prerequisite study.

Further prioritization of initial action development and implementation activities identified in the work plans will be required by the lead implementing entity. This will reconcile the reality of limited budgets, staffing and a clear vision by stakeholders to proceed on a wide variety of actions simultaneously.

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4.0 Findings and Issues

4.0 Findings and Issues

4.1 Overview

Drawing from data and information presented in this IRWMP’s Background Data and Information Appendix (**Appendix A**), water resource plans, technical studies, and expressed public concerns spanning more than 20 years; the WRA TC identified particular findings and issues related to the respective water resource management categories. The WRA identified potential actions that address these issues.

The findings and issues in the respective water management categories are presented below.

4.2 Water Supply and Drought Preparedness

4.2.1 Findings

- Urban areas, agriculture, and the environment in Yolo County depend upon a reliable water supply, a combination of both groundwater and surface water.
- Surface water sources in Yolo County include the Sacramento River, Colusa Basin Drain, Putah Creek, Cache Creek, and the Willow Slough Bypass.
- All urban water users, except West Sacramento, rely on groundwater as their primary source of water supply. Farmers rely on groundwater for approximately 40% of their supply in a normal year, but rely more heavily on groundwater during drought years.
- Future urban population growth will result in an increase in water supply needs and demands from cities, unincorporated communities, and UC Davis. Agricultural water demand is expected to remain fairly stable, but may decline slightly depending on the impact of land conservation and conversion.

4.2.2 Issues

- Increasingly stringent water quality regulations (see Section 4.3 “Water Quality”).
- Need to improve existing water supply quality, and pursue higher quality water sources to meet current and future demands.
- Availability of adequate water supplies during severe drought conditions.
- Subsidence as a result of groundwater extraction.

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- Cost of providing water and wastewater service is increasing and expected to continue.
- Regulatory compliance is increasingly complex and expensive.
- Ability of deep aquifer to sustain current and future demands.

4.3 Water Quality

4.3.1 Findings

- Important to protect the quality of groundwater and surface water for the benefit of urban areas, agriculture, and the environment.
- Urban areas can significantly improve drinking water quality through treatment processes.
- Groundwater and surface water quality are both critical for ecosystem health.
- Drinking water quality and wastewater discharge standards are tightening.
- Deteriorating water quality may increasingly have an impact on agricultural production.

4.3.2 Issues

- High nitrate levels in the drinking water wells of both cities and unincorporated communities that potentially present a risk to human health.
- High salinity levels from wastewater treatment plant discharges into waterways that exceed permit requirements.
- Potential for high salinity levels in groundwater if agricultural irrigation slowly concentrates salts in shallow groundwater aquifers, but more monitoring necessary to determine if it is an issue.
- Levels of arsenic and chromium VI, naturally occurring constituents in deep groundwater aquifers, approach human health standards and may cause a risk to human health.
- High levels of boron in shallow groundwater aquifers that reduce crop yields or destroy young, perennial crops.
- Trace levels of flame retardant chemicals that do not yet present a risk to human health, but may present a risk in the future.

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- Well-head neglect and abandonment, creating possible conduits for pollution to enter groundwater aquifers.
- Low levels of pesticides, nitrates, or other harmful constituents in surface water that are not known to exceed human health standards, but additional monitoring is required to ensure that the water is safe.
- Some surface water sources have high levels of suspended sediment that can negatively affect aquatic life.
- High levels of mercury in Cache Creek and the Yolo Bypass may present a risk to humans who consume large quantities of fish and fish-eating wildlife.
- Storm water drainage may result in spikes of pollutants of concern that could exceed human health standards and negatively affect wildlife.

4.4 Flood Management and Storm Drainage

4.4.1 Findings

- Much of Yolo County is a natural floodplain.
- Three primary geographic regions with flooding issues: Cache Creek basin/Woodland, Sacramento River corridor, and Western Yolo floodplain (Madison, Esparto, Airport Slough, etc.) and Yolo County land west of the unleveed part of the Yolo Bypass south of Putah Creek.
- Regions have unique circumstances but share common issues.
- The unincorporated area of Yolo County near Cache Creek, as well as parts of the City of Woodland, has only 10-year flood protection according to the Federal Emergency Management Agency (FEMA).
- Yolo County contains 215 miles of levees as part of the Sacramento River Flood Control Project, including the Yolo Bypass.
- Geotechnical studies are necessary to determine whether some of Yolo County's Sacramento River levees are subject to underseepage or other potential causes of levee failure.
- In 2004, FEMA released new guidelines that will require Yolo County to submit hydraulic and geotechnical studies of specific Sacramento River levees to achieve 100-year flood protection certification during FEMA's 2006 remapping process. FEMA will decertify the levees if Yolo County does not

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submit the hydraulic and geotechnical studies supporting the attainment of the FEMA 100-year levee standard for certification.

- Yolo County, 13 reclamation districts, one levee district, one drainage district, and DWR have responsibility for maintaining Yolo County's Sacramento River Flood Control Project levees.
- During the past 10 years, there has been increasing pressure in the Central Valley to build in floodplain areas. Yolo County has restricted growth in the floodplains in the unincorporated areas, but many residential, industrial, and residential structures continue to be built by cities in the floodplain.
- The Yolo Bypass does not and has not functioned at design flow capacity for many years. This poses a threat to the citizens of Yolo, Solano, and Sacramento Counties if future flood events exceed the capacity of the Bypass.

4.4.2 Issues

- Through seepage and underseepage threats to Sacramento River levees.
- Erosion threats to Sacramento River levees.
- Inadequate funding for geotechnical studies to determine erosion, stability, and seepage threats to Sacramento River levees and subsequent repair projects.
- Inadequate public outreach (need for flood insurance, understanding of evacuation plans, etc.).
- Inadequate emergency preparedness plans for levee failures.
- Need to evaluate development in the floodplain (the more development, the greater the risk to public safety).
- Inadequate compensation to Yolo County for providing the City of Sacramento with flood protection. Failure of the federal and state governments to equitably address the Sacramento River Flood Control Project induced flood risks within and adjacent to the Yolo Bypass.
- Inadequate flood protection from existing Cache Creek levees.
- Erosion of existing Cache Creek levees.
- Inadequate vegetation removal on Cache Creek (impedes capacity).

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- Insufficient understanding of the risk of Cache Creek flooding.
- Inadequate levees to protect Madison and Esparto from Lamb Valley Slough flooding.
- Inadequate flood protection at the airport.
- Future land use changes in the Yolo Bypass must be closely monitored to ensure that impediments to flow do not occur that would further minimize capacity. All current and future land uses in the Bypass must be consistent with flow capacity requirements and subject to consistent State Reclamation Board enforcement. There should be no redirected hydraulic impacts as a result of the project operations, upstream development, or in-bypass projects.

4.5 Riparian and Aquatic Ecosystem Enhancement

4.5.1 Findings

- Major waterways and lesser streams in Yolo County that could benefit from various forms of aquatic and riparian aquatic ecosystem enhancement include:
 1. Cache Creek
 2. Putah Creek
 3. Colusa Basin Drain
 4. Sacramento River (including Fremont Weir)
 5. Salt Creek, Bird Creek, and Oat Creek (north of Cache Creek)
 6. Willow Slough, Willow Slough Bypass, and Dry Slough (south of Cache Creek)
 7. Yolo Bypass
- Tributaries to these waterways are also important to the aquatic and riparian ecosystem enhancement effort.
- Changes to the landscape from agriculture, development, and flood control projects have diminished aquatic and riparian habitat over the last 150 years.
- Recent state government efforts, including the passage of resources bonds, have made funds available for aquatic and riparian ecosystem enhancement efforts.

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- Many of Yolo County's waterways are considered to be of statewide importance for aquatic and riparian ecosystem enhancement efforts.

4.5.2 Issues

- Loss of native plants, increase of invasive plants leading to increased erosion problems, and loss of habitat.
- Loss of native fish habitat, including spawning grounds.
- Barriers to fish passage that prevent anadromous fish from reaching spawning grounds.
- Barriers to fish passage that prevent juvenile fish from reaching floodplains with superior food availability, and better protection from predators than an open waterway.
- Loss of habitat for terrestrial species, including endangered species, leading to a decline in some populations.
- Increase of invasive aquatic species.
- Methylmercury accumulation in fish tissue, which puts fish-eating wildlife at risk of neurological and reproductive disorders.

4.6 Recreation

4.6.1 Findings

- Countywide survey of recreational preferences specific to waterways has not been conducted, although individual government entities have developed detailed plans.
- Many opportunities to enhance existing recreational opportunities along waterways.

4.6.2 Issues

- Insufficient or inadequate educational opportunities (interpretive centers, etc.) related to waterways.
- Insufficient or inadequate hiking, bicycle and equestrian trails along waterways.
- Insufficient or inadequate hunting and fishing access sites along waterways.

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- Insufficient or inadequate camping facilities along waterways.
- Insufficient or inadequate boating opportunities (motorized and non-motorized).
- Insufficient or inadequate wildlife viewing opportunities.
- Insufficient or inadequate day-use activities (picnicking, swimming, etc.)

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5.0 Potential Actions and Prioritization

5.1 Overview

Potential actions presented in this IRWMP fall into two main categories: foundational actions and actions that directly address resource management issues.

The foundational actions are projects or programs that form a foundation for resource management. Foundational actions may include planned or existing ongoing studies, modeling projects, or monitoring programs used to collect, simulate or predict information relevant to resource management.

Potential actions that directly address resource management issues were initially developed as individual (stand-alone) actions. Subsequently, many individual actions were combined into nine integrated actions, based on shared water resources and common or complementary objectives. For each potential action, **Table 5-1 to Table 5-6** present: identification code¹, title, related water management categories, brief description, and geographic area.

The integrated actions and individual actions were evaluated based on the number of IRWMP objectives and water resource management issues each would address (**Table 5-7**). In addition, the statewide priorities for each action established by DWR and SWRCB were also determined (**Table 5-8**).

Due to the volume of information presented in **Table 5-1** through **Table 5-8**, these tables can be found at the end of Section 5.0.

¹ Each action is identified with a unique identification code consisting of two letters indicating the action's category, followed by a number.

The letter codes are:

- FA = Foundational Action
- AR = Aquatic and Riparian Ecosystem Enhancement
- FM = Flood Management and Storm Drainage
- R = Recreation
- WQ = Water Quality
- WS = Water Supply and Drought Preparedness

Please note that the numbering may not be consecutive; when actions were deleted or moved, the remaining actions were not renumbered.

5.2 Foundational Actions

Ten foundational actions were identified and are presented in **Table 5-1**. One of the foundational actions has two subactions and another has three subactions. Subactions are components of actions that apply to a particular region but have the same objective as the main action.

The foundational actions include continuation and expansion of the existing groundwater monitoring program for the County (FA1), with subactions for Dunnigan (FA1.1), UC Davis (FA1.2) and Woodland (FA1.3). Other foundational monitoring programs include countywide surface water (FA2), subsidence (FA3), and aquatic habitat and fish opportunity assessment programs (FA6). The surface water and subsidence monitoring programs are existing programs that need to be expanded and enhanced. The aquatic habitat and fish opportunity program is a new program that needs to be established. The enhancement of the Water Resources Information Database (WRID) (FA7) is closely related to these monitoring programs because enhancement of this database is necessary to accommodate expanded monitoring programs. In fact, currently available surface water data need to be stored in the WRID. The WRID is a critical tool for integrated water resource management in the County.

Enhancement of the Supervisory Control and Data Acquisition (SCADA) network (FA8) that the YCFCWCD is developing for Lake and Yolo Counties will not only benefit monitoring and control of water transmission and delivery, but can also serve flood management, water quality and environmental monitoring.

Countywide topographic mapping using Light Detection and Ranging (LiDAR) (FA11) and aerial photography of the Lower Cache Creek watershed (FA16) are two foundational data collection projects that will greatly benefit integrated water resource management planning in Yolo County.

One of the foundational actions is to provide funding for the Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) currently under development (FA14). This plan will provide comprehensive habitat conservation and streamlined compliance with the Endangered Species Act, as well as other regulations protecting species and habitats. Additional funding is needed to complete this plan within the next 2-4 years. Implementation of this IRWMP should be coordinated with implementation of the HCP/NCCP. Development of the HCP/NCCP includes the collection of data on the distribution of habitats and modeling of conservation areas, and can be helpful in implementing actions.

The development and implementation of foundational actions are funded in part by the WRA Project Funds budget and with grant funding or cost-sharing with federal or state agencies where the opportunity exists.

5.3 Individual Actions

Potential individual actions were identified for each of the five water resource management categories based upon the findings and issues detailed in Section 4.0. During the plan development (Section 3.0) every effort was made to identify and describe all individual actions within the IRWMP region, regardless of their readiness to proceed. There are currently over 150 potential actions presented in this IRWMP. In most cases these individual actions were combined to form integrated actions. Some integrated actions have an individual action as a core (or cornerstone) action. Below is a summary of these potential individual actions, presented by each of the five water resource management categories. Tables 5-2 through 5-6 provide a brief summary of each of the individual actions.

5.3.1 Water Supply and Drought Preparedness

The WRA identified a total of 28 individual potential water supply and drought preparedness actions (**Table 5-2**). One of those actions, the Dunnigan Area Water Storage Program (WS3), has three subactions. Two water supply actions are already in an advanced state of development: the RD2035 Sacramento River Diversion and Conveyance Facilities Project (WS7), and the Davis-Woodland Water Supply Project (WS8). Each of these water supply projects is the focus of an integrated action (see Section 5.4 “Integrated Actions”). The Comprehensive Conjunctive Water Use Program (WS16) for Cache Creek is another water supply project that is essential to an integrated action. In addition, there are water supply actions in the Dunnigan area that, in combination with flood management actions in that area, form the focus of an integrated action in the Dunnigan area.

5.3.2 Water Quality

Seventeen individual, potential water quality projects were identified and are presented in **Table 5-3**. One action, the Yolo County Waste Water Recycling Program (WQ2), had seven subactions, including recycling projects in Winters, Dunnigan, Esparto, Madison, Woodland, Davis and UC Davis. Several water quality actions are already being implemented, but they could be enhanced and/or expanded. These include the Agricultural Lands Conditional Waiver Program (WQ14), a mandatory monitoring program landowners are required to comply with, and for which they need financial assistance; the City of Woodland Wastewater Recycling Project (WQ2.5); the UC Davis Ground Water Remediation Project (WQ3); and the Sacramento River Joint Source Water Protection Program (WQ11).

5.3.3 Flood Management and Storm Drainage

Forty-eight (48) individual, potential flood management and storm drainage actions were identified and are presented in **Table 5-4**. Several flood management and storm drainage actions focus on Cache Creek and form the corner stone of the Cache Creek Flood Management Integrated Project (see Section 5.4 “Integrated Actions”). When implemented, these actions would achieve a reduction of the flood risk in the City of Woodland, and other

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parts of Yolo County near Cache Creek. Together, the Dunnigan Area Storm Drainage/Flood Management Project (FM21) and water supply actions form the core of the Dunnigan Integrated Project. Several potential flood management actions would be taken on the west bank of the Sacramento River and these actions form the core of the Sacramento River (West Bank) Integrated Project. Several conceptual ideas have been prepared for the Yolo Bypass Integrated Project regarding expanded flood management capacity and innovative flood management options. The Yolo Bypass Working Group IRWMP Subcommittee will work with associated stakeholders to expand and advance these conceptual ideas in subsequent iterations of IRWMP actions.

5.3.4 Aquatic and Riparian Ecosystem Enhancement

Fifty-three (53) potential individual aquatic and riparian ecosystem enhancement actions were identified and are presented in **Table 5-5**. Together with potential flood management actions, these potential enhancements play a defining role in the Putah Creek Integrated Project.

It should be noted that many potential ecosystem enhancement actions are identified in two actions: the Yolo Bypass Wildlife Area Ecosystem Restoration Project (AR41), and the Yolo Bypass Conceptual Aquatic Restoration Opportunities (AR 49). Regarding AR46, these ecosystem restoration elements are all part of the same Land Management Plan for the Yolo Bypass Wildlife Area. All these actions are subject to the same environmental review and public involvement process, and were therefore treated as a single action. AR49 reflects a list of restoration concepts that has been prepared by a partnership of federal and state agencies and has been initially discussed with Bypass stakeholders through meetings of the Yolo Bypass Working Group.

5.3.5 Recreation

Thirty-eight (38) potential water-related recreation actions were identified and are presented in **Table 5-6**. Together with ecosystem enhancement actions, recreation actions form the core of the Yolo Bypass Integrated action. The Cache Creek area is the geographic where the most recreation actions have been identified (11 potential actions). Although only one potential action was identified for the Yolo Bypass Wildlife Area that action includes many components that are all part of the Land Management Plan and will require partnerships between diverse stakeholders and DFG.

5.4 Integrated Actions

There are nine (9) integrated actions identified in this IRWMP that would greatly improve water resource management in Yolo County. The following integrated actions are:

1. Davis-Woodland Water Supply Project
2. Reclamation District No. 2035 Sacramento River Diversion and Conveyance Project

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3. Cache Creek Flood Management Integrated Project²
4. Cache Creek Water Management Integrated Project²
5. Dunnigan Integrated Project
6. Putah Creek Integrated Project
7. Yolo Bypass Integrated Project
8. Sacramento River (West Bank) Integrated Project
9. Yolo County Sloughs, Canals, and Creeks Management Program

The attributes below apply to each integrated action:

- **Location** – The geographic area where project components are located.
- **Theme** – The water resource management theme based on the integration of individual actions.
- **Relevance to goals and objectives** – Describes the relevance of the integrated action to the goals and objectives of this IRWMP.
- **Potential component actions** – A list of the individual actions that could potentially be included in the integrated action; with an identification code that cross references to **Table 5-2** to **Table 5-6**.
- **Description** – A description of the integrated action.

Work plans for six of the integrated actions are provided in Section 7.0, including prerequisite tasks, agencies, and other entities that would be involved, a schedule for the first 3–5 years, and approximate costs. Through the refinement of the Sacramento River West Bank and Yolo Bypass Integrated Projects, it was deemed to be premature to include an estimated budget and time line at this time.

5.4.1 Davis-Woodland Water Supply Project

Location

The Sacramento River between Interstate 5 and the City of West Sacramento and the City of Davis, the City of Woodland, and UC Davis.

² For the purpose of implementation the Cache Creek Flood Management and Water Management Integrated Projects were combined into one Cache Creek Integrated Project (see Section 6 “Implementation Strategy”).

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Theme

The combined management of surface and groundwater resources to enhance the quantity, quality, and reliability of the water supply for existing and future residents, and improved quality of the wastewater discharged.

Relevance to Goals and Objectives

Seeks to assure an adequate water supply for the people of Davis, Woodland, and UC Davis in a manner that is efficient, economical, and consistent with IRWMP objectives related to:

- Coordinating and conjunctively managing surface and groundwater supplies.
- Ensuring open and frequent communication with the public.
- Integrating water resource and land use planning.
- Maximizing the extent to which statewide priorities are met.
- Enhancing the aquatic and riparian environment.
- Reducing point source pollution.
- Complying with applicable water discharge requirements.

Potential Component Actions

Individual actions included in this integrated project include the Foundational Actions and the following:

- Davis-Woodland Surface Water Supply Project (WS8)
- City of Woodland Water Meter Retrofit Program (WS12)
- RD 2035 Sacramento River Diversion and Conveyance Facilities Project (WS7)
- UC Davis Water Conservation Program (WS9)
- Comprehensive Conjunctive Water Use Program (WS16)
- Sacramento River Water Testing Program (WQ13)

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Description

The cornerstone of this integrated action is the application to appropriate water from the Sacramento River under the Watershed of Origin provisions of the California Water Code. This application was filed in 1994 to provide up to 45,000 acre-feet of water annually for municipal uses for the cities of Davis, Winters, and Woodland, and for UC Davis. The City of Winters has subsequently withdrawn from the application.

Davis, UC Davis, and Woodland currently rely solely on groundwater to meet their potable water needs. Concerns regarding groundwater quality, groundwater subsidence, wastewater disposal impacts, and cost impacts on consumers have caused Davis, UC Davis, Woodland, and the YCFCWCD to investigate the feasibility of implementing a project that would divert water from the Sacramento River, treat the water at a new water treatment plant, and convey the treated water to Davis, UC Davis, and Woodland water users.

Implementation of the project would accomplish the following:

1. **Improve Water Quality** – Surface water has a higher water quality than groundwater. Groundwater in the Davis and Woodland areas contains concentrations of dissolved solids, iron, manganese, nitrate, arsenic, and chromium VI that are of concern with regard to drinking water quality and current and anticipated future drinking water regulations. In addition, boron concentrations impact the suitability of the groundwater for landscape irrigation. Surface water from the Sacramento River does not contain problematic concentrations of these constituents.
2. **Improve Wastewater Quality** – Groundwater in the Davis and Woodland areas contains concentrations of total dissolved solids, boron, and selenium in excess of amounts allowed by current and anticipated wastewater discharge regulations. Surface water from the Sacramento River does not contain problematic concentrations of these constituents.
3. **Groundwater Basin Impacts** – Reduced groundwater pumping would beneficially impact groundwater levels and reduce inelastic land subsidence that is documented in the area.

Feasibility studies have been completed by the cities and UC Davis. Recently the cities, UC Davis, and the YCFCWCD initiated preparation of an environmental document that will assess the impacts of the proposed project. A final EIR intended to satisfy the requirements of CEQA is scheduled to be completed in 2007. If a document is required to satisfy the requirements of NEPA, this document will also be prepared during 2007.

The project would involve the conjunctive use of surface water and groundwater. Surface water would supply base demands and would be supplemented by groundwater as required to meet peak-day demands. Three diversion locations are currently under consideration.

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This effort includes an application to the SWRCB for new water rights permits. It is anticipated that the new water rights permits (if successfully obtained by Davis, UC Davis, and Woodland) would authorize these three agencies to divert water from the Sacramento River for a significant portion of the project’s estimated demands. However, it is anticipated that there will be periods in the summer months in many years when these new permits would not authorize any diversions. Davis, UC Davis, and Woodland are currently investigating purchasing water rights or contractual entitlements on a permanent basis that would allow diversion from the Sacramento River in those months (generally from May through October in the driest years) when water would not be available for diversion under the agencies’ own water right permits.

5.4.2 Reclamation District No. 2035 (RD 2035) Sacramento River Diversion and Conveyance Project

Location

The project is located at the Sacramento River near Interstate 5 and the Yolo Bypass.

Theme

Fisheries enhancements with a state-of-the-art fish screen and water supply reliability for agriculture and wetlands management in and adjacent to the Yolo Bypass.

Relevance to Goals and Objectives

Strives to ensure an adequate water supply that is efficient, economical, and environmentally sound, through actions consistent with IRWMP objectives related to:

- Coordinating and conjunctively managing surface and groundwater supplies.
- Maximizing the extent to which statewide priorities are met.
- Enhancing the aquatic and riparian environment.

Potential Component Actions

Individual actions included in this integrated project include the Foundational Actions and the following:

- RD 2035 Sacramento River Diversion and Conveyance Facilities Project (WS7)
- Davis-Woodland Surface Water Project (WS8)

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Description

For many years, RD 2035 has diverted water from the western side of the Sacramento River just north of the Vietnam Veterans Bridge on Interstate 5. This diversion is one of the largest unscreened diversions remaining on the Sacramento River. The current pumping station has a capacity of 400 cubic feet per second (cfs), and discharges under County Road 16 (River Road), into a channel that ultimately feeds into the Conaway Ranch water supply system. The channel and downstream siphon have a capacity of approximately 300 cfs. Water is diverted through this facility to serve the agricultural users on Conaway Ranch, under appropriate and riparian water rights held by Conaway Ranch, and a settlement agreement between the U.S. Bureau of Reclamation and Conaway Ranch.

A new diversion structure and pumping station have been designed to replace the existing facility, under funding provided through the CALFED Ecosystem Restoration Program. The new diversion facility has also been designed with a capacity of 400 cfs, and meets the latest criteria for fish screen design as defined by the NOAA Fisheries and the California Department of Fish and Game. The purpose of the project is to comply with federal and state fish screening criteria, and to ensure a reliable supply of water to the agricultural users on Conaway Ranch.

There are also plans under consideration that would increase the capacity of the siphon under Highway 16, and convert the open channel that parallels Highway 16 across the Yolo Bypass into a piped transmission system. The reason for converting this open channel into a piped system is to eliminate the potential risk of damage that the channel now faces each year when the Yolo Bypass floods (and the constant need to rebuild the channel after a flood event). These improvements are not part of the project facilities that have been designed under the CALFED funding.

There are some remaining issues regarding project sizing and capacity, which have held the final project approval in abeyance. One of the key issues is the sizing of the new diversion facility and pumping station. The current RD 2035 facility has a capacity of 400 cfs, and it has served district users well for many years. There are times, particularly during rice land flood up in the spring, when instantaneous flow requirements are very important to meeting the user needs in the district. As a result, RD 2035 is reluctant to consider a facility with a lower capacity.

The project's review and approval agencies are concerned that RD 2035 facilities downstream of the new system have a capacity less than 400 cfs, and the water rights under which the diversion would occur have an upper limit of 316 cfs (this is the limit of the combined water rights held by Conaway Ranch for the Sacramento River, and represents the maximum capacity permitted based upon a monthly average). Because of this, they would like to limit project capacity to less than 400 cfs. As stated above, for several years RD 2035 has considered another improvement project that would increase its downstream conveyance capacity to or above 400 cfs, and has instantaneous needs for 400 cfs or more when flooding up for rice crops on Conaway Ranch. In addition, the water rights do not prohibit an instantaneous diversion of

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up to 400 cfs (unless other water rights holders are adversely impacted – which obviously is not the case), but rather require that the diversion, when averaged over the month, cannot exceed 316 cfs. This issue is yet to be resolved, and represents the single remaining obstacle to moving the project forward.

This diversion and conveyance system has been identified in a number of regional water supply feasibility studies as the logical location for a joint-use facility to not only serve the agricultural users on Conaway Ranch, but to also serve the urban users represented by the cities of Davis and Woodland, and UC Davis. These three entities have joined together to form the Yolo Regional Treated Surface Water Supply Project. Feasibility studies conducted by these agencies demonstrate that with a 400 cfs diversion capacity, the new RD 2035 diversion structure could adequately serve both the agricultural and urban needs in the region. The location of the RD 2035 diversion structure is noted as one of four points of diversion in the water rights application for the regional project.

5.4.3 Cache Creek Flood Management Integrated Project³

Location

The channel, banks, and floodplains of Cache Creek from the town of Rumsey at the head of Capay Valley, to the Cache Creek Settling Basin east of Woodland, which then spills into the Yolo Bypass. A larger focus area (where solution-oriented actions may help achieve flood management objectives) extends from the Cache Creek Settling Basin upstream to include the entire Cache Creek watershed, including Clear Lake Dam and Indian Valley Reservoir.

Theme

Periodic high flows in Cache Creek cause extensive bank erosion, levee degradation, and local flooding, threatening the north and north east sections of the City of Woodland and the town of Yolo. A well-planned series of projects and programs will ultimately provide 200-year level or greater of flood protection and levee integrity by combining the cumulative effects of integrated actions throughout the Cache Creek corridor.

Relevance to Goals and Objectives

Strives to protect people and property from hazards associated with flooding through a suite of actions consistent with IRWMP objectives related to:

³The Cache Creek Flood Management Integrated Project and the Cache Creek Water Management Integrated Project were developed and evaluated separately (see Section 5.5 “Evaluation and Prioritization of Actions”). Subsequently, these two integrated actions were combined for the purposes of developing an integration strategy for Cache Creek (see Section 7).

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- Ensuring open and frequent communication with the public.
- Maximizing the extent to which statewide priorities are met.
- Assisting disadvantaged communities.
- Enhancing the aquatic and riparian environment.
- Providing recreational opportunities without adversely impacting private property owners.
- Providing flood control for the citizens of Yolo County consistent with recommendations of the State Floodplain Management Task Force.

Potential Component Actions

Individual actions potentially included in this integrated project are:

- Huff's Corner Levee Repair Project (FM13)
- Reconciliation of Cache Creek Settling Basin Future Modifications and "Original" South Levee Project (FM14)
- Bear Creek Detention Basin Project (FM16)
- Cache Creek Off-Channel Detention Basin Projects (FM18)
- Woodland Area Flood Management Project (FM19)
- Flood Emergency Preparedness and Hazard Classification Program (FM22)
- Clear Lake Operations Evaluation Program (FM24)
- Create Flood Management Division or separate entity (FM35)
- Thurston Lake Pump Storage Project (WS19)
- Clear Lake Upstream Storage Project (WS20)
- Putah Creek and Cache Creek Exotic and Invasive Species Removal Project (AR7)
- Cache Creek Regional Campground Habitat Enhancement Project (AR18)
- Corell-Rogers Wetlands Project (AR21)

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- Grube-Payne Habitat Restoration Project (AR22)
- Cache Creek Riparian Habitat Enhancement Program (AR24)
- Cache Creek Trail Nodes Program (R3)
- Camp Haswell Renovation Project (R6)
- Camp Haswell/Otis Ranch Improvement Project (R8)
- Cache Creek Regional Park Improvement Project (R15)
- Blue Ridge Campground (R18)
- Nichols Park Improvement Project (R20)
- Develop Recreational Opportunities on Public Lands (R22)
- Levee Public Access Improvements Project (R32)

Description

A primary objective of this integrated project is to resolve public controversy and reach broad consensus for a suite of measures designed to protect north and northeast Woodland, Yolo, and private lands from catastrophic or damaging flooding caused by high flows that exceed the conveyance capacity of Cache Creek.

An integrated flood management project does not rely on a single, major action or exclusively on the federal role and funding by the Corps of Engineers. While no firm decisions have been made, it may be that no single project can provide a Woodland/Cache Creek flood control solution. A feasible solution may, of necessity, require multiple, integrated actions. An effective combination of many actions in the watershed and along the valley floor will be examined that collectively would achieve the level of protection the citizens of Woodland and other parts of the County deserve.

Consideration could be given to temporarily storing floodwater in the upper watersheds in new detention basins (e.g., dry dams, off-channel basins, including deep mine pits), or by re-operation of existing reservoirs. Another fraction of flood flow could be diverted from the creek and redirected into existing canals and bypasses, or new ones could be constructed. The reduced inflow to Cache Creek from these actions will be safely contained within the channel through a combination of site-specific measures.

The integrated project also seeks local cooperation and involvement with DWR and the Corps to determine the most appropriate future modifications to Cache Creek Settling Basin, which is gradually filling to design capacity for capturing sediment before it enters the Yolo Bypass.

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The settling basin levees and spillway height also adversely affect storm drainage from Woodland and surrounding agricultural land by blocking outflow to the bypass, and causing water to back up in Cache Creek. The need to protect the regional flood control function of the Yolo Bypass (by preventing deposition in the bypass) needs to be reconciled with secondary adverse flooding effects to the City of Woodland.

5.4.4 Cache Creek Water Management Integrated Project⁴

Location

Cache Creek between Capay Dam and County Road 94B, including the communities of Esparto and Madison.

Theme

The theme of this integrated project is the conjunctive management of surface and groundwater resources to enhance the water supply and its reliability for existing and future residents, agriculture, aquatic and riparian habitat enhancement, and recreation.

Relevance to Goals and Objectives

Seeks to assure adequate water supply for the communities of Esparto and Madison through actions consistent with IRWMP objectives related to:

- Conjunctive management of surface and groundwater supplies.
- Water management, conservation, and reuse of water for municipal, industrial, and agricultural water users.
- Intra-county transfer of water.
- Integrated water resource and land use planning.
- Maximizing the extent to which statewide priorities are met.
- Assisting disadvantaged communities.
- Enhancing the aquatic and riparian environment.
- Maximizing the use of recycled water.
- Complying with applicable discharge requirements.

⁴ See footnote on page 5-9.

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- Providing recreational opportunities without adversely impacting private property owners.

Potential Component Actions

Individual actions potentially included in this integrated project include the Foundation Actions and the following:

- Comprehensive Conjunctive Water Use Program (WS16)
- County Road 19 Water Storage Project (WS3.1)
- Esparto Water Supply Project (WS4)
- Madison Water Supply Project (WS5)
- Capay Dam Reliability/Restoration Project (WS13)
- Moore Siphon Reliability/Restoration Project (WS14)
- Colusa Basin Drain Water Supply Project (WS22)
- Esparto Wastewater Recycling Project (WQ2.3)
- Madison Wastewater Recycling Project (WQ2.4)
- Cache Creek-Yolo Bypass Anadromous Fish Passage Project (AR8)
- Capay Dam to Moore Siphon Riparian Flow Program (AR35)
- Cache Creek Riparian Habitat Enhancement Program (AR24)
- Cache Creek Anadromous Fish Reintroduction/Introduction Study (AR46)
- Cache Creek Trail Nodes Program (R3)
- Cache Creek Nature Preserve Improvement Project (R19)
- Lower Cache Creek Parkway Access Project (R29)

Description

The cornerstone for this integrated action is the Cache Creek Recharge/Recovery Project (a component of a Comprehensive Conjunctive Water Use Program), and operation of the Capay Diversion Dam (on which the YFCWCWD retrofitted an inflatable rubber dam in 1994 as the

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first element of the recharge/recovery project). The YCFCWCD has filed an application to appropriate up to 94,000 acre-feet of water in a given year for recharge, primarily in the reach of Cache Creek between County Road 85 and County Road 94B. The estimated average annual water yield is estimated at approximately 20,000 acre-feet per year. This reach of Cache Creek has also been identified as a candidate for significant aquatic and riparian habitat enhancement.

The water supply developed through the conjunctive use program could be treated and delivered to the communities of Esparto, which is indicated to have a population increase from 2,400 to 3,600 by 2025, and Madison, which is projected to increase from 560 to 800 in that same time. The water demands for Esparto are projected to increase from approximately 1,000 to 1,400 acre-feet annually by 2025 and Madison is projected to increase from 240 to 310. Both communities are currently served entirely by groundwater and have encountered problems in both water quantity and quality. A treated water supply would provide both communities with long-term water supply reliability. The groundwater for the recharge/recovery project could be extracted from open gravel pits that are planned as part of the mining reclamation plans to be left open and not backfilled.

The disposal of wastewater from the two communities is currently by evaporation and land disposal. The wastewater facilities for Madison are problematic and currently are not in regulatory compliance. This problem will become more critical with the increasing population. Viewing wastewater as a manageable water resource rather than a waste disposal problem affords the opportunity, with advanced treatment, to provide water that can be recycled and integrated into the overall water supply of the County and used for agriculture and/or environmental enhancement.

An additional increment of water would be developed from storing “winter” water from Cache Creek and/or the Colusa Basin Drain in a County Road 19 water storage facility with a capacity of about 16,000 acre-feet. As examined previously by the YCFCWCD, water could be diverted at Capay Dam and conveyed to the County Road 19 water storage facility via the West Adams Canal, Hungry Hollow Canal, and Clover Canal. Alternately or in combination water could be diverted by pumping from the Colusa Basin Drain to the water storage facility.

The combination of water management activities, including Cache Creek conjunctive water use, wastewater recycling, and storage of “winter” water provides a significant component of “new” water that can be used to increase water supply reliability for residents and aquatic habitat enhancement along Cache Creek.

A critical feature for the management of the water in Cache Creek is the Capay Diversion Dam that was constructed in 1914. The integrity of the facility must be sound to ensure reliability in the delivery of water to agriculture, as well as for the proposed recharge/recovery project. As part of this integrated action, the integrity of the Capay Dam would be investigated and the facility would be upgraded consistent with current water management technology to function

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reliably in the future. Similarly, the Moore Siphon or some modification thereof is required for reliable water management operations in the future to support this integrated action.

5.4.5 Dunnigan Integrated Project

Location

The project is located in the vicinity of the Town of Dunnigan.

Theme

Preliminary information from the Yolo County General Plan Update and from the Dunnigan Steering Committee indicates consideration of development of up to 7,500 new housing units. A comprehensive infrastructure plan is needed that demonstrates the availability of a long-term water supply for existing and future residents, handling wastewater from new development and correcting problems associated with existing development, and managing storm runoff to ensure the safety of existing and future residents and property.

Relevance to Goals and Objectives

The integrated project strives to assure existing and future residents of Dunnigan with a reliable long-term water supply and protection from hazards associated with storm runoff and flooding through actions consistent with IRWMP objectives related to:

- Conjunctive management of surface and groundwater supplies.
- Water management, conservation, and reuse of water for municipal, industrial, and agricultural water users.
- Importing water and/or intra-county transfer of water.
- Integrated water resource and land use planning.
- Maximizing the extent to which statewide priorities are met.
- Assisting disadvantaged communities.
- Enhancing the aquatic and riparian environment.
- Maximizing the use of recycled water.
- Complying with applicable discharge requirements.

Potential Component Actions

Individual actions included in this integrated project include the Foundational Actions and the following:

- Dunnigan Area Water Supply Project (WS2)
- Oat Creek Water Storage Project (WS3.2) or Bird Creek Water Storage Project (WS3.3)
- Colusa Basin Drain Water Supply Project (WS22)
- Dunnigan Area Wastewater Recycling Project (WQ2.2)
- Buckeye Creek Erosion/Flood Management Project (FM4)
- Dunnigan Area Storm Drainage/Flood Management Project (FM21)
- Small Sloughs Revegetation Project (AR25)

Description

Central to this integrated action is the prospect of a substantial increase in population or, in effect, a “new town” in the Dunnigan area. Because the County is planning for such a community, it is essential to develop a Community Plan to determine if a reliable long-term water supply, in the order of 9,000 acre-feet annually, is available to sustain the proposed development. The water demand for the existing community is estimated at 380 acre-feet per year. Based upon work completed by the Dunnigan Water District, it appears that groundwater and a portion of the Dunnigan Water District’s water supply (through its water service contract with the U. S. Bureau of Reclamation) can meet a significant portion of the demand, but not the entire demand. Recycling wastewater produced from the community would assist in meeting the overall water demand.

The area planned for development, as well as the existing development, can be impacted by storm runoff originating in the Dunnigan Hills to the west including Oat Creek, Bird Creek, Buckeye Creek, and several, smaller drainage sheds that discharge through culverts under the Tehama Colusa Canal. A comprehensive storm drainage plan would be required to determine the most effective measures for handling storm runoff originating outside the “new town” area, and for treating and handling runoff originating within the developed area.

With the development being considered, the opportunity exists for revegetating the natural waterways, treating erosion problems, and creating open space corridors along the waterways.

5.4.6 Putah Creek Integrated Project

Location

Putah Creek between Lake Berryessa and the Yolo Bypass

Theme

Improvement of water quality, storm drainage, flood flow conveyance, habitat quality and recreation in the Putah Creek area. In addition, water supply reliability objectives could be realized by the integrated project.

Relevance to Goals and Objectives

Seeks to improve water and habitat quality and flood flow conveyance and recreational opportunities in the Putah Creek area through actions consistent with IRWMP objectives related to:

- Enhancing the aquatic and riparian environment.
- Maximizing the extent to which statewide priorities are met.
- Utilizing recycled water to the maximum extent possible.
- Identifying measures that can be implemented to reduce point-source and non-point source pollution.
- Providing recreational opportunities without adversely impacting private property owners.
- Providing adequate storm drainage and flood control consistent with recommendations of the State’s Floodplain Management Task Force.
- Enhancing water supply reliability.

Potential Component Actions

Individual actions potentially included in this integrated project include the Foundational Actions and the following:

- Putah Creek Bank Stabilization Project (FM1)
- Dry Creek Bank Stabilization Project (FM2)
- City of Winters Storm Drainage Diversion to Putah Creek Project (FM3)

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- Putah Creek Diversion Dam Vegetation Removal Project (FM36)
- Mace Boulevard Bridge Improvement Project (FM37)
- Russell Ranch Riparian and Grassland Habitat Restoration Project (AR2)
- Putah Creek Fisheries Habitat Enhancement Project (AR3)
- UC Davis Confined Animals Relocation Project (AR4)
- Putah Creek Recreational Facilities Restoration and Expansion Project (AR5)
- Putah Creek and Cache Creek Exotic and Invasive Species Removal Project (AR7)
- Putah Creek Spawning Grounds Improvement Project (AR34)
- Replace Earthen Crossing of Putah Creek at Route 106A (AR37)
- Removal of Winters Percolation Dam (AR38)
- Increase Width of Riparian Corridor of Lower Putah Creek (AR39)
- South Fork Preserve Riparian and Grassland Restoration Project (AR45)
- Geomorphic Restoration of Putah Creek (AR48)
- Putah Creek Trails Program (R14)
- Putah Creek Fishing Access Project (R11)
- Levee Public Access Improvements Project (R32)
- Reroute Willow/University Canal (WS26)

Description

Eroding, unstable banks of Putah Creek and its tributaries, and unstable slopes cause deposition of sand and finer sediment in the channel of Putah Creek and Lake Solano. This reduces channel conveyance capacity, causing turbidity and reducing salmonid spawning habitat quality. In addition, the expansion of non-native invasive species (especially giant reed and Himalayan blackberry), reduces channel capacity, deflects flow toward eroding slopes, increases transpiration, and reduces riparian habitat quality.

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The Putah Creek Integrated Project would include a set of compatible actions which could include removal of exotic species; removal of outmoded structures that reduce conveyance (e.g., Winters Percolation Dam); stabilizing banks and slopes by revegetation, and using environmentally sensitive bank and slope stabilization techniques; riparian habitat restoration; and channel maintenance, including the removal of vegetation that chokes the channel. The Putah Creek Integrated Project could also improve storm water drainage along Putah Creek (including diversion of storm flow from the City of Winters), and water supply reliability by rerouting Willow and University Canals away from the creek to avoid washouts of the canal into the creek at high flows. The latter component could be combined with habitat restoration along the banks of Putah Creek. Replacing the Mace Boulevard bridge with a bridge of greater conveyance capacity could also be included.

Replacing the seasonal earthen crossing/dam at Road 106A with a concrete ramp and box culvert would provide better fish passage, more reliable crossing for vehicles at low flows, and reduce silt loading when the earthen crossing is partially removed each fall.

Ongoing and future habitat restoration on the UC Davis properties could also be incorporated into the integrated project, including habitat restoration associated with removal of confined animal facilities from the North Fork, and additional riparian restoration on Russell Ranch and at the UC Davis picnic area.

The Putah Creek Integrated Project could also improve passage for anadromous fish by removing impediments to passage at the Los Rios Check Dam, and also at upstream passage barriers. Spawning habitat for salmonids downstream of the Putah Creek Diversion Dam could be improved by introducing properly sized gravel into the creek.

Recreational opportunities could be improved on public lands, including the development of Winters Putah Creek Park, and improving trails and facilities at Yolo County's fishing access sites in the reach between Lake Solano and Monticello Dam.

Any projects planned and implemented along Putah Creek by the WRA agencies will be closely coordinated with the Lower Putah Creek Coordinating Committee (LPCCC) and LPCCC agencies that are not part of WRA. Agencies that are both members of LPCCC and WRA include Yolo County, the cities of Winters and Davis, and UC Davis.

5.4.7 Yolo Bypass Integrated Project

Location

Yolo Bypass

Theme

The principal function of the Yolo Bypass is flood management and to convey project design flood flows. The theme of the Yolo Bypass Integrated Project is to enhance opportunities for

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agricultural operation, wildlife habitat, native resident and anadromous fish rearing and migration, and public recreation in a manner compatible with the Bypass as a flood management facility. These opportunities will be created by building and enhancing flood management, agricultural, and recreational facilities, restoring appropriate habitat in appropriate locations, conducting biological research and hydraulic/hydrologic modeling to quantify natural resource conditions in the Bypass, and enhancing stakeholder interaction and outreach.

Relevance to Goals and Objectives

Seeks to enhance aquatic and wetland habitat, and recreational opportunities through actions consistent with IRWMP objectives and with flood management responsibilities related to:

- Ensuring open and frequent communication with the public.
 - Integrating water resource planning and land use planning.
 - Maximizing the extent to which statewide priorities are met.
 - Enhancing the aquatic and riparian environment.
 - Maintaining viable agricultural use.
 - Providing educational opportunities.
 - Providing recreational opportunities without adversely impacting private property owners.
- § Providing adequate flood control for the citizens of Yolo County, consistent with recommendations of the State’s Floodplain Management Task Force.

Potential Component Actions

Most current and future actions in the Bypass take place in the context of an extensive set of overlapping planning activities and local jurisdiction policies including the following items:

- Yolo County General Plan
- City of Davis General Plan
- City of Davis Comprehensive Bicycle Plan
- City of West Sacramento General Plan
- City of West Sacramento Access and Bike Plan

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- Delta Protection Commission:
 - a. Delta Recreation Plan
 - b. Delta Mercury Collaborative
 - c. Land Use and Resource Management Plan for the Delta Primary Zone
- North American Waterfowl Management Plan
- Central Valley Habitat Joint Venture
- Yolo County Habitat Conservation Plan / Natural Communities Conservation Plan
- Agricultural / Irrigated Lands Conditional Waiver Program (Ag Waiver)
- Sacramento Area Council of Government's Regional Bicycle, Pedestrian, and Trails Master Plan
- Lower Putah Creek Watershed Management Action Plan
- Sacramento River Flood Control Project
- California State Plan of Flood Control (pending)
- Yolo Bypass Wildlife Area Land Management Plan

The individual actions to be considered in this integrated project represent a range of project readiness. Some potential projects are at a full proposal stage and are waiting for funding. Others are at a preliminary level and require further development. Another group of projects are highly conceptual but represent ideas that Bypass stakeholders feel are reasonable for future development and consideration. Excluding the Foundational Actions (as described in Section 5.2), the following list presents projects for current and future consideration in the Bypass.

Current Projects

- Yolo Bypass Mercury Best Management Practices Development Project (WQ16)
- Yolo Bypass 2-D Hydraulic Modeling Project (FM3)
- Yolo Bypass Wildlife Area Ecosystem Restoration Project (AR41)
- Yolo Bypass Working Group Funding (AR47)

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- Yolo Bypass Conceptual Aquatic Restoration Opportunities (AR49)
- Yolo Bypass Wildlife Area Public Access, Outreach, and Interpretation Program (R12)
- Deep Water Ship Channel Trail Project (R13)
- Davis Wetlands Public Access Improvement Project (R31)
- Levee Public Access Improvements Project (R32)
- Public Access Trails Along Existing Storm Water Conveyance Channels Project (R33)
- Colusa Basin Drain Water Supply Project (WS22)
- Yolo Bypass Sediment Removal Project (FM33)

Future Projects

- Project addressing Liberty Island and potential flood impacts (benefits and/or detriments) associated with levee removal (may be coordinated with the Lower Yolo Bypass Collaborative Planning Project).
- Develop non traditional “multi-use” levees that provide flood protection and compatible habitat components.
- Conduct a full Bypass Bio-Inventory expanding beyond current inventory of riparian habitats to include all other Bypass habitats.
- Develop a Wildlife Evaluation and Monitoring Program, providing benefit to landowners by defining species information on their properties, and tools for best business decisions on private and public lands.
- Build a cross-bypass, at-grade bike trail linking Davis and West Sacramento including options to bridge the existing Tule Canal / Toe Drain, and options to address flood damages, user safety concerns, and waste/refuse management. Might be linked to Delta Trails project. Also addressed in Recreation project – R12.
- Develop Yolo Bypass levee and channel improvements to increase flood flow conveyance and reduce flood stages in the Bypass.

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- Expand outreach and involvement of Bypass subsistence anglers, particularly among diverse ethnic cultures not generally accessed through conventional outreach methods
- Develop a multi-agency Yolo Bypass flood readiness and response plan.

In addition to the list above, there are more than 80 other projects under consideration in this IRWMP process that may have a direct impact on the Yolo Bypass. These projects cover the full range of water management categories and are located directly on, or are on tributaries of Putah Creek, Cache Creek, Willow Slough, the Colusa Basin Drain / Knights Landing Ridge Cut, and the Sacramento River. Each of these waterways flows into the Bypass and can have direct or indirect affect on Bypass conditions.

In support of the Yolo County IRWMP, the Yolo Bypass Working Group (Working Group), with support from DWR and as sponsored by the Yolo Basin Foundation (Foundation), has created an IRWMP Subcommittee (Subcommittee) to review, prioritize, and recommend project ideas on a quarterly basis. The Subcommittee functions under a specific set of operating rules and has a structured consensus-seeking decision process that relies on “consensus with accountability” wherein all participants have committed to seek to reach consensus. In the event a participant must reject a proposal, that participant must provide a counter proposal that legitimately attempts to achieve their interest and the interests of the other participants. The Subcommittee is made up of a representative and equitable cross-section of affected private and public Bypass landowners, and likely public and non-governmental organization project implementers.

The Subcommittee has identified the level of project readiness for each current project (see Section 7.0, “IA7. Yolo Bypass Integrated Project”). Based upon preliminary factors, the Subcommittee has also organized current projects into prioritization categories of *high*, *medium*, and *low* status for the initial iteration of this IRWMP. In subsequent work, the Subcommittee intends to create a more comprehensive rationale for project prioritization reflecting the key interests of the diverse Subcommittee membership. The Subcommittee also expects to further review the current and future projects and also address prioritization taking into account project details, project partnering, and other changes.

Description

Actions identified in this IRWMP must reflect the primary role of the Bypass as floodway. Ideally however, the goal is to create a suite of projects that reflects management of the Yolo Bypass as a multi-function floodway. These actions are based upon stakeholder input and are consistent with the ongoing local management planning process. The integrated action aims to improve existing facilities and establish new ones that enhance flood management, irrigation, habitat values, recreation and education. Planning and implementing this action will be closely coordinated with all stakeholders and local, state and federal agencies that have jurisdiction over flood management and resources in the Yolo Bypass.

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The Yolo Bypass performs multiple functions. It is a key component of the Sacramento River Flood Control Project, provides thousands of acres of productive and diverse publicly and privately managed wetland habitat, an important stop-over on the Pacific Flyway for wintering waterfowl, shorebirds and neotropical songbirds, a productive agricultural area, an important rearing habitat for floodplain dependent fish species, a migration route for anadromous fish and provides important educational and recreational opportunities. Many of these functions reach far beyond Yolo County.

The flood management function of the Yolo Bypass is critical in protecting the cities of Sacramento and West Sacramento and other parts of Sacramento, Solano, and Yolo Counties from flooding. The Yolo Bypass is a critical link in the Sacramento flood control system. Flood conveyance through the Yolo Bypass works to prevent large scale flooding in upstream areas for the entire Sacramento Watershed. The flood management function puts important constraints on other uses of the Yolo Bypass. Hydraulic roughness needs to be maintained below the level where vegetation would increase water surface elevations or flow velocities along structures. Late flooding of the Yolo Bypass in spring may shorten the growing season for crops, and eliminates recreational access to the Bypass.

The Yolo Bypass provides farmers opportunities for a variety of crops including rice, wild rice, tomatoes, beans, melons, and safflower. Farming practices are instrumental in keeping hydraulic roughness of the Yolo Bypass low, because plant species that cause obstructions to flow, such as willows are controlled. The farmland also provides important habitat for waterfowl and other wildlife.

The Yolo Bypass has international significance as a waterfowl and shorebird wintering area, but also provides habitat for a diversity of wildlife through the entire year. The Yolo Bypass Wildlife Area is owned and managed by the California Department of Fish and Game (DFG). It was dedicated and opened for public access in 1997, and covers approximately 16,000 acres. Management of the Yolo Bypass Wildlife Area explicitly addresses the needs of flood management and agriculture in the Yolo Bypass. It is managed for a variety of habitats including seasonal and permanent wetland and riparian and upland areas. An extensive public use program already exists on the Wildlife Area. Habitat restoration and agricultural activities are jointly managed throughout the area. The DFG land management plan for the Wildlife Area is under development. The planning process has included an extensive public involvement process.

Studies by the California Department of Water Resources (DWR) and UC Davis have found that the Yolo Bypass is an important nursery area for salmon and other floodplain dependent species. Juvenile salmon that migrate out through the Yolo Bypass have been shown to grow larger than juveniles that migrate out through the channel of the Sacramento River. Data have also been collected that suggest that survival is higher in the Yolo Bypass. The Yolo Bypass floodplain also provides habitat for other native fish species. The Toe Drain along the eastside of the Yolo Bypass provides habitat for important non-native game fish including striped- and largemouth bass. In 2006, DFG, DWR, National Marine Fisheries Service, and the U.S. Fish

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and Wildlife (the CALFED Ecosystem Restoration Program Implementing Agencies) formed the Yolo Bypass Interagency Working Group (YBIWG) and evaluated the feasibility of implementing a set of aquatic ecosystem restoration opportunities in the Bypass. The primary goals of the YBIWG are to:

1. Improve conditions for native fish species (particularly federal and state Threatened and Endangered fish species and species of special concern) in the Bypass, enhancing populations and recovery efforts.
2. Keep users of the Yolo Bypass whole by maintaining or improving existing conditions.

The YBIWG has identified the following potential sequential aquatic enhancement opportunities for further evaluation and discussion with stakeholders:

- Putah Creek – Lower Putah Creek stream realignment and floodplain restoration for fish passage improvement and multi-species habitat development on existing public lands.
- Lisbon Weir – Improve the structure for fish, wildlife and agriculture; reduce maintenance.
- Additional Multi-species Habitat Development – Provide for controlled localized seasonal inundation on more frequent intervals; identify areas of opportunity only on: the Wildlife Area; other existing public lands; and private lands where cooperative agreements with willing land owners provide mutual benefits.
- Tule Canal Connectivity – Identify passage impediments (example: road crossings and impoundments); work with land owners to develop the best options for improving fish passage and ensuring water diversion capability.
- Multi-species Fish Passage Structure – Investigate the redesign of the existing fish ladder; evaluate the feasibility of constructing a new fish passage structure, operated to ensure: continued maintenance of flood conveyance capacity; no substantial changes in timing, volume, and/or duration of flow; and minimal disturbance to existing land use and agricultural practices.

Project development will include the creation of conceptual restoration opportunities, stakeholder input to guide further actions, and the development of (in concert with stakeholders), an appropriate restoration plan that maintains or improves conditions in the Yolo Bypass for flood control, native fish and Bypass users.

The Yolo Bypass Working Group is an important forum for stakeholder input to the planning and management of the Yolo Bypass. It includes representatives of the local landowners, State, local, and Federal flood and resource management agencies, the conservation community, local

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governments, academia, and a number of other participants. It is sponsored by the Yolo Basin Foundation (with funding that ended in December 2006 from CALFED). The Foundation is a community-based organization originally founded to assist with the establishment of the Yolo Bypass Wildlife Area. It remains an important force in environmental education and community-based planning, working closely with the DFG and other agencies. The Foundation sponsors an extensive educational program associated with the Wildlife Area. Over 4,000 K-12 students from throughout the region visit the Wildlife Area annually. Other public access programs sponsored by the Foundation include public tours, teacher workshops an extensive volunteer program and a public lecture series. In 2001 the Foundation, on behalf of the Working Group published: the *Yolo Bypass Management Strategy*, is a locally-based concept for the future of the Yolo Bypass, resulting from the Working Group’s efforts.

Recreational opportunities in the Yolo Bypass include hunting, fishing, and wildlife viewing. Close proximity to Sacramento, West Sacramento, Davis, and Woodland, and easy access via Interstate 5 and Interstate 80, increases the importance of the area for recreation. The only public recreation access in the Bypass is on the Wildlife Area. DFG manages a large hunting program at the Wildlife Area during the fall and winter months and maintains hiking trails, an auto tour, and fishing dock opportunities. Several trails and cycling advocates have proposed recreational trails concepts in and adjacent to the Bypass. These ideas require further development to appropriately integrate with current Bypass land uses but they are consistent with adjacent local government recreation plans and warrant consideration by the Subcommittee.

5.4.8 Sacramento River (West Bank) Integrated Project

Location

The west bank and levee of the Sacramento River in Yolo County, between Knight’s Landing and Clarksburg, including the urbanized riverfront of West Sacramento and Southport.

Theme

Reduce the risk of flooding by collaborating on levee rehabilitation, levee maintenance, and storm drainage improvements, while enhancing water quality, habitat and water- based recreation.

Relevance to Goals and Objectives

Strives to protect people of Yolo County and property from hazards associated with flooding through actions consistent with IRWMP objectives related to:

- Ensuring open and frequent communication with the public.
- Maximizing the extent to which statewide priorities are met.

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- Enhancing the aquatic and riparian environment.
- Providing recreational opportunities without adversely impacting private property owners.
- Providing flood control for citizens of Yolo County consistent with recommendations of the State's Floodplain Management Task Force.

Potential Component Actions

Individual actions potentially included in this integrated project include Foundational Actions and the following:

- Linden Road Water Intake Plant Replacement (WS27)
- West Sacramento Reclaimed Water Use Standards (WS28)
- Sacramento River Joint Source Water Protection Program (WQ11)
- Sacramento River Storm Water Sources Monitoring Program (WQ17)
- Knights Landing Levee Improvement Project(FM5)
- Clarksburg Levee Improvement Project / Sacramento River Levee Improvement #4 (FM6)
- Sacramento River West Bank Levee Integrity Program (FM7)
- Sacramento River Levee Rehabilitation Project – Merritt Island (FM30)
- Sacramento River Levee Repair (FM40)
- Deep Water Ship Channel Navigation Levee Repair (FM41)
- Sacramento Bypass-Yolo Bypass Levee Repair (FM42)
- West Sacramento South Cross Levee Repair (FM43)
- Ongoing Levee Maintenance and Critical Repair Program (FM44)
- RD 900 and West Sacramento MOU on Storm Water Detention and Raw Water Supply (FM45)
- Elk Slough Reclamation Pumping Plant (FM46)

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- Public Outreach on Flood Risk (FM47)
- Levee Maintenance Fee Structure Assessment (FM48)
- Sacramento River Fish Habitat Enhancement Program (AR26))
- Sacramento Riverbank Enhancement Actions (AR50)
- Bees Lakes Preserve (AR51)
- Merritt Island Habitat Enhancement Project (AR52)
- Knights Landing Boat Launch Improvement Project (R7)
- Main Drain Canal Recreation Corridor (R36)
- Implementation of the Commission’s Land Use and Resource Management Plan for the Primary Zone of the (Delta Management Plan) (R37)
- Sacramento River Recreation Trail (R38)

Description

Approximately 50 miles of the County’s west bank levees are state-federal levees under the jurisdiction of the State Reclamation Board as part of a valley-wide flood protection system, called the Sacramento River Flood Control Project (SRFCP). The west bank levees protect farmland, utilities and highways, and communities located within historic flood basins including Knight’s Landing, West Sacramento and Southport, and Clarksburg. Most of these levees were constructed up to a century ago and are maintained by agricultural levee districts or state maintenance areas with insufficient funding and staff to keep pace with normal deterioration of levees and eroding banks. No levee failures or overtopping has occurred along the river in Yolo County, but miles of west bank levee do not meet current standards and many sites are at risk of damage from bank erosion or high-water seepage conditions.

The Corps has identified several “critical eroding sites” near or against levees along the west bank. Repairs and upgrades at these and other less critical sites requires Congressional and state authorization and funding, and some increment of local cost-share before projects can be designed and constructed.

The Sacramento River Corridor Planning Forum (Forum), a multi-agency and stakeholder group established in 2003 at the direction of the State Reclamation Board, includes the participation of Yolo Co, RD 900, and the City of West Sacramento. The Forum prepared a Floodway Management Plan with comprehensive river corridor guidelines to be adopted in 2006. The guidelines establish prudent measures and policies to ensure public safety and the

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reliability of the floodway and levee system, while integrating future needs of urban waterfront development, public river access and recreation, river habitat conservation, and other land uses.

The Sacramento River (West Bank) Integrated Project would combine and implement many of the Forum's recommended guidelines, protect and upgrade west bank levees and banks, improve shoreline fish habitat and expand riparian vegetation, provide new or improved river access facilities, and secure the water quality of our water supply infrastructure. The Project also enhances the maintenance and monitoring of urbanized portions of the river levee system.

5.4.9 Yolo County Sloughs, Canals, and Creeks Management Program

Location

Countywide but excluding Cache Creek, Putah Creek, and the Sacramento River

Theme

The management of storm water that flows through Yolo County can be enhanced and adverse impacts minimized through a program that integrates treatment of storm water, water quality and habitat improvements on Willow Slough and its tributary sloughs, and water delivery and drainage canals.

Relevance to Goals and Objectives

Strives to protect people and property from hazards associated with storm runoff and flooding.

Potential Component Actions

Individual actions potentially included in this integrated program include the Foundational Actions and the following:

- Regional Irrigation / Tailwater Recovery Systems Program (WS17)
- YCFCWCD Distribution System Canal Extensions Project (WS24)
- Madison Storm Drainage/Flood Management Project (FM9)
- Esparto Storm Drainage/Flood Management Project (FM10)
- Caltrans Highways Hydraulic Impact Assessment Program (FM11)
- County Roads Hydraulic Capacity Assessment Program (FM12)
- Cities-County Storm Drainage Criteria Update Program (FM15)

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- Watershed Management Program (FM20)
- Willow Levee Improvement Project (FM26)
- Creation of Flood Management Division or Entity (FM35)
- Small Sloughs and Creeks Invasive Vegetation Removal Program (FM38)
- Regional Irrigation Tailwater Recovery Systems Program (WS17)
- Agricultural/Urban Storm Runoff Assessment Program (WQ4)
- Ag Waiver Program (WQ14)
- Willow Slough Bypass Environmental Enhancement Project (WQ7)
- Demonstration Farm Project (WS27)
- Environmental Enhancement of Waterways Project (AR6)
- Sloughs and Waterways Environmental Enhancement Program (AR9)
- Agricultural Drains and Sloughs Riparian Habitat Enhancement Program (AR11)
- South Fork Willow Slough Riparian Restoration and Levee Setback Project (AR13)
- Willow Slough Habitat Enhancement Program (AR14)
- Chickahominy Slough Riparian Restoration and Levee Setback Project (AR19)
- Cottonwood Slough Riparian Restoration and Levee Setback Project (AR20)
- Small Sloughs Revegetation Project (AR25)
- Non-native, Invasive Plant Species Removal Program (AR30)
- Canal Bank Habitat and Maintenance Program (AR36)

Description

Central to this integrated program is the management of storm runoff to minimize adverse impacts while enhancing storm water quality and wildlife habitat in a manner that is compatible with agricultural practices. Implementation of this program will result a comprehensive

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approach to treating storm runoff throughout the County, and coordination between agricultural and urban areas.

The waterways that traverse Yolo County convey storm runoff and irrigation water supply and return flow, while providing a habitat corridor for wildlife. A comprehensive assessment of the functional attributes of the various sloughs and waterways is essential for minimizing the adverse impacts of storm runoff and long-term benefits to water quality and wildlife habitat. The sloughs and waterways function as a system and need to be treated accordingly. Sloughs are crossed by federal and state highways, county and private roads, and canals; all of which were designed and constructed at different times with different criteria. Some crossings are clearly impediments to conveying storm runoff and need to be reevaluated.

The regulatory requirements associated with agricultural and urban storm runoff will become increasingly important and the mixing of such waters needs to be dealt with in a deliberate and thoughtful manner. The Yolo County HCP/NCCP in preparation at this time will be helpful in facilitating the permitting and environmental review of measures to enhance the management of storm water while improving water quality and wildlife habitat.

5.5 Evaluation and Prioritization of Actions

5.5.1 Overview

Potential integrated actions and those individual actions not included in integrated actions were evaluated by determining which objectives of the IRWMP and which water resource management issues they addressed. Actions that addressed many objectives and water resource management issues were considered high priority actions.

Potential actions were also compared to the statewide water resource priorities established by DWR and the SWRCB. Those actions that met many of these priorities were considered of importance to statewide water resource management. The latter could be an important factor in attracting funding in the future from various state grant and loan programs.

Early in the development of this IRWMP, a detailed quantitative scoring system was developed for use in prioritization of individual and integrated actions. This method of implementation was not implemented, because insufficient information was available about the potential actions to allow a meaningful detailed quantitative evaluation and scoring. However, a description of this method is included as **Appendix B** to this document, because the method may be useful to IRWMP participants as more detailed information becomes available.

5.5.2 Evaluation Based on Objectives and Issues

Integrated actions addressed 3 to 10 of the 14 IRWMP objectives, and 2 to 21 of the 45 water resource management issues (Table 5-7). Individual actions that were not included in an integrated action addressed zero to seven objectives and zero to six issues (Table 5-7).

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Three integrated actions addressed more than half of the objectives: the Cache Creek Water Management Integrated Project, the Dunnigan Integrated Project, and the Yolo County Sloughs, Canals, and Creeks Management Program. Three integrated actions addressed six or seven objectives: the Davis–Woodland Water Supply Project, the Cache Creek Flood Management Integrated Project, and the Yolo Bypass Integrated Project. (Table 5-7)

Two integrated actions addressed more than 16 issues: the Cache Creek Flood Management Integrated Project and the Cache Creek Water Management Integrated Project. Two actions addressed more than 11 issues: the Davis–Woodland Water Supply Project and the Dunnigan Integrated Project.

5.5.3 Evaluation Based on Statewide Priorities

The Sacramento River (West Bank) Integrated Project addresses eight of the statewide priorities. The Cache Creek Water Management Integrated Project and Yolo Bypass Integrated Project each addressed seven of the statewide priorities (Table 5-8). The Cache Creek Flood Management Integrated Project, Putah Creek Integrated Project, and Yolo County Sloughs, Canals, and Creeks Management Program addressed six priorities (Table 5-8).

A brief discussion of how each of the statewide priorities is addressed is provided below.

Priority 1: Reduce conflicts between water users.

One of the major advantages of integrated water resource planning is the potential to reduce conflicts between water users. By integrating water management actions benefiting different water users into an integrated package, the realization of mutual benefits is possible. Overall integrated actions showed therefore greater potential to reduce conflicts among water users in the County (Table 5-8). This priority is addressed by eight integrated actions (Table 5-8).

Priority 2: Implementation of TMDLs established or under development.

A major water quality issue in Yolo County and the Sacramento-San Joaquin River Delta (Delta) and San Francisco Bay is the level of inorganic and methyl mercury in Cache Creek. Mercury mines along the headwaters of Cache Creek provided a significant source of mercury used in gold mining in the 19th century. The Cache Creek drainage basin only covers 4 % of the Sacramento River watershed, but it provides up to 50% of the total mercury transported downstream in the Sacramento River (Foe and Croyle 1999).

One of the objectives of this IRWMP is to assist in meeting the Total Maximum Daily Load (TMDL) for mercury being developed in the Cache Creek watershed (Objective 8). A staff report was published in 2004 (Cooke *et al.* 2004), and further planning efforts are under way.

The Cache Creek System Mercury Remediation Project (WQ1) addresses this statewide priority and Objective 8.

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A TMDL for mercury is also being developed for the Sacramento-San Joaquin Delta. Implement Best Management Practices (BMPs) to manage the Yolo Bypass wetland and agricultural fields has the potential to reduce production of methyl mercury, the biologically active form. The Yolo Bypass Integrated Project includes a component to develop BMPs to reduce elemental and methyl mercury (Table 5-8).

Priority 3: Implementation of RWQCB Watershed Management Initiative Chapters plans, and policies.

The Central Valley Chapter of the Watershed Management Initiative (WMI) identifies several priority problems related to beneficial uses of waterways that apply specifically to Yolo County, including problems in the Cache Creek and Delta subwatersheds. Invasive species, degraded riparian habitat, and mercury contamination were identified for the Cache Creek subwatershed. The WMI suggests that support of collaborative stakeholder-driven efforts should be supported to address these issues. This IRWMP considers invasive species, habitat restoration and mercury contamination, and is therefore consistent with the WMI.

Contamination by mercury and pesticides is identified in the WMI as an issue in the Delta. The WMI suggests that further study is needed to address these issues and that management practices need to be developed. The implementation of the mercury TMDL for Cache Creek (see Priority 2), is expected to contribute to addressing the mercury problem in Cache Creek and the Delta. Much of the research is funded through the CALFED Bay-Delta program (see Priority 8). This priority is addressed by seven integrated actions (Table 5-8).

Priority 4: Implementation of the SWRCB's Nonpoint Source Pollution Plan.

This IRWMP identifies actions to reduce nonpoint source pollution (Objective 11). These actions include management measures identified in the *Nonpoint Source Program Strategy and Implementation Plan 1998-2013 (PROSIP)* (State Water Resources Control Board and California Coastal Commission 2000). Specifically, this IRWMP considers the following management measures identified in the Nonpoint Source Pollution Plan: erosion and sediment control, confined animal facilities wastewater and runoff, nutrient management, pesticide management, irrigation water management, and wetlands, riparian areas and vegetated treatment systems. This priority is addressed by four integrated actions (Table 5-8).

Priority 5: Assist in meeting Delta Water Quality Objectives.

Yolo County's major waterways, including Cache Creek, Putah Creek and Willow Slough, drain toward the Yolo Bypass and from there into the Delta. Potential actions identified in this IRWMP that improve water quality in Yolo County streams also improve water quality in the Delta, and thereby assist in meeting Delta water quality objectives. This priority is addressed by five integrated actions (Table 5-8).

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Priority 6: Implementation of recommendations of the Floodplain Management Task Force, Desalination Task Force, Recycling Task Force, or State Species Recovery Plan.

Recommendations of the Floodplain Management Task Force, Recycling Task Force and contribution to the recovery of sensitive species are all part of this IRWMP. In particular, the potential integrated actions that address flood management and storm water discharge in this IRWMP are multi-objective projects, as recommended in the California Floodplain Management Task Force’s (2002) *Final Recommendations Report*.

This IRWMP also includes a comprehensive wastewater recycling plan for the county and wastewater recycling development projects for Winters, Dunnigan, Esparto, Madison, Woodland, Davis and UC Davis, as potential actions consistent with the Recycled Water Task Force (2003) Report.

This IRWMP includes potential actions for aquatic and riparian ecosystem enhancement and water quality improvement that, when implemented, will contribute to recovery of sensitive species. This priority is addressed by seven integrated actions (Table 5-8).

Priority 7: Address environmental justice concerns.

This IRWMP includes several potential actions that would improve facilities in disadvantaged communities, according to the Proposition 50 Guidelines. When implemented, these actions would provide funding for improved wastewater treatment, storm water drainage, or flood protection in these communities.

Within Yolo County there are two communities considered disadvantaged based upon the criteria set forth in the Proposition 50 Guidelines. These are the East Yolo County and Knights Landing County Census Designations (CCD). The Knights Landing CCD includes the towns of Dunnigan and Yolo, and the East Yolo CCD includes a strip of land along the Sacramento River from the north County line to Clarksburg, including West Sacramento.

Although they may not meet criteria set forth in the Proposition 50 Guidelines, other communities such as Esparto and Madison, are disadvantaged in that they have failing or deficient infrastructure or drainage and flooding problems that require attention.

The Cache Creek Water Management Integrated Project includes potential projects to upgrade the wastewater treatment systems of Madison and Esparto. This IRWMP also includes a potential action to improve the old wastewater treatment infrastructure of the Town of Yolo. The Dunnigan Integrated Project included potential actions that would upgrade the wastewater infrastructure of Dunnigan, improve storm water drainage and flood management, and improve water supply reliability.

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The Sacramento River (West Side) Integrated Project includes a number of potential actions that would improve flood management and storm drainage in communities along the Sacramento River, including and disadvantaged communities as defined by the Proposition 50 Guidelines.

This priority is addressed by three integrated actions (Table 5-8).

Priority 8: Assist in achieving one or more goals of the CALFED Bay-Delta Program.

Each of the four resource management goals of the CALFED Bay-Delta Program (2000) identified in the Programmatic Record of Decision is addressed by potential actions in this IRWMP. The four goals are:

Water Supply Reliability – Expand water supplies to ensure efficient use of the resource through an array of projects and approaches.

Water Quality – Improve water quality from source to tap for the 22 million Californians whose drinking water supplies come from the Bay-Delta watershed.

Ecosystem Restoration – Improve the health of the Bay-Delta system through restoring and protecting habitats and native species.

Levee System Integrity – Improve Bay-Delta levees to provide flood protection, ecosystem benefits, and protect water supplies needed for the environment, agriculture, and urban uses.

This priority is addressed by all integrated projects (Table 5-8).

5.6 Selection of Actions for Advanced Investigation and Development

The WRA TC selected the Cache Creek Integrated Project (the Cache Creek Flood Management Integrated Project and Cache Creek Water Management Integrated Project combined) for advanced investigation and development. This combined integrated action each addressed more than 32 water management issues.

The Cache Creek flood management issue also emerged during the community workshops as the issue of greatest concern to the community members.

Based upon the qualitative evaluation of potential actions, the WRA agreed to allocate planning grant funds to further develop and refine selected component actions of the Cache Creek Integrated Project.

Table 5-1. Foundational Actions

Table 5-2. Water Supply and Drought Preparedness Actions

Table 5-3. Water Quality Actions

Table 5-4. Flood Management and Storm Drainage Actions

Table 5-5. Aquatic and Riparian Ecosystem Enhancement Actions

Table 5-6. Recreation Actions

Table 5-7. Evaluation of Potential Actions

Table 5-8. Statewide Priorities Addressed by Potential Actions

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Table 5-1 – Foundational Actions

ID	Title	Related Categories*	Description	Geographic Area
FA1	Yolo County Groundwater Monitoring Program	WS, WQ	YCFCWCD, in cooperation with other local, county, state, or federal water resource agencies, developed the framework and guidelines for an ongoing, countywide Groundwater Monitoring Program. While future funding contributions need to be established, this program and its associated database, serve as the basis and clearing house for countywide groundwater monitoring coordination and information dissemination.	Countywide
FA1.1	Dunnigan Area Groundwater Monitoring Enhancement Program	WS, WQ	The Dunnigan Water District, through its Groundwater Management Investigation (October 2005) determined the need for construction of dedicated multiple completion monitoring wells to facilitate obtaining water level and water quality data for specific aquifers. The existing monitoring program is based on production wells that are screened over multiple aquifers. Additionally, the deep aquifer in the Dunnigan area has not been utilized and may offer potential for additional water supply depending upon the quality. Construction of new multiple completion monitoring wells would enable the District to assess the potential of the deep aquifer.	Colusa Basin Drain
FA1.2	UC Davis Groundwater Enhancement Program	WS, WQ	UC Davis is improving its understanding of its use of groundwater, by conducting groundwater investigations such as assessment of long-term yield and sustainability of the deep aquifer, development of a groundwater model to evaluate the impact of pumping at current and higher levels, and considering the joint impact of pumping by the City of Davis. UC Davis is also monitoring groundwater and will be replacing existing groundwater capacity (replacing wells) as the existing wells age.	Davis
FA1.3	City of Woodland Groundwater Enhancement Program	WS, WQ	Demands on the City of Woodland's groundwater supply are increasing while water quality issues are affecting some groundwater wells. Woodland has the potential to divert Sacramento River water under the joint water rights filing and put it to beneficial use. The primary concept behind this action is to divert Sacramento River water, perhaps through an agreement with RD 2035, and convey it to lands adjacent to the city for irrigation use in lieu of groundwater. This would leave additional water in groundwater storage for the City's wells. A secondary part of this action is additional investigation and possible utilization of the deep aquifer in the Woodland area to provide higher quality water and supplement the intermediate aquifer currently tapped by the City's wells.	Woodland

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Table 5-1 – Foundational Actions

ID	Title	Related Categories*	Description	Geographic Area
FA2	Yolo County Surface Water Monitoring Program	WS, WQ, FM, AR	As part of the development of the Groundwater Monitoring Program, the Water Resources Information Database (WRID), includes a module for surface water monitoring data. A comprehensive program should be established to collect, input, quality control and report on all of the various surface water flow and quality parameters that are being collected by the various local, county, state, or federal water resource entities. The County's program of monitoring turbidity and suspended sediment needs to be incorporated into the monitoring program. The program would also identify data needs and promote ongoing regular monitoring by participating agencies.	Countywide
FA3	Yolo County Subsidence Monitoring Program	WS, WQ, FM	The Yolo County GPS Subsidence Monitoring Program recently completed its third triennial countywide survey of land surface elevations. The survey results are indicating that significant subsidence continues to occur in many areas of the county. The subsidence seems to be generally correlated with areas of groundwater pumping. However, there are questions with regards to other causes of subsidence and data interpretation. The 2005 subsidence results report contained a summary of 14 recommendations and their implementation status. Because of the importance of subsidence effects on groundwater use planning, the programs should be continued and implementation of key recommendations should be accelerated.	Countywide
FA4	Yolo County Groundwater Modeling Program	WS, WQ	YCFCWCD is developing a countywide Integrated Ground and Surface Water Model using IGSM. This modeling tool is available for use by qualified agencies and individuals to assist them in validating water management planning scenarios.	Countywide
FA4.1	City of Davis/UC Davis Groundwater Model Enhancement Program	WS, WQ	Davis and UC Davis have participated in joint groundwater management activities for several years and are in the process of developing a groundwater management plan (GWMP) for their service areas. YCFCWCD is also developing a GWMP for areas within its jurisdiction, including Davis and UC Davis. Under mutual agreement between the parties, the Davis-UC Davis GWMP addresses groundwater management needs specific to the Davis-UC Davis service areas. These service areas are not directly included or managed under YCFCWCD's GWMP. YCFCWCD is also developing a	Davis

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Table 5-1 – Foundational Actions

ID	Title	Related Categories*	Description	Geographic Area
			countywide Integrated Ground and Surface Water Model using IGSM. This model includes the Davis area. The purpose of the Davis Area Groundwater Model is to support implementation of the Davis-UC Davis GWMP by providing a much higher modeling resolution than the IGSM model within the Davis-UC Davis service areas. The Davis Area Groundwater Model will be developed to be consistent with the countywide IGSM, but will have a more detailed representation of the Davis and UC Davis production wells and aquifer conditions around the wells.	
FA4.2	City of Woodland Groundwater Model Enhancement Program	WS, WQ	As part of the 1997 Water Master Plan, a Yolo Woodland Aquifer Model (YWAM) was developed. The YWAM was a refinement of the 1996 model developed for YCFCWCD for use in planning the proposed Cache Creek Recharge and Recovery Project. Geotrans later updated the model to provide greater detail and used the updated model to evaluate remote well field alternatives. Woodland now needs to extend the model into deeper zones and use the model to accomplish the following tasks: <ul style="list-style-type: none"> • Predict the effects of new surface water for in-lieu recharge and direct municipal use • Model the effects of planned new wells • Evaluate how to minimize drawdown, energy costs, and subsidence • Model the transport of dissolved minerals, especially nitrate 	Woodland
FA6	Aquatic Habitat and Fish Opportunity Assessment	WS, WQ, FM, AR, R	To provide baseline and ongoing data related to aquatic habitat and fisheries in the region, a comprehensive monitoring program should be established. Similar to the groundwater and subsidence programs, it is envisioned that this would be a multi-agency program. Initial objectives of the program would be to identify and report on what is known and/or currently being monitored, as well as what critical data gaps exist. This information (data) is foundational to all five categories of the IRWMP.	Countywide
FA7	Water Resources Information Database Enhancement Program	WQ, AR	In 2004, YCFCWCD, in cooperation with other local, county, state, and federal water resource agencies, completed the development of a Water Resources Data Management System (WRID). While currently used primarily for groundwater level and quality data, it includes a surface water data module. The WRID needs to be populated, on an on-going basis, with new data, be quality controlled, and distributed to other agencies and the public.	Countywide

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Table 5-1 – Foundational Actions

ID	Title	Related Categories*	Description	Geographic Area
FA8	SCADA Network Enhancement Program	WQ, FM, AR	YCFWCWD is developing a region-wide (Lake and Yolo Counties) broadband based SCADA (Supervisory Control and Data Acquisition) network. While its primary purpose is to monitor and control the District's "transmission and delivery" system, it is flexible enough and has the capacity to serve flood control, water quality and environmental monitoring purposes. This program requires ongoing maintenance and modernization.	Countywide
FA11	Topographic Mapping (LiDAR) Project		Development within Yolo County has substantially altered the land form from what is represented on quadrangle maps prepared by the U.S. Geological Survey. This is the consequence of the construction of infrastructure, leveling of land for agricultural production, the relocation of waterways, and land subsidence. Good topographic information is essential for sound planning thus topographic mapping of the Valley portion of Yolo County is needed. This can be accomplished in a cost effective manner using LiDAR (Light Detection and Ranging) technology to create a Digital Surface Model or topographic map.	Countywide
FA14	Development of HCP/NCCP	AR	The Yolo County Habitat Conservation Plan/Natural Communities Conservation Plan needs additional funding to be completed in the next 2-4 years. The HCP/NCCP will identify priority areas for protection of endangered species habitat.	County Wide
FA16	Lower Cache Creek Aerial Photography Project	AR	Yolo County contracts for aerial photography of the lower Cache Creek watershed every year.	Cache Creek

Note:

* FA = Foundational Action, AR = Aquatic and Riparian Ecosystem Enhancement, FM = Flood Management and Storm Drainage, R = Recreation, WQ = Water Quality, WS = Water Supply and Drought Preparedness

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WS1	City of Winters Groundwater Supply Project		The City of Winters relies solely on groundwater for its municipal water supply. It is not known at this time whether or not the City can sustain build out of its General Plan relying on groundwater. An evaluation of the capability of the groundwater resources to support build out of the City is needed. This can be accomplished using the IGSM that is currently being prepared by YCFCWCD.	Putah Creek
WS2	Dunnigan Area Water Supply Project		New groundwater wells and/or surface water supply. To serve any new growth in Dunnigan and to address A48nitrate contamination, Dunnigan will need to drill new wells that draw from deeper in the aquifer or request additional surface water supply from the U.S. Bureau of Reclamation via the Tehama-Colusa Canal.	Colusa Basin Drain
WS3	Dunnigan Area Water Storage Program		A variety of alternatives (see below) can be investigated utilizing the topography of the Dunnigan Hills for water supply and flood management benefits. These alternatives have all been considered and studied to varying degrees.	Colusa Basin Drain
WS3.1	County Road 19 Water Storage Project	AR, FM, R	An approximately 16,000 acre-foot off-stream reservoir located on County Road 19, one-mile west of County Road 94B and near the terminus of YCFCWCD's Clover Canal. This reservoir has been studied as part of the Yolo-Zamora/YCFCWCD conjunctive use program. The new water that will be developed can be used to the benefit of agricultural, environmental and municipal interests. This project will be most effective if linked to YCFCWCD's comprehensive conjunctive water use program (WS-16).	Cache Creek
WS3.2	Oat Creek Water Storage Project	FM	A reservoir at Oak Creek in conjunction with extending the Tehama Colusa Canal has been investigated as part of the Yolo-Solano Supplemental Water Supplies Reconnaissance-Level Investigation of Alternatives (May 1992). This reservoir would receive inflow from both local sources and from a Sacramento River diversion. The water could be used for urban, environmental or agricultural benefits. Additionally, landowners in the upper watershed of Oat Creek have discussed with YCFCWCD the potential of constructing a small reservoir that would supplement and enhance their existing groundwater supply.	Colusa Basin Drain
WS3.3	Bird Creek Water Storage Project	FM	A reservoir at Bird Creek in conjunction with extending the Tehama Colusa Canal has been investigated as part of the Yolo-Solano Supplemental Water Supplies	Colusa Basin Drain

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
			Reconnaissance-Level Investigation of Alternatives (May 1992). This reservoir would receive inflow from both local sources and from a Sacramento River diversion. This water could be used for urban, environmental or agricultural benefits.	
WS4	Esparto Water Supply Project	WQ	Explore sources of different or additional water supply (and improved water quality) to accommodate existing and potential growth in Esparto. Level of growth depends on the Yolo County General Plan Update, currently in progress. The existing system is not capable of maintaining adequate system pressures to satisfy normal demands and supplying an adequate fire flow. Furthermore on occasion the system has failed to provide water that met the municipal drinking water bacteriological water quality standards. This project would involve the design and construction of new well(s) and/or storage facilities, booster pumping facilities and distribution mains.	Willow Slough
WS5	Madison Water Supply Project	WQ	Madison water supply and quality improvements should be considered in conjunction with the Esparto water supply (WS4) investigation for potential combined economic, quality and reliability benefits. The existing water system includes two water wells, distribution mains and a hydropneumatic tank. One of the existing wells has elevated nitrate levels, and a replacement well has been drilled. This new well will be equipped with a pump and motor in the near future, and a storage tank will be constructed adjacent to the well. With these planned improvements the remaining deficiency is that the distribution system is primarily constructed of aged asbestos-cement pipe, which must be repaired relatively frequently.	Willow Slough
WS6	North Davis Meadows Water Supply Project	WQ	One of the two wells serving the North Davis Meadows development has failed in May 2006 due to D63high levels of nitrate. Citizens of North Davis Meadows assessed themselves to create a fund that the citizens can use for a new well. The development is not within the City of Davis, and is served by a community water supply system. Potential means of correcting elevated concentrations of nitrate in the well water include drilling new wells that obtain water from deeper formations, or expanding the City of Davis water service area to include this development.	Davis

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WS7	RD 2035 Sacramento River Diversion and Conveyance Facilities Project	AR	A new diversion structure and pumping station will replace the existing facility on the Sacramento River operated by RD 2035. The new diversion facility meets the latest criteria for fish screen design. The purpose of the project is to position RD 2035 so that its Sacramento River diversion is in compliance with federal and state fish screening criteria, and to ensure a reliable supply of water to the agricultural users on Conaway Ranch. The design and environmental studies have been completed for this project. The remaining effort needed now is to secure project approval from the state and federal regulatory and funding agencies, secure project funding and construct the facilities. There are plans under consideration to increase the capacity of the siphon under Highway 16, and convert the open channel that parallels Highway 16 across the Yolo Bypass into a piped transmission system to eliminate the potential risk of damage the channel now faces each year that the Yolo Bypass floods.	Sacramento River, Yolo Bypass
WS8	Davis - Woodland Water Supply Project	WQ	The cities of Davis and Woodland and UC Davis are members in this regional project to bring surface water from the Sacramento River to supplement the existing groundwater supply now used exclusively by all three agencies. Feasibility studies have been completed on the project, and environmental analysis and documentation is now underway. It is expected that the environmental process will be completed in about two years, and a decision will then be made by all parties on how to proceed with the project. Diversions from the Sacramento River are being considered at several locations, and RD 2035 could be involved eventually in the project if a diversion using their planned new screened pumping facilities is selected as the preferred option. This project also includes securing area of origin water rights and purchase of supplemental surface water to fill the anticipated deficits in many years in the summer months.	Davis, Woodland, Sacramento River
WS9	UC Davis Water Conservation Program		UC Davis is integrating water conservation efforts into its current water use program, which will eventually include remote control of turf irrigation on the campus. Ongoing efforts to expand the campus land uses will also be considering water conservation Best Management Practices (BMPs) in their development including the new neighborhood planned in the west Davis area, and the future research park.	Davis

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WS12	City of Woodland Water Meter Retrofit Program		In January 1, 2005, the State of California passed AB 2572 that requires certain water purveyors, including the City of Woodland, to install water meters on all unmetered service connections within their service area by 2025. Currently only non-residential units, and all residential units constructed since 1992, are metered. This project will involve retrofitting water meters on residential units constructed prior to 1992.	Woodland
WS13	Capay Dam Reliability/Restoration Project		Capay Diversion Dam (CDD) was built in 1914 and modified in 1994, with a 475-foot-long inflatable dam. The water diverted at the CDD is delivered throughout the canals and sloughs of western Yolo County and sustains a \$300 million agricultural economy as well as providing significant habitat value. In February 2003, seepage was seen beneath the CDD and emergency repair work was performed to stabilize the facility. A thorough structural investigation is required to determine needed repair and stabilization work. In addition, gate modernization, automation, and fish passage investigation work should be conducted.	Cache Creek
WS14	Moore Siphon Reliability/Restoration Project		The Moore Siphon conveys irrigation water from the north side of Cache Creek (Alder Canal) to the south side (Moore Canal). Through the Moore Siphon, YCFCWCD delivers water to approximately 15,000 acres of cropland (12% of its irrigation service area). This water also makes a significant recharge contribution to the City of Woodland's groundwater supply. Due to the age and exposure of the 72" corrugated metal pipe, as well as Cache Creek erosion issues at both ends of the siphon, the siphon will either need to be replaced or removed in the near future.	Cache Creek
WS16	Comprehensive Conjunctive Water Use Program	AR, R, WQ, FM	In 1993, YCFCWCD filed an application to utilize up to 94,000 acre-feet of Cache Creek "winter water." This project could include a variety of methods (recharge/recovery, off-stream storage and canal modification) to effectively store and use this water in the general area between the Capay Dam and the Cache Creek Settling Basin. The new water that will be developed can be used to the benefit of agricultural, environmental and municipal interests. A significant amount of work has already been completed on this	Cache Creek

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
			project including establishment of a groundwater monitoring program, development of a regional groundwater model, and preliminary investigations into associated water rights, engineering, economic, and environmental issues.	
WS17	Regional Irrigation / Tailwater Recovery Systems Program	WQ, AR, R	Small (20 to 200 acre-feet) reservoirs could be incorporated into YCFCWCD’s water delivery (and Slough) system. These "buffer" reservoirs would contribute to improved water delivery management and water quality improvements through sediment trapping. Habitat features would be incorporated into the design. Cache Creek rafting interests would benefit from increased storage release flexibility. Some appropriate locations have been identified and discussions with landowners are taking place. Regional Water Quality Control Board Staff have expressed support for this approach as part of the Ag Waiver program.	Cache Creek, Willow Slough
WS18	Capay Valley Surface Water Supply Project		The Rumsey Band of Wintun Indians have expressed an interest in developing a water delivery turnout near Brooks (inside YCFCWCD’s service area) to provide Cache Creek surface water to lands not currently receiving surface water. This would provide a reliable supply of water to Class A soils in that area in addition to protecting and supplementing existing groundwater resources.	Cache Creek
WS19	Thurston Lake Pump Storage Project	FM	Thurston Lake is a natural lake located near the southwest end of Clear Lake. The topographic configuration of land forming Thurston lake creates the potential for storing up to 300,000 acre-feet of water. The concept that has been examined involved the pumping water from Clear Lake into Thurston Lake in the late fall to spring period for release later in the season. Both Lake and Yolo County interests would realize water supply and flood control benefits. A number of reports describing this concept are available.	Cache Creek
WS20	Clear Lake Upstream Storage Projects	FM	Lake County Flood Control and Water Conservation District has compiled a list of potential water storage projects upstream of Clear Lake that could supply some measure of water supply and flood management benefits to Yolo County interests.	Cache Creek
WS21	Comprehensive Drought Preparedness Program	WQ	The period of record for hydrologic or climate data is relatively short. The results of tree-ring studies indicate that Northern California has experienced dry periods that were	Countywide

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
			more significant in both duration and severity than what is recorded and has been the basis for water supply planning. Similar to the wisdom of flood preparedness, preparedness for drought is prudent as well. Knowing that certain areas of Yolo County are more susceptible to subsidence than others, it would be prudent to formulate a protocol or strategy for management of the available water resources for the overall well being of the community of Yolo County.	
WS22	Colusa Basin Drain Water Supply Project		During many months of the year, water from the Colusa Basin Drain could be diverted for storage and use in Yolo County rather than being discharged to Sacramento River at Knights Landing. In spring months, available water could be stored in a new reservoir for use later in the irrigation season by YCFCWCD. During late spring through early fall months, a portion of the water in the Drain could be sent down the Ridge Cut into Tule Canal for irrigation use and storage by downstream users. This would provide increased water supply reliability to users, enhanced wildlife habitat, and water quality related benefits to many stakeholders. Impacts to downstream water users would need to be evaluated. Impacts to downstream water users would need to be evaluated. Implementation funding could potentially be available through a number of sources.	Colusa Basin Drain
WS23	Tehama-Colusa Canal Extension Project		Extending the Tehama-Colusa canal could provide additional environmental, agricultural, and municipal water supplies to Yolo County.	Colusa Basin Drain
WS24	YCFCWCD Distribution System Canal Extensions Project	AR, R	As part of its comprehensive conjunctive water use program (WS16), YCFCWCD has been investigating a number of areas where it could extend or modify its distribution system (canals) to deliver additional surface water during years of abundance. These modifications would enhance and protect the region's groundwater resource, contribute to the riparian corridor, and provide farmers with a cost- and energy-efficient alternative to pumping groundwater. YCFCWCD has initiated discussions with a group of landowners and growers to determine the engineering, environmental, and economic feasibility of various canal extension configurations. To date, the following canals have been identified for consideration; Brooks Canal, Hungry Hollow Canal, Magnolia Canal, China Slough, Town Ride, Moore Extension, Maple Bypass, and Willow Slough Bypass.	Willow Slough, Colusa Basin Drain

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Table 5-2 – Water Supply and Drought Preparedness Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WS25	Sites Reservoir Project		The building of Sites Reservoir may enhance the viability of several projects described above, and would provide region-wide benefits. The DWR is leading the effort to develop the Sites Reservoir and a number of WRA member agencies are participating and should continue being involved in this project.	Countywide
WS26	Willow/University Canal Rerouting Project	WQ, AR	Reroute Willow/University Canal 100 feet north of its present course east of Road 95 where it currently runs along the top of the bank to enhance the security of the water supply for irrigation of downstream crops and to maintain the integrity of the north bank of Putah Creek against washouts. The area between Willow Canal and the top of the north bank of Putah Creek in this reach should be set aside under a conservation easement. Areas upstream of Road 95 between Willow Canal and the top of the north bank of Putah Creek have low agricultural value and high wildlife value and should be purchased for conservation easements where sellers are willing. This area within Russell Ranch, the largest single property, has already been set aside for conservation.	Putah Creek, Davis
WS27	Linden Road Water Intake Plant Replacement		Replace existing outdated water intake pumping facility with new intake and discharge pipelines, pump, and electrical panel. New pipeline invert through the levee would be above 200-year water surface. The intake would have fish screens. The old pipeline would be removed and the levee would be restored to meet current USACE requirements.	Sacramento River
WS28	West Sacramento Reclaimed Water Use Standards		Adopt and promulgate the Sacramento County Sanitation District standards for irrigation systems that can use reclaimed or other non-potable water for landscaping or parks.	Sacramento River

Note:

* AR = Aquatic and Riparian Ecosystem Enhancement, FM = Flood Management and Storm Drainage, R = Recreation, WQ = Water Quality, WS = Water Supply and Drought Preparedness

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Table 5-3. Water Quality Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WQ1	Cache Creek System Mercury Remediation Project	WS	The Central Valley Regional Water Quality Control Board recently adopted the Cache Creek mercury TMDL and is working on the Delta mercury TMDL. Mercury is present in Cache Creek and the Delta as a result of historic mining activities, not local actions. One of the key activities under consideration is to change the groundwater and drainage conditions at upstream abandoned mines, thereby eliminating the source of much of the methylmercury to Cache Creek. Local entities need funding to implement actions to reduce mercury levels in Cache Creek and the Yolo Bypass.	Cache Creek
WQ2	Yolo County Wastewater Recycling Program	WS	All of the individual wastewater recycling programs under the WQ2 listing should be studied for appropriate linkages and joint economies of scale and administration.	Countywide
WQ2.1	City of Winters Wastewater Recycling Project	WS	The City of Winters Wastewater Treatment Facility is located in a primarily agricultural area on County Road 32, northeast of the City of Winters. Wastewater is treated in ponds and applied to 170 acres of grassland. The grass is periodically harvested. Treated wastewater could potentially be used to irrigate other agricultural crops, golf courses and other open space. An upgrade to the treatment facility may be required, depending upon the type of wastewater re-use. Seventy percent of municipal water currently goes to irrigation.	Putah Creek
WQ2.2	Dunnigan Area Wastewater Recycling Project	WS	As a result of problems with nitrate contamination and the need to serve a growing population, the existing residents of Dunnigan will need to move from septic systems to a waste water treatment plant in the next 10 years.	Colusa Basin Drain
WQ2.3	Esparto Wastewater Recycling Project	WS	The Esparto Wastewater Treatment Facility is owned and operated by the Esparto Community Services District. The facility consists of ponds that are near or at capacity. Treated wastewater could potentially be used to irrigate agriculture, golf courses and other open space. An upgrade to the treatment facility may be required, depending upon the type of wastewater re-use.	Willow Slough
WQ2.4	Madison Wastewater Recycling Project	WS	The Madison Wastewater Treatment Facility is owned and operated by the Madison Community Services District. The facility consists of ponds that are near or at capacity. Treated wastewater could potentially be used to irrigate agriculture, golf courses and other open space. An upgrade to the treatment facility may be required, depending upon the type of wastewater re-use.	Willow Slough

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Table 5-3. Water Quality Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WQ2.5	City of Woodland Wastewater Recycling Project	WS	The City of Woodland Wastewater Treatment Plant (WWTP) is located southeast of Woodland, approximately one-half mile east of the intersection of Gibson Road and County Road 102. Wastewater is currently treated in an activated sludge process that produces secondary effluent; however, tertiary filtration and UV disinfection facilities are currently under construction. Following the completion of these facilities the treated wastewater should be suitable for most potential beneficial uses of wastewater effluent, including water supply for reclamation wetlands, agricultural irrigation, irrigation of golf courses, and other open space.	Woodland
WQ2.6	City of Davis Wastewater Recycling Project	WS	The City of Davis Water Pollution Control Plant (WPCP) is located primarily in an agricultural area on the western side of the Yolo Bypass, approximately three miles northwest of the City of Davis. Wastewater is currently treated by primary sedimentation, oxidation ponds, overland flow, and chlorination/dechlorination. Treated wastewater is discharged to the Willow Slough Bypass just south of the main plant facilities, to the Davis Restoration Wetlands and then to the Yolo Bypass. The Davis Restoration Wetlands were designed and constructed by the USACE to create waterfowl habitat, and have been managed by the City since its completion. The wetlands receive a combination of treated wastewater effluent and storm water to maintain a diverse wildlife habitat. The facility is also the largest constructed wetland in the Sacramento Valley with completely native species. The City of Davis will continue to assess the potential for other beneficial uses of its wastewater effluent. Potential beneficial uses may include water supply for additional reclamation wetlands, agricultural irrigation, and irrigation of golf courses and other open space. An upgrade to the treatment facility may be required, depending upon the type of wastewater re-use.	Davis
WQ2.7	UC Davis Wastewater Recycling Project	WS	UC Davis will continue to assess the potential for reuse of effluent from its wastewater treatment plant. The current discharge is to Putah Creek south of I-80, and withdrawal of all or a portion of this discharge from Putah Creek may be controversial. To proceed in a concrete manner would require UC Davis to find funding sources for a pilot project, and this process would likely begin with a feasibility study. A potential element of this effort could include pumping highly treated effluent from the existing wastewater treatment plant back to the Arboretum waterway to help control water quality.	Davis

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Table 5-3. Water Quality Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WQ3	UC Davis Groundwater Remediation Project	WS	UC Davis will continue efforts to clean up the contaminated groundwater underlying the landfill and the south campus disposal site. These efforts have defined plans, compliance requirements and ongoing action plans.	Davis
WQ4	Agricultural/Urban Storm Runoff Assessment Program	FM	Storm runoff from agricultural land that enters the storm drainage system for urban areas can be problematic with respect to the sediment and chemicals that may be associated with the runoff. Recognizing that the requirements for managing the quality of runoff from agricultural land and from urbanized areas attention should be given to minimizing the commingling of the storm runoff from the two sources. This is particularly important for the City of Woodland however may relate to other communities and neighboring areas as well. This agricultural-urban interface should be assessed for communities throughout Yolo County.	Countywide
WQ5	City of Woodland Wastewater Ponds Reclamation Project		The wastewater ponds north of the Gibson Channel are no longer required for treating the City of Woodlands municipal wastewater. This area which comprises about 135 acres offers the opportunity for reclamation for beneficial purposes. Accordingly, an evaluation of the alternatives for reclamation should be performed to determine the most effective reclamation plan for the area.	Woodland
WQ6	Outfall Channel Environmental Enhancement Project	FM, AR	The channel between the south levee of the current Cache Creek Settling Basin and the south levee of the Settling Basin that existed until 1992, forms the Outfall Channel which is approximately 2 miles in length and is the drainage channel for the City of Woodland and the agricultural land within the watershed adjacent to the City. The City of Woodland, by implementing its storm drainage master plan will provide storm water quality treatment upstream of the Outfall Channel and before it is commingled with storm runoff from the agricultural area. The land between the new and old levees and outside the existing outfall channel offers opportunity for significant aquatic habitat enhancement in conjunction with water quality treatment of the drainage water.	Woodland, Cache Creek
WQ7	Willow Slough Bypass Environmental Enhancement Project	AR, WS	Some landowners have expressed an interest in partnering with YCFCWCD to develop the "bench" in the Willow Slough Bypass into a series of wetland ponds. A seasonal weir would be installed during the irrigation season near County Road 102. This weir would back up the Slough water (all the slough water is irrigation return flows during the irrigation season) onto the bench and into a series of linear wetland ponds that would run	Willow Slough

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Table 5-3. Water Quality Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
			along the Slough. This would achieve three objectives: sediment removal to assist in compliance with the Ag Waiver Program, managed habitat development, and reduced pumping costs to lift delivery water from the bottom of the Slough. The project would need to be managed and maintained so as not to interfere with the flood management requirements of the Bypass.	
WQ8	Groundwater Nitrate Reduction Program		Study of nitrate contamination that threatens wells serving existing communities. Levels of nitrates exceeding human health standards have been identified in Dunnigan and Davis over the past ten years as a result of fertilizer runoff and septic systems. Levels of nitrates in wells serving Woodland are approaching human health standards. A study of sources of and trends associated with nitrate contamination may help identify ways to slow or stop the spread of contamination before municipalities have to close wells. Modifications to agricultural and municipal wells will be one of the methods evaluated for slowing the downward migration of nitrate.	Countywide
WQ9	Yolo Waste Water Treatment Infrastructure Improvements		Improved wastewater treatment. The community of Yolo's infrastructure is old, and may be need to be replaced.	Colusa Basin Drain
WQ10	Sacramento River Water Facilities Review Program		Countywide, develop comments and opinions related to Environment Impact Reports (EIR) on new surface water treatment facilities and water contracts within the Sacramento River Watershed that affect existing and future Yolo County municipal and agricultural surface water users.	Sacramento River
WQ11	Sacramento River Joint Source Water Protection Program		Project includes funding and participation in the joint source water protection program with the City of Sacramento. This program aims to reduce TOC and pesticides runoff into the Sacramento River. Includes public notification and education programs, coordination with the CRC on rice management and spill notification procedures. Funding enables monitoring for existing and new pesticides during the spring and summer discharge periods.	Sacramento River

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Table 5-3. Water Quality Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WQ13	Sacramento River Water Testing Program		Fund and implement raw water testing for Cryptosporidium and Giardia to comply with the recent federal Stage 2 Disinfection Byproduct Rule.	Sacramento River
WQ14	Ag Waiver Program		The Central Valley Regional Water Quality Control Board has adopted an "Ag Waiver" to monitor agricultural and storm water runoff and to implement BMPs to improve the quality of the agricultural and storm water runoff. Local sub-watershed groups have been formed to allow growers and landowners an alternative to obtaining individual discharge permits from the Regional Board. The Yolo County subwatershed is being lead by the Yolo County Farm Bureau with assistance and input from the Ag Commissioner, YCFCWCD, YCRCD and from the larger Sacramento Valley watershed group. The IRWMP should at a minimum endorse the goals, objectives, and methodology of the current ag waiver program. Requirements of the newly imposed Agricultural/irrigated Lands Conditional Waiver Program require monitoring of certain water quality parameters. Funding is needed to assist landowners in complying with these water quality monitoring efforts.	Countywide
WQ15	Demonstration Farm Project		Establish a demonstration farm to demonstrate agricultural practices that reduce runoff and reduce water use (e.g., drip and certain land treatments). Experienced farmers could give advice about these practices to other farmers. Demonstrate how the Watershed Management Program (FM20) would be implemented.	Countywide
WQ16	Develop Best Management Practices for the Yolo Bypass Regarding Production and Transport of Elemental and Methyl mercury		Several studies looking at methylmercury are underway in the Yolo Bypass. State Dept of Fish and Game is conducting a monitoring study, UC Davis is looking at bioaccumulation and the USGS is doing a one-year study entitled. "Methylmercury cycling and export from agricultural and natural wetlands in the Yolo Bypass." A proposal for an additional study looking at Methylmercury is underway. In the next five years there will the need for: (1) additional funding will be needed in the future for studies, to further develop cost-effective BMPs to minimize the production and transport methyl mercury from rice fields and wetlands; and (2) funds to pay for monitoring required by the Delta TMDL once it is adopted.	Yolo Bypass

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Table 5-3. Water Quality Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
WQ17	Sacramento River Storm Water Sources Monitoring Program	WQ	Project includes funding for implementation of a storm water monitoring program to identify and reduce runoff contaminants from entering the Sacramento River water supply. Project consists of developing a long-term storm water monitoring program for Yolo County along the Sacramento River.	Sacramento River

Note:

* AR = Aquatic and Riparian Ecosystem Enhancement, FM = Flood Management and Storm Drainage, R = Recreation, WQ = Water Quality, WS = Water Supply and Drought Preparedness

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM1	Putah Creek Bank Stabilization Project	AR, WQ	Unstable banks of Putah Creek generate large volumes of sediment in Putah Creek. Thompson Canyon, Proctor Draw and Dry Creek are three of the main tributary channels draining from the Yolo side and all have deposited large quantities of sediment into Putah Creek over the past 50 years. Lake Solano shows encroachment of sediment across 80 percent of its width, mostly contributed by Proctor Draw and rapid encroachment of vegetation on what was previously lake surface over a recent three year interval. Farmers along Proctor Draw have lost rows of trees to this tributary. Grade control with rock weirs and removal of eucalyptus from the floor of this channel are urgent needs. Some of this sediment originates from Pleasants Creek (Solano County), but the Delta is centered on Proctor Draw. Bank stabilization can be achieved with rock vane flow deflectors, and grade control structures (rock weirs).	Putah Creek
FM2	Dry Creek Bank Stabilization Project	AR, WQ	Bank erosion along Dry Creek produces large volumes of sediment that are deposited in Putah Creek. With the large flows on Putah Creek regulated the sediment contributed from Dry Creek is prone to deposition and not being transported through the system. Alternative means of bank stabilization along various reaches of Dry Creek need to be evaluated to minimize the deposition of sediment in Putah Creek and loss of urban and agricultural land.	Putah Creek
FM3	City of Winters Storm Drainage Diversion to Putah Creek Project	AR, WQ	Management of storm runoff for the City of Winters includes the diversion of up to 1,000 cfs to Putah Creek during a 100-year storm event. The diversion of this amount of water was evaluated by the USACE several years ago and should be reevaluated. This diversion is an integral part of the City of Winters storm drainage master plan to facilitate build-out of its General Plan.	Putah Creek
FM4	Buckeye Creek Erosion/Flood Management Project	AR, WQ	Erosion of the banks along Buckeye Creek west of Interstate 5 is causing sediment deposition and flooding on property North of the Town of Dunnigan. An assessment of the causes of erosion and determination of measures to effectively mitigate or minimize the erosion is needed to arrest the problem and preserve the watershed.	Colusa Basin Drain
FM5	Knights Landing Levee Improvement Project		Levee improvements to address through seepage and underseepage problems are needed, as well as repair of a critical erosion site. Through seepage can be addressed through construction of the Mid-Valley Project, a multiple-phase USACE project. Yolo County, RD 827, RD 108, and RD 785 benefit from the Mid-Valley Project. Underseepage can	Sacramento River

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
			only be addressed once levee integrity studies are completed that will identify needed improvements. In addition, a critical erosion site at River Mile 85.6 needs to be repaired. Failure of this levee will affect Knights Landing.	
FM6	Clarksburg Levee Improvement Project		RD 307 estimates that they need to repair erosion sites on 6,500 linear feet within 6.6 miles of levees that help protect Clarksburg and the Sacramento Regional Sanitation District's Northwest Interceptor project.	Sacramento River
FM7	Sacramento River West Bank Levee Integrity Program		Underseepage studies of 75-80 miles of Sacramento River levees, as well as needed improvements identified by studies. The potential for underseepage at Yolo County's Sacramento River levees has never been studied, despite identified seepage problems. Levee failure may negatively impact West Sacramento, Knights Landing, Clarksburg, agricultural land and rural property owners, as well as the Sacramento Bypass, an integral part of the Sacramento River Flood Control Project.	Sacramento River
FM8	Knights Landing Storm Drainage/Flood Management Project		New pumping infrastructure to pump storm water and flood waters from the Knights Landing Ridge Cut Canal, benefiting existing and proposed residential areas in Knights Landing.	Colusa Basin Drain
FM9	Madison Storm Drainage/Flood Management Project		The Town of Madison has a chronic problem of flooding from storm runoff entering the town from Cottonwood Slough, the South Fork Willow Slough, and general overland flow from west and north of the town. During these events homes are flooded and the sewer system is overtaxed as well. The updated County General Plan may indicate the potential for some growth of the community. The flood hazard needs to be mitigated not only for the existing community but before additional growth is allowed to occur. An opportunity to mitigate this flood hazard may in part be provided by the Caltrans Highway 16 Safety Project, however the residual flooding that may persist needs to be addressed.	Willow Slough
FM10	Esparto Storm Drainage/Flood Management Project		Land within Esparto and adjacent lands that are planned for growth are subject to flooding under significant storm events. This is due to some extent to the capacity limitations of Lamb Valley Slough and the South Fork Willow Slough. A storm drainage/flood control master plan is needed to mitigate existing flood hazards and to provide the basis for planned growth without adversely impacting existing or new development.	Willow Slough

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM11	Caltrans Highways Hydraulic Impact Assessment Program		The hydraulic capacity of water conveyance structures constructed for the Federal and State Highways in Yolo County (Interstate 5 and 505 and State Highway 16) have created adverse impacts to storm runoff in several areas of the County. Incremental increases in the impacts occur over time by virtue of constructing pavement overlays. A comprehensive assessment of the hydraulic capacity of the structures at principal waterways is needed to address storm water management throughout the County.	Countywide
FM12	County Roads Hydraulic Capacity Assessment Program		The hydraulic capacity of water conveyance structures constructed for County Roads may not be adequate for particular waterways. A comprehensive assessment of the capacity of hydraulic structures associated with County Roads is needed to provide the framework for future structure maintenance and replacement.	Countywide
FM13	Huff's Corner Levee Repair Project		Erosion control at a critical site within a 2,500-foot levee section on the south bank of Cache Creek. The section stretches from Interstate 5 upstream to high ground at a location known as Huff's Corner. Failure of this levee could result in 1-4 feet of flooding in Woodland and the surrounding unincorporated area, affecting 15,000 residents. Control of erosion at this site is a short-term solution. Yolo County continues to work with the City of Woodland and other entities on a long-term solution to improve flood protection in this area.	Cache Creek
FM14	Reconciliation of Cache Creek Settling Basin Future Modifications and "Original" South Levee Project		The Cache Creek Settling Basin is a feature of the Sacramento River Flood Control Project. The Settling Basin was modified substantially in 1992 to increase its efficiency and capacity for trapping sediment transported by Cache Creek to preserve the flood carrying capacity of the Yolo Bypass. The Settling Basin has created adverse drainage conditions for the City of Woodland as well as drainage and seepage issues to adjacent land. A new south levee was constructed approximately 200 feet north of the south levee that functions as part of the facility prior to the 1992 modification. As a consequence the "old" south levee has effectively been abandoned by the USACE and the State Reclamation Board as part of the Sacramento River Flood Control Project. Resolution is needed regarding the responsibility for ownership and maintenance of the "old" south levee which remains part of the Yolo Bypass, the impacts of the Settling Basin modifications on the City of Woodlands storm drainage, and the handling of sediment from Cache Creek when the trap efficiency of the Settling Basin is no longer acceptable.	Cache Creek

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM15	Cities-County Storm Drainage Criteria Update Program		Consistency in the hydrologic and hydraulic design criteria and the interfacing between the urbanized and non-urbanized areas or rural areas would result in more effective and compatible management of storm runoff as new facilities are constructed or existing structures are replaced. This interfacing occurs informally to some extent however the community of Yolo County would be better served in the future with a formally established process and consistent criteria. Criteria for urban areas, whether in a city or unincorporated area, should include provisions for Low Impact Development.	Countywide
FM16	Tributaries Detention Basins Project		Storm water detention basins on Cache Creek tributaries have been identified as a potential method of reducing peak flows in the creek during storm events. An investigation into the economic, engineering, environmental and legal feasibility of dry dams at various locations throughout the watershed should be conducted.	Cache Creek
FM18	Cache Creek Off-Channel Detention Basin Projects	WS	Appropriate sites should be identified for temporary, peak-runoff diversion and detention. One of the critical criteria for site selection would include having the proper topography that would allow for gravity diversion and return flows to Cache Creek immediately after a storm event. Assuming these detention basins would be on private property, flood easements would need to be negotiated.	Cache Creek
FM19	Woodland Area Flood Management Project		Public outreach/technical analysis necessary to identify a long-term solution to Cache Creek flooding and provide a minimum of 200-year flood protection to the City of Woodland and surrounding areas. Implementation of publicly-supported solution.	Woodland
FM20	Watershed Management Program		Grazing and other land management practices have a substantial impact on storm runoff rates. An educational program should be initiated to assist private landowners in understanding the impacts of their land management practices. This could be coupled with an incentive program to provide financial assistance to help landowners adopt certain BMPs.	Countywide
FM21	Dunnigan Area Storm Drainage/Flood Management Project		The updated Yolo County General Plan may indicate potential growth and development in the vicinity of the Town of Dunnigan. The growth would impact and be impacted by storm runoff from the Dunnigan Hills including Oat Creek, Bird Creek, and several smaller drainage courses that cross the Tehama Colusa Canal west of the potential growth area. A master storm drainage/flood control plan would need to be formulated as	Colusa Basin Drain

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
			part of a Dunnigan Community Plan. Planning for management of storm drainage should include the application of Low Impact Development design considerations.	
FM22	Flood Emergency Preparedness and Hazard Classification Program		The 2005 New Year's Eve storm event highlighted the need to improve the method of notifying at-risk residents of the need to take emergency action (evacuation). The appropriate emergency response authorities should refine the process by which the at-risk public is notified.	Countywide
FM24	Clear Lake Operations Evaluation Program	WS	During the winter months Cache Creek Dam releases are dictated by the Gopcevic decree. YFCWCD and LCFCWCD have discussed the possibility of modifying these operational rules under certain conditions to benefit both Yolo and Lake County interests. These changes could be coupled with some physical modifications at the Grigsby Riffle. These actions could potentially reduce peak flood flows in Cache Creek by about 4,000 cfs on the levees near Woodland, while also providing flood relief to Clear Lake residents. Additionally, reoperations of the Cache Creek Dam could provide a significant amount of water supply in certain hydrologic year types.	Cache Creek
FM25	Sacramento River Levee Rehabilitation Project (West Sacramento)		Funding for implementation of improvements identified during 2006 analyses of seepage problems. Funding for emergency repairs at two critical erosion sites at River Mile 56.0 and 56.7. Funding for non-emergency repairs at River Mile 57, RM 55.8, and RM 53.5. These levees protect 40,000 residents in West Sacramento. (RD 900)	Sacramento River
FM26	Willow Slough Levee Improvement Project	AR	Willow Slough levee improvements necessary to protect the town of Madison and Highway 16 from flooding, including associated habitat restoration.	Willow Slough
FM27	Funding for the Flood Management Division of DWR		Increased funding for the maintenance work of DWR's Flood Management Division. The Division maintains 56 miles of Yolo County levees.	Countywide
FM28	Sacramento River Levee Rehabilitation Project (RM 69.9 RD827)		RD 827 needs funds to fix a critical erosion site at RM 69.9. No levee break analysis has been completed to determine what would flood if this levee fails.	Sacramento River
FM30	Sacramento River Levee Rehabilitation Project (Merritt Island)		Erosion control and levee improvements on the Sacramento River levee as identified by RD 150.	Sacramento River

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM31	Sutter Slough Erosion Control and Pumping Infrastructure Improvement Project		Minor erosion control on Sutter Slough. These levees protect Clarksburg , but RD 999 indicates they can work through the Delta Levee Subventions Fund to fix the problems. RD 999 also needs new pumping infrastructure, as existing pumps are 80 years old.	Sacramento River
FM32	Sutter Bypass Vegetation Removal Project		Vegetation removal in the Sutter Bypass consistent with habitat restoration activities. Sutter Bypass is losing capacity because of vegetation, water that is not captured in the Sutter Bypass can put additional pressure on the Yolo Bypass and downstream levees.	Sacramento River
FM33	Yolo and Tisdale Bypasses Sediment Removal Program		RD 108 and the DWR need additional funding to periodically remove sediment that is restricting the capacity of the Yolo Bypass and the Tisdale Bypass.	Yolo Bypass, Sacramento River
FM34	West Sacramento Levee Monitoring and Maintenance Program		Funding for ongoing monitoring and maintenance/repair operations for the West Sacramento levee system.	Sacramento River
FM35	Creation of Flood Management Division or Separate Entity		YCFCWCD, Yolo County, and the City of Woodland are interested in establishing a two-year trial position within YCFCWCD to lead flood management efforts associated with the Woodland/Cache Creek and the Yolo Floodplain flood problems (Note: Sacramento River flood issues would not be part of this program except as they might relate to the defined areas). An individual would be hired to coordinate efforts in the legal, long-term funding, solution/project development and implementation, and ongoing maintenance areas as they might contribute to flood management solutions in these two areas. Based on the success (or lack thereof) of this program, this position will be considered for long-term funding either within YCFCWCD or within a separate entity.	Countywide
FM36	Putah Creek Diversion Dam Vegetation Removal Project		Channel capacity is substantially below design capacity of Putah Diversion Dam. This may cause the potential for overtopping of the dam, dam failure and disruption of water supply. Control of invasive weeds (especially arundo and Himalayan blackberry from Putah Diversion Dam to Winters would restore much of the design capacity.	Putah Creek
FM37	Mace Boulevard Bridge Improvement Project		The capacity under the Mace Boulevard Bridge over Putah Creek east of Davis is the lowest of any bridge on Putah Creek. The 500-foot long bridge has multiple supports that can catch debris. Hydrologic studies would be required to determine the appropriate capacity.	Putah Creek

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM38	Small Sloughs and Creeks Invasive Vegetation Removal Program		Conveyance capacity of small creeks and sloughs is reduced and could become more reduced by invasive plants including giant reed (arundo) and tamarisk. A removal program should be initiated to maintain flood conveyance capacity.	Countywide
FM39	Yolo Bypass 2-D Hydraulic Modeling Project		The USACE, with funding from CBDA, is in the process of finalizing a two-dimensional hydraulic model (RMA2) of the Bypass for the purpose of assessing the impacts of proposed land use changes, such as ecosystem restoration within the Yolo Wildlife Area. The final model is scheduled to be completed in October 2006 and will be available for use by anyone proposing a land use change throughout the entire Bypass. It is the model by which the State Reclamation Board will judge impacts to flood carry capacity when an application is made for a permit. Funding is required to support the following activities: (1) determine which agency will be responsible for maintaining and updating the model as projects are completed; (2) conduct long-term management of the model, which is a key tool needed to implement projects in the Yolo Bypass; and (3) enable project proponents to pay for input of project data to run the model for specific projects. Lack of upkeep on this model will make it obsolete and will preclude making informed decisions in the future about Bypass flow, Bypass land, and feature design, associated impacts and adjustments, and associated enforcement if warranted.	Yolo Bypass
FM40	Sacramento River Levee Repair		Correct deficiencies, protect against underseepage, and maintain the Sacramento River levees to current standards for FEMA 100-year and 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	Sacramento River

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM41	Deep Water Ship Channel Navigation Levee Repair		Correct deficiencies, protect against underseepage, and maintain the Deep Water Ship Channel levees to current standards for FEMA 100-year and urban levee 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	Deep Water Ship Channel and Levees
FM42	Sacramento Bypass-Yolo Bypass Levee Repair		Correct deficiencies, protect against underseepage, and maintain the Sacramento Bypass and Yolo Bypass levees to current standards for FEMA 100-year and urban levee 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	Sacramento Bypass and Yolo Bypass
FM43	West Sacramento South Cross Levee Repair		Correct deficiencies, protect against underseepage, and maintain the West Sacramento South Cross Canal levees to current standards for FEMA 100-year and urban levee 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	Deep Water Ship Channel and Levees, Cross Levees
FM44	Ongoing Levee Maintenance and Critical Repair Program		Annual program of levee maintenance and repair at critical erosion sites, implementing Public Law 8499.	Sacramento River, Yolo Bypass, Deep Water Ship Channel and Levees
FM45	RD 900 and West Sacramento MOU on Storm Water Detention and Raw Water Supply		The City of West Sacramento and RD 900 are developing an agreement for cooperative management, use, and maintenance of storm water detention facilities, irrigation and drainage canals, pumps, and other facilities associated with purveying and use of untreated water.	Sacramento River

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Table 5-4. Flood Management and Storm Drainage Actions

ID	Title	Related Categories*	Description	Geographic Area
FM46	Elk Slough Reclamation Pumping Plant		Existing pumping plant is 80 years old. Replace three old pumps with four new pumps and drives. This project will increase pumping efficiency, reduce cost, increase reliability, and maintain the existing pumping capacity.	Sacramento River
FM47	Public Outreach on Flood Risk		Continue to improve public outreach efforts to encourage citizens living in the floodplain to purchase flood insurance. Residents and property owners in the floodplain may be at risk if flooding occurs on the Sacramento River. Floodplain managers have recently become aware of potential levee weaknesses along the Sacramento River. Property owners need to understand the flood risk and should also be encouraged to purchase flood insurance or ensure that their policy will not expire.	Sacramento River
FM48	Levee Maintenance Fee Structure Assessment		Assess levee maintenance district fee structure and funding opportunities in relation to maintenance demands. Work with DWR to evaluate and recommend solutions. Use the Local Agency Formation Commission municipal service of levee maintenance districts to initiate changes, as appropriate (occurs every five years, the last one was completed in March 2005).	Sacramento River

Note:

* AR = Aquatic and Riparian Ecosystem Enhancement, FM = Flood Management and Storm Drainage, R = Recreation, WQ = Water Quality, WS = Water Supply and Drought Preparedness

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR2	Russell Ranch Riparian and Grassland Habitat Restoration Project		A funded habitat restoration project is under way to restore riparian and grassland habitat at Russell Ranch. This project could be expanded, by restoring additional areas.	Putah Creek
AR3	Putah Creek Fisheries Habitat Enhancement Project		UC Davis is a member of the Lower Putah Creek Coordinating Committee, and has received in kind contributions from the LPCCC for vegetation management. These contributions can be leveraged as matching funds to obtain additional habitat restoration funding.	Putah Creek
AR4	UC Davis Confined Animals Relocation Project	WQ	Confined animals would be removed from the North Fork of Putah Creek on UC Davis land and the creek's riparian and aquatic habitat can be restored in this area. This action was identified in the 2003 UC Davis Long Range Development Plan.	Putah Creek
AR5	Putah Creek Recreational Facilities Restoration and Expansion Project	R	UC Davis intends to restore and expand the campfire area along Putah Creek, south of the UC Davis Airport. Riparian habitat restoration in this area will be included. Public use will be focused in this area, such that remaining riparian habitat owned by UC Davis can be used for research.	Putah Creek
AR7	Putah Creek and Cache Creek Exotic and Invasive Species Removal Project	WS, FM	Exotic and invasive plant species, in particular arundo, Himalayan blackberry and tamarisk, cause habitat degradation, bank erosion, and excessive transpiration (consumptive use) losses of water on Cache Creek and Putah Creek. Removal of these species and restoration of the removal sites with native riparian vegetation will greatly benefit native wildlife, aquatic habitat, and bank stability, and will save water. The Cache Creek Conservancy, Yolo County, the Lower Putah Creek Coordinating Committee, and other organizations have been working successfully to remove non-native plant species from the banks of Yolo County's waterways. Much more work is needed, and organizations should work together to secure funding for these efforts. Experts agree that removal of non-native plant species in the entire watershed is essential to prevent new growth of these invasive weeds in the lower watershed. Removal should also start in the most upstream areas and proceed in a downstream direction, to reduce the likelihood of re-infestation.	Putah Creek, Cache Creek
AR8	Cache Creek-Yolo Bypass Anadromous Fish Passage Project		Conduct habitat and engineering feasibility studies. If they indicate feasibility, then remove fish passage barriers. Barriers at the Settling Basin and the Capay Dam could be removed to allow salmon to reach potential spawning habitat in Cache Creek.	Cache Creek, Yolo Bypass

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR11	Agricultural Drains and Sloughs Riparian Habitat Enhancement Program	WQ	Bank vegetation on small sloughs and agricultural drainage canals could be enhanced and managed to provide habitat to birds and other wildlife and to shade the waterways without reducing their irrigation and flood management functions. Where feasible and appropriate, grasses and shrubs could be established and maintained along drain and slough banks in order to reduce the use of herbicides for weed control and to reduce erosion and the associated silt load in the waterways. Landowners could be provided financial incentives to offset the cost of establishing the additional vegetation.	Willow Slough
AR13	South Fork Willow Slough Riparian Restoration and Levee Setback Project		Revegetation of 4 acres of Willow Slough to provide wildlife habitat and increase conveyance capacity. Builds on existing work to revegetate Willow Slough at the Stephens property off Highway 16.	Willow Slough
AR14	Willow Slough Habitat Enhancement Program		Prioritize additional habitat enhancement projects along Willow Slough and implement them. Much of the riparian habitat that existed in the Willow Slough watershed (eastside county foothills) in the pre-settlement era has been lost to agricultural reclamation and urban development. All that remains are small patches or narrow strips – often only one tree canopy wide – of riparian vegetation along some slough reaches and seasonal creeks. Nevertheless, riparian-dependent wildlife is abundant in these remaining areas. Ample opportunity exists to work with private landowners to enhance and expand existing riparian groves and fill in linear gaps.	Willow Slough
AR16	Sacramento River Habitat-Friendly Levee Improvement Program	FM	Enhancement of Sacramento River riparian habitat consistent with levee improvements. As a result of increased attention by the Governor and the Legislature on improving California's levee system, projects will be undertaken on Yolo County's 215 miles of Sacramento River Flood Control Project levees to strengthen them. If funding is available, Yolo County can encourage local levee maintenance districts to undertake habitat enhancement projects in addition to their required mitigation activities. Riparian vegetation could be added to levee slopes according to the bank vegetation guidelines of the Sacramento River Corridor Planning Forum's (2005) draft Floodway Management Plan. The guidelines are designed to increase habitat value, while maintaining maximum flood protection and providing additional structure for fish habitat, as appropriate.	Sacramento River

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR17	Clarksburg Boat Ramp Habitat Enhancement Project	R	Enhancement habitat at the Clarksburg Board ramp and removal of invasive weeds.	Sacramento River
AR18	Cache Creek Canyon Regional Park Habitat Enhancement Project		Enhance habitat and remove invasive weeds consistent with the Cache Creek Canyon Regional Park Habitat Enhancement Plan.	Cache Creek
AR19	Chickahominy Slough Riparian Restoration and Levee Setback Project		Revegetation of a 3-mile reach of Chickahominy Slough near County Road 96. Project includes excavation and grading to move the levee back and planting of native trees, shrubs, and grasses.	Willow Slough
AR20	Cottonwood Slough Riparian Restoration and Levee Setback Project		Excavation and revegetation of 10 acres along Cottonwood Slough near County Road 23 and Madison in Yolo County. Current channel is incised, eroding, and nearly devoid of vegetation. Excavation will create a floodplain terrace on the north side of the slough to create over three acres of wildlife habitat.	Willow Slough
AR21	Corell-Rogers Wetlands Project	R	Restore two formerly mined gravel pits to seasonal wetlands at a 56-acre site along Cache Creek. Enhance riparian habitat and remove invasive weeds. Drill a well to provide irrigation and improve access to site, including the native plant demonstration garden.	Cache Creek
AR22	Grube-Payne Habitat Restoration Project		Restoration of riparian habitat, including native fish habitat, on the Grube property upstream of the I-505 bridge.	Cache Creek
AR23	Capay Open Space Park Habitat Enhancement Project		Restoration of riparian habitat, including native fish habitat, at Yolo County's Capay Open Space Park.	Cache Creek
AR24	Cache Creek Riparian Habitat Enhancement Program		Riparian areas of Cache Creek have been significantly degraded as a result of flood control efforts, agriculture, and mining. Opportunities exist to improve riparian habitat, including fish habitat. This program would identify high-priority sites for habitat enhancement along Cache Creek within Yolo County. Yolo County would work in partnership with private landowners, YCFCWCD, and other interested parties.	Cache Creek
AR25	Small Sloughs Revegetation Project		Revegetation of Chickahominy Slough and other small tributaries to provide wildlife habitat and increase conveyance capacity.	Willow Slough

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR26	Sacramento River Fish Habitat Enhancement Program		Out-migrating juvenile salmon and steelhead in the Sacramento River benefit greatly from instream woody material and other inundated structures because they provide cover. Cover protects juveniles from predators, and provides substrate for food organisms. Little structure occurs in the channel, because the sources of instream woody material are very limited in the lower, levee-confined reaches of the Sacramento River, or have been removed for levee and channel maintenance or by rock bank protection projects. In partnership with flood control agencies and as a part of other habitat enhancement efforts, Yolo County will pursue fish habitat enhancement projects.	Sacramento River
AR27	Fremont Weir Fish Passage Public Outreach Process		Public outreach is needed to explore potential solutions and constraints associated with improving fish passage at the Fremont Weir. The Fremont Weir (in conjunction with other obstacles to Sacramento River access) blocks the upstream migration of thousands of adult salmon each year. While most of these fish are not endangered species, each year the Fremont Weir and associated obstacles block the migration of an average of a hundred federally listed, endangered winter-run and spring-run adult salmon. There are additional impacts to federally-listed steelhead trout, as well as green sturgeon, which are proposed for listing. The Fremont Weir also causes stranding of between 5,000 and 40,000 juvenile salmon every time it spills, as well as juveniles of sturgeon and steelhead trout.	Yolo Bypass
AR28	Yolo Bypass Fish Habitat Enhancement Program		Identify priority areas for fish habitat enhancement and implement projects. The Yolo Bypass provides valuable aquatic habitat to at least 42 resident and seasonal fish species, 15 of which are native. It supports state and federally listed species (Delta smelt, steelhead trout, spring-run and winter-run Chinook salmon) as well as game fish (white sturgeon and striped bass). The Yolo Bypass provides significantly better habitat for juvenile salmon than the Sacramento River. Mean salmon size increased significantly faster in the seasonally inundated Yolo Bypass floodplain than in the Sacramento River.	Yolo Bypass

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions				
ID	Title	Related Categories*	Description/Location	Geographic Area
AR30	Non-native, Invasive Plant Species Removal Program	FM, WQ	Non-native, invasive plant species cause multiple problems in Yolo County waterways, such as Putah Creek and Cache Creek, including reduction of channel capacity, bank erosion, habitat deterioration, and direct competition with native plant species. Removal efforts must include development of a plan with other agencies and other counties to coordinate efforts.	Countywide
AR34	Putah Creek Spawning Grounds Improvement Project		Inadequate spawning gravel continues to limit salmon spawning in Putah Creek, especially in the upper reach below Putah Diversion Dam. Monticello Dam and Putah Diversion Dam block gravel and coarse sediment that the creek used to deposit in this reach. Invasive weeds – especially Himalayan blackberry, arundo and tamarisk – stabilize gravel bars impeding natural replenishment of sediment. Currently the main sources of gravel are deposits in the previously mined reach, in-channel bars and terraces, and Dry Creek. A survey during 2002 found that gravels are a common substrate along lower Putah Creek, but in most places the gravels only occur as a relatively thin veneer over a clay-silt substrate. Also, most of these gravels are too small to support viable salmon egg nests. Rock vanes retain gravel that is added upstream.	Putah Creek
AR35	Capay Dam to Moore Siphon Riparian Flow Program		As part of its comprehensive conjunctive water use program (WS16), YCFCWCD is analyzing the feasibility and impacts of releasing irrigation water over the Capay Dam for diversion and reuse nine miles later in the vicinity of the Moore Siphon. Details that need to be studied in more detail include; water transmission losses, water quality impacts, fishery and habitat impacts.	Cache Creek
AR36	Canal Bank Habitat and Maintenance Program	WQ, R	YCFCWCD is establishing an environmental program to integrate environmental and habitat values into its ongoing canal maintenance program. Currently, the District relies on traditional methods for weed and erosion control along its 160 miles of canal bank. Where feasible and appropriate, it plans to establish and maintain native grasses and shrubs along its canal banks in order to reduce the use of herbicides for weed control and to reduce erosion and the associated silt load in the waterways. This program will provide water quality, habitat and recreational benefits.	Willow Slough, Colusa Basin Drain
AR37	Replace Earthen Crossing of Putah Creek at Route 106A	WQ	Replacing the crossing at Road 106A with a concrete ramp and open box culvert with steel grate would enhance fish passage, maintain impoundment of water for farmers, provide a more reliable crossing, and improve water quality in the lower end of Putah	Putah Creek

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
			Creek. Currently an earthen crossing is pushed into the channel every year and only the center third of the crossing is removed each fall. Two of the past five years the crossing was installed as scheduled on April 1 and was washed out by late rains.	
AR38	Removal of Winters Percolation Dam	R	Removal of the derelict Winters Percolation Dam foundation is a key to restoring floodplains on both banks downstream of the dam. Currently there are no floodplains on either bank for 200 feet downstream. Without floodplains, the channel has very little shade and the water has long residence time that has a warming effect detrimental to native fish. The dam also impedes development of a creek edge trail that is essential to recreational access.	Putah Creek
AR39	Increase Width of Riparian Corridor of Lower Putah Creek		There are possibilities for increasing width of the riparian zone between Willow Canal where it runs along the top of the bank from Yolo Housing (1 mile east of HW 505) to where it spills into Putah Creek about 300 yards west of Pedrick Road. The existing farmlands between Willow Canal and the top of the bank of Putah Creek drain into Putah Creek and are cut off from surrounding lands by the canal. The straight course of the canal and meandering channel of Putah Creek create irregular linear fields that are not very profitable to farm. Occasional breaches of Willow Canal have washed out gullies into Putah Creek that required expensive repairs by YFCWCWD including two events at one location in the past 3 years.	Putah Creek
AR41	Yolo Bypass Wildlife Area Ecosystem Restoration Project		Implement the Ecosystem Restoration Elements documented in the Yolo Bypass Wildlife Area Land Management Plan. Actions include: (1) restoration of permanent and seasonal wetlands, uplands and riparian areas (activities will consist of ground surveys, hydraulic analysis, construction of interior levees, installation of necessary water control structures and earthmoving services necessary to create the microtopography of diverse and manageable wetland ecosystem); (2) control of selected invasive species; and (3) encourage agriculture tenants to practice wildlife friendly farming. Aquatic ecosystem restoration projects on the Wildlife Area are described in AR49.	Yolo Bypass
AR43	Nichols Park Habitat Enhancement Project		Enhance habitat and remove invasive weeds consistent with the Nichols Park Habitat Enhancement Plan.	Cache Creek

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR44	Camp Haswell/Otis Ranch Habitat Enhancement Project		Enhance habitat and remove invasive weeds at the 7.7-acre Camp Haswell site and as appropriate on the 587-acre Otis Ranch.	Cache Creek
AR45	South Fork Preserve Riparian and Grassland Restoration Project		Enhance the existing habitat restoration project on lower Putah Creek with expansion of restoration areas.	Putah Creek
AR46	Cache Creek Anadromous Fish Reintroduction/Introduction Study	AR	Study the potential to reintroduce salmon to Cache Creek. Historically, anadromous fish – fall-run Chinook salmon, steelhead, Pacific lamprey, and river lamprey – were found in Cache Creek although only on an intermittent basis. Barriers to fish passage at the Capay Dam and between the Tule Canal and the Cache Creek Settling Basin, as well as potentially inadequate habitat conditions and flows in the lower creek, prevent successful migration and spawning of anadromous fish today. As recently as 2000, however, three fall-run Chinook salmon were spotted in Cache Creek. There is no evidence that these fish successfully spawned. Fall-run Chinook salmon are not endangered, and it is unlikely (although possible) that any endangered fish species would enter Cache Creek if fish passage barriers are removed.	Cache Creek
AR47	Yolo Bypass Working Group		Provide funding for the Yolo Bypass Working Group to continue periodic stakeholder meetings. The Yolo Bypass Working Group has served as the primary means of outreach regarding the activities in the Bypass. It is a popular forum for landowners, hunters, researchers, special districts, agencies, advocacy groups, and others who have an economic stake in how the Yolo Bypass is managed.	Yolo Bypass
AR48	Putah Creek Geomorphic Restoration Project		Putah Creek was widened and straightened for flood conveyance before Monticello Dam was built. The relative lack of bedload limits the capacity of the channel to restore functional stream dimensions on its own. Shallow margins of the channel could be filled to restore floodplains where they were eliminated, widen the riparian corridor toward the center of the channel, and scale the channel width to post dam flows for a scaled down morphology that restores ecological function in balance with current post-dam flows.	Putah Creek

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR49	Yolo Bypass Conceptual Aquatic Restoration Opportunities		<p>The purpose of the project is to:</p> <ol style="list-style-type: none"> 1. Improve conditions for native fish species in the Yolo Bypass, and 2. Keep users of the Yolo Bypass whole by maintaining or improving existing conditions. <p>The YBIWG has identified the following potential sequential aquatic enhancement opportunities for further evaluation and discussion with stakeholders:</p> <p>§ <u>Putah Creek</u> – Lower Putah Creek stream realignment and floodplain restoration for fish passage improvement and multi-species habitat development on existing public lands.</p> <p>§ <u>Lisbon Weir</u> – Improve the structure for fish, wildlife and agriculture; reduce maintenance.</p> <p>§ <u>Additional Multi-species Habitat Development</u> – Provide for controlled localized seasonal inundation on more frequent intervals; identify areas of opportunity only on: the Wildlife Area; other existing public lands; and private lands where cooperative agreements with willing land owners provide mutual benefits.</p> <p>§ <u>Tule Canal Connectivity</u> – Identify passage impediments (example: road crossings and impoundments); work with land owners to develop the best options for improving fish passage and ensuring water diversion capability and potential hydraulic connectivity to Cache Creek.</p> <p>§ <u>Multi-species fish passage structure</u>– Investigate the redesign of the existing fish ladder; evaluate the feasibility of constructing a new fish passage structure, operated to ensure: continued maintenance of flood conveyance capacity; no substantial changes in timing, volume, and/or duration of flow; and minimal disturbance to existing land use and agricultural practices.</p> <p>Project development will include three steps:</p> <p>Step 1. Present conceptual restoration opportunities</p> <p>Step 2. Seek stakeholder input to guide further actions</p> <p>Step 3. In concert with stakeholders, develop an appropriate restoration plan that maintains or improves conditions in the Yolo Bypass for native fish and bypass users.</p>	Yolo Bypass from the Fremont Weir to Little Holland Tract

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR50	Sacramento Riverbank Enhancement Actions		<p>This action includes a variety of enhancements of Sacramento River riparian and aquatic habitat consistent with levee improvements. As a result of increased attention by the Governor and the Legislature on improving California's levee system, projects will be undertaken on Yolo County's 215 miles of Sacramento River Flood Control Project levees to strengthen them. If funding is available, local levee maintenance districts and other flood control agencies should undertake wildlife, plant, and fish habitat enhancement projects in addition to their required mitigation activities. Riparian vegetation could be added to levee slopes according to the bank vegetation guidelines of the Sacramento River Corridor Planning Forum's (2005) draft Floodway Management Plan. The guidelines are designed to increase habitat value, while maintaining maximum flood protection and providing additional structure for fish habitat, as appropriate.</p> <p>Out-migrating juvenile salmon and steelhead in the Sacramento River benefit greatly from instream woody material and other inundated structures because they provide cover. Cover protects juveniles from predators, and provides substrate for food organisms. Little structure occurs in the channel, because the sources of instream woody material are very limited in the lower, levee-confined reaches of the Sacramento River, or have been removed for levee and channel maintenance or by rock bank protection projects.</p>	Sacramento River
AR51	Bees Lakes Preserve		Conserve and develop limited, low-impact pedestrian-only access to a 23-acre open space area containing sensitive aquatic, riparian, emergent and upland habitats which are associated with the Sacramento River.	Sacramento River
AR52	Merritt Island Habitat Enhancement Project		Study the structure and habitat of the Elk Sough Levee on Merritt Island (in RD 150). The purpose of the study will be to find a means to improve its structural integrity while maintaining the well-established natural habitat.	Sacramento River

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Table 5-5 – Aquatic and Riparian Ecosystem Enhancement Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
AR53	Cache Creek Infrastructure Protection and habitat Enhancement Project		This project involves the planning and implementation of habitat enhancement and erosion control measures along creek banks that transition in and out of bridge sites along Cache Creek. These areas experience restricted flow and increased bank erosion due to the narrow channel width at bridge sites that act as channel constraints. Due to their importance in providing vital transportation links, as well as the tremendous public investment that they represent, the protection of public infrastructure such as bridges is a priority. Preventive erosion control measures that include bioengineering techniques and planting native vegetation for both bank stabilization and habitat enhancement should be implemented at bridge sites whenever feasible.	Cache Creek

Note:

* AR = Aquatic and Riparian Ecosystem Enhancement, FM = Flood Management and Storm Drainage, R = Recreation, WQ = Water Quality, WS = Water Supply and Drought Preparedness

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Table 5-6 – Recreation Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
R1	American River Parkway - Cache Creek Connection Project		The American River Parkway could be connected by foot- or bicycle bridge across the Sacramento River to trails leading to Cache Creek.	Cache Creek, Sacramento River
R3	Cache Creek Trail Nodes Program		Create trail nodes at locations along Cache Creek, consistent with the CCRMP. The trails would not run along long stretches of the creek, but would be concentrated in specific areas planned for recreation.	Cache Creek
R4	Off-Highway Vehicles Access Program and Development of a Public OHV Facility		Develop an off-highway vehicle (OHV) recreation area in Yolo County, to provide a legal alternative to existing OHV use presently occurring along the Cache Creek corridor. The optimum site location for such a facility would be an existing disturbed area, such as a quarry site or borrow area in that vicinity.	Cache Creek
R6	Camp Haswell Renovation Project		Restore old stone cabin as a nature interpretive center, as well as a source of information on recreational opportunities and public trail systems along Cache Creek and its tributaries in the Capay Valley	Cache Creek
R7	Knights Landing Boat Launch Improvement Project		Renovate an existing river access/fishing facility on a 4-acre site, located along the Sacramento Slough (with access to the Sacramento River). The site is owned by the State Wildlife Conservation Board (WCB), and managed by Yolo County under an operating agreement with the WCB. Renovation and construction would include removing navigation obstacles, installing updated boarding floats, repaving the parking lot, installing a vault restroom, providing a potable water system, providing an automated fish cleaning station, updating the site electrical, installing an automated pay station, installing fishing platforms, and upgrading the park host facilities.	Sacramento River
R8	Camp Haswell/Otis Ranch Improvement Project		Improve the Camp Haswell/Otis Ranch Open Space Area. Camp Haswell a 7.7 acre site located adjacent to Cache Creek along Highway 16. Camp Haswell provides access to the 587-acre Otis Ranch. Improvements to Camp Haswell include development of a parking lot, educational trails, picnic areas, permanent restrooms, and an interpretive center. Improvements to Otis Ranch include additional parking areas, educational trails, and the construction of overlooks and vista points along the trails.	Cache Creek

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Table 5-6 – Recreation Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
R10	Elkhorn Regional Park Improvement Project		Renovate the southern portion of an existing 49-acre park site located eight miles north of West Sacramento along the Sacramento River. Recreational improvements would include installing an elevated universally-accessible educational trail through the rich riparian gallery forest; constructing river overlooks; restoring the wildlife habitat; installing an interpretative kiosk and educational signage; and acquiring a 900-foot easement to connect the park to CDFG’s wildlife area.	Sacramento River
R11	Putah Creek Fishing Access and Campground Project		Improve fishing platforms and trails at five fishing access sites along Putah Creek. Provide sanitary facilities, information kiosks linking the sites to the Putah Creek Discovery Corridor, and develop camping facilities at one site.	Putah Creek
R12	Yolo Bypass Wildlife Area Public Access, Outreach, and Interpretation Program		Implement the Public Use Element of the Yolo Bypass Wildlife Area Land Management Plan by constructing and operating/maintaining the following: (1) Pacific Flyway Center; (2) handicapped accessible facilities for hunting and fishing in the Yolo Wildlife Area; (3) wildlife viewing facilities at the Yolo Wildlife Area; (4) bicycle Crossing Project; (5) Interpretive Sign and Auto Route Extension Project; (6) Tule Ranch Unit Facilities Development Project; and (7) Yolo Bypass Wildlife Area Book Project.	Yolo Bypass
R13	Deep Water Ship Channel Recreational Trail		Construct a 5.3-mile biking/walking trail along the east levee of the Deep Water Ship Channel and the north levee of the south city cross drain. Improvements would consist of paved and unpaved trail surfaces (similar to Caltrans’ Class 1 Bicycle Path), vehicular staging areas and access controls, location-based amenities (e.g., picnic tables, trash/recycling receptacles, information kiosks, drinking fountains, shade structures, landscaping, wildlife or port viewing areas, bank fishing access, etc.). The project could potentially be a part of the proposed Delta Trails effort being lead by the Delta Protection Commission.	Sacramento River
R14	Putah Creek Trails Program		Increase hiking opportunities along Putah Creek, including Cold Canyon, Lake Solano, below Putah Diversion Dam, Old Davis Park, and other areas. Implement the Winters Putah Creek Park Master Plan.	Putah Creek
R15	Cache Creek Canyon Regional Park Improvement Project		Improve Cache Creek Canyon Regional Park, a 700-acre park owned by Yolo County that provides a wide array of recreational opportunities to County residents and significant riparian habitat. General improvements to facilities and infrastructure will be made, as well as construction of a light-duty, all season pedestrian bridge to provide	Cache Creek

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Table 5-6 – Recreation Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
			access to the west side of the bridge. Educational and hiking trails will link the developed areas of the park with the larger regional trail system on federal and State lands adjacent to the site.	
R16	Sacramento River-Barge Canal Park Project		As recommended in the City of West Sacramento's Parks Master Plan, this park would provide a continuous 13.1 mile, 192-acre recreation corridor along the entire length of the Sacramento River within city limits.	Sacramento River
R17	Sacramento River Recreation, Fishing and Boating Access Studies		Conduct user surveys to understand demand and specific needs of fishing and boating, and other recreation activities along the Sacramento River. Use the survey to assess potential opportunities and improvements. Integrate new information with local recreation plans; previous regional studies by the State Lands Commission, Delta Protection Commission, and the Riverfront Master Plan; and information from the upcoming Delta Trail and Delta Vision processes. Although several jurisdictions have developed recreation-related plans, there is no coordinated water-related recreation plan available for Yolo County. The current and future water-related recreational needs are insufficiently known. This lack of information hampers the development of water-related recreational opportunities and access required to meet current and future demand in the City of West Sacramento and Yolo County.	Sacramento River
R18	Blue Ridge Campground Project		Construct a new camp site at the Blue Ridge trailhead, as described in the Yolo County Parks Master Plan.	Cache Creek
R19	Cache Creek Nature Preserve Improvement Project		Improve the Cache Creek Nature Preserve, operated by the Cache Creek Conservancy. Complete the parking lot at the site, develop handicap-accessible trails, construct a permanent educational/interpretative center, and construct additional interpretative demonstration displays.	Cache Creek

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Table 5-6 – Recreation Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
R20	Nichols Park Improvement Project		Improve Vernon A. Nichols Park, a 21-acre park located along Highway 16 in the Capay Valley on Cache Creek. General improvements to facilities and infrastructure will be made, as well as educational trails and informational displays. The existing water service will be upgraded and the camp host pad will be relocated to a more appropriate location.	Cache Creek
R21	Sacramento River Fishing and Boating Access Improvement Program		Design and construct additional boating or bank fishing access points and related improvements along the Sacramento River. Design and construct additional parking spaces for bank fishing in the Sacramento River. Design and construct a fishing pier on the Sacramento River in West Sacramento.	Sacramento River
R22	Develop Recreational Opportunities on Public Lands		Provide more recreational opportunities on public lands, which will reduce pressures of trespass, vandalism and other negative impact to private lands.	Countywide
R29	Lower Cache Creek Parkway Access Project		Install two access points along Cache Creek to complete a string of seven recreation nodes identified in the Yolo County Open Space Element (2000). The access points will provide safe, legal access to Cache Creek at County Road 87 and County Road 89 by providing small parking areas, interpretative overlooks and educational signage, and other amenities.	Cache Creek
R30	Clarksburg Sacramento River Access Facility Improvements		Renovate the 4-acre site located along the Sacramento River. Renovation and construction would include removing navigation obstacles, widening the boat launch ramp to comply with current state standards, installing updated boarding floats, repaving the parking lot, installing a vault restroom, providing potable water, providing an automated fish cleaning station, updating the site electrical, installing an automated pay station, installing fishing platforms, and constructing new park host facilities. Include the site in the State Delta Clean Boating Network Program, which includes the installation of an oil recycling center, public information station, and the distribution of clean boating "kits" to educate the public on the value of keeping the river and the Delta clean.	Sacramento River

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Table 5-6 – Recreation Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
R31	Davis Wetlands Public Access Improvement Project		Construct bike/pedestrian bridge at mouth of Willow Slough Bypass to connect existing 400 acre Davis Wetlands project to public access network.	Yolo Bypass
R32	Levee Public Access Improvements Project		Plan and implement levee top trail network system connecting Woodland, Yolo Wildlife Area, Davis, and UCD	Cache Creek, Yolo Bypass, Putah Creek
R33	Public Access Trails Along Existing Storm Water Conveyance Channels Project		Construct public access trails along existing storm water canals connecting existing Davis greenbelts to the Yolo Bypass Wildlife Area and Willow Slough/Davis Wetlands.	Davis
R34	Davis Storm Water Channel Crossing Project		Construct bike/pedestrian bridge over the storm water channel to connect neighborhoods with existing greenbelt network.	Davis
R35	Central Park Facilities		Construct a broad range of recreational amenities to provide visual and physical access to the Sacramento River and Barge Canal at locations between the Palamidessi and Jefferson Boulevard bridges, the River Bluffs, and the Barge Canal dredge spoils site. Water-related facilities may include an aquatic/boating center, marina, viewing platforms, and shore access pathways. Adjacent active and passive recreation facilities may include civic gathering and festival areas, neighborhood play parks, sport field complexes, meeting and convention facilities, theater or other performing art venues, museum, or other cultural interpretation facilities	Sacramento River
R36	Main Drain Canal Recreation Corridor		Construct over six miles of bicycle and pedestrian access, travel, and other use amenities along the Main Drainage Canal between the Barge Canal and the Deep Water Ship Channel. Improvements would consist of paved and unpaved trail surfaces, vehicular staging areas and access controls, and location-based amenities (e.g., picnic tables, trash/recycling receptacles, information kiosks, drinking fountains, shade structures, landscaping, viewing areas, bank fishing access, etc.). Improvements would be phased according to available funding and other opportunities	Sacramento River

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Table 5-6 – Recreation Actions

ID	Title	Related Categories*	Description/Location	Geographic Area
R37	Implementation of the Commission's Land Use and Resource Management Plan for the Primary Zone of the Delta (Management Plan)		The Management Plan contains findings, policies, and recommendations in the areas of environment, utilities, and infrastructure; land use; agriculture; water, recreation, and access; levees; and marine patrol/boater education/safety programs. The policies of the Management Plan are incorporated in the General Plans of local entities with jurisdiction in the Primary Zone. All projects should be consistent with the Management Plan as well as County General Plan policies pertaining to the Delta. In addition, all projects should be compatible with the Great Delta Trail, which is being planned by the Delta Protection Commission pursuant to SB 1556 (Torlakson).	Sacramento River
R38	Sacramento River Recreation Trail		Construct a continuous 13.1-mile, 192-acre recreation corridor along the entire length of the Sacramento River within the City limits. Improvements would consist of paved and unpaved trail surfaces, vehicular staging areas and access controls, and location-based amenities ranging from major community parks (e.g., River Walk Park, Riverfront Promenade) to occasional experiences (e.g., picnic tables, trash/recycling receptacles, information kiosks, drinking fountains, shade structures, landscaping, viewing areas, bank fishing access, etc.). Improvements would be phased according to available funding and other opportunities.	Sacramento River

Note:

* AR = Aquatic and Riparian Ecosystem Enhancement, FM = Flood Management and Storm Drainage, R = Recreation, WQ = Water Quality, WS = Water Supply and Drought Preparedness

⁽¹⁾ IRWMP Objectives

1. Coordinate and conjunctively manage surface water and groundwater supplies available to Yolo County to avoid the potential adverse impacts from surface water supply development and use and groundwater extraction.
2. Formulate a comprehensive water management, conservation, and reuse program for municipal, industrial, and agricultural water users.
3. Provide a mechanism or process that facilitates the rational treatment of proposals for importing water, for the intra-county transfer of water, and for the export of water.
4. Ensure open and frequent communication with the public.

5. Integrate water resource planning and land use planning.

6. Maximize the extent to which priority projects assist in meeting statewide priorities.

7. Assist disadvantaged communities on basic infrastructure improvements.

8. Assist in meeting TMDL's being developed for mercury in the Cache Creek watershed.

9. Enhance the aquatic and riparian environment.

10. Utilize recycled water to the maximum extent possible.

11. Identify measures that can be implemented to reduce point-source and non-point source pollution.

12. Comply with applicable water discharge requirements.

13. Provide recreational opportunities without adversely impacting private property owners.

14. Provide adequate storm drainage and flood control for the citizens of Yolo County consistent with recommendations of the State's Floodplain Management Task Force.

⁽²⁾ Water Resource Management Issues

Water Supply and Drought Preparedness Issues

- 1 Increasingly stringent water quality regulations (see Water Quality section).
- 2 Need to improve existing water supply quality, and pursue higher quality water sources to meet current and future demands.
- 3 Availability of adequate water supplies during severe drought conditions.
- 4 Subsidence as a result of groundwater extraction.
- 5 Cost of providing water and wastewater service is increasing and expected to continue.
- 6 Regulatory compliance is increasingly complex and expensive.
- 7 Ability of deep aquifer to sustain current and future demands.

Water Quality Issues

- 1 High nitrate levels in the drinking water wells of both cities and unincorporated communities that potentially present a risk to human health.
- 2 High salinity levels from wastewater treatment plant discharges into waterways that exceed permit requirements.
- 3 Potential for high salinity levels in groundwater if agricultural irrigation slowly concentrates salts in shallow groundwater aquifers.
- 4 Levels of arsenic and chromium VI, naturally occurring constituents in deep groundwater aquifers may cause a risk to human health.
- 5 High levels of boron in shallow groundwater aquifers that reduce crop yields or destroy young, perennial crops.
- 6 Trace levels of flame retardant chemicals that do not yet present a risk to human health, but may present a risk in the future.
- 7 Well head neglect and abandonment, creating possible conduits for pollution to enter groundwater aquifers.
- 8 Low levels of pesticides, nitrates, or other harmful constituents in surface water that need to be monitored to ensure that the water is safe.
- 9 Some surface water sources have high levels of suspended sediment that can negatively affect aquatic life.
- 10 High levels of mercury in Cache Creek and the Yolo Bypass may present a risk to humans who consume large quantities of fish and fish-eating wildlife.
- 11 Storm water drainage may result in spikes of pollutants of concern that could exceed human health standards and negatively affect wildlife.

Flood Management and Storm Drainage Issues

- 1 Through-seepage and underseepage threats to Sacramento River levees.
- 2 Erosion threats to Sacramento River levees.
- 3 Inadequate funding for geotechnical studies to determine erosion and seepage threats to Sacramento River levees and projects to fix them.
- 4 Inadequate public outreach (need for flood insurance, understanding of evacuation plans).
- 5 Inadequate emergency preparedness plans for levee failures.
- 6 Need to evaluate development in the floodplain (the more development, the more risk to public safety).
- 7 Inadequate compensation to Yolo County for providing the City of Sacramento with flood protection.
- 8 Inadequate flood protection from existing Cache Creek levees.
- 9 Erosion of existing Cache Creek levees.
- 10 Inadequate vegetation removal on Cache Creek (impedes capacity).
- 11 Insufficient understanding of the risk of Cache Creek flooding.
- 12 Inadequate levees to protect Madison and Esparto from Lamb Valley Slough flooding.
- 13 Inadequate flood protection at the airport.

Riparian and Aquatic Ecosystem Enhancement Issues

- 1 Loss of native plants, increase of invasive plants leading to increased erosion problems, and loss of habitat.
- 2 Loss of native fish habitat, including spawning grounds.
- 3 Barriers to fish passage that prevent anadromous fish from reaching spawning grounds.
- 4 Barriers to fish passage that prevent juvenile fish from reaching floodplains with superior food availability and better protection from predators than open water.
- 5 Loss of habitat for terrestrial species, including endangered species, leading to a decline in some populations.
- 6 Increase of invasive aquatic species.
- 7 Methylmercury accumulation in fish tissue, which puts fish-eating wildlife at risk of neurological and reproductive disorders.

Recreation Issues

- 1 Insufficient or inadequate educational opportunities (interpretive centers, etc.) related to waterways.
- 2 Insufficient or inadequate hiking, bicycle and equestrian trails along waterways.
- 3 Insufficient or inadequate hunting and fishing access sites along waterways.
- 4 Insufficient or inadequate camping facilities along waterways.
- 5 Insufficient or inadequate boating opportunities (motorized and non-motorized).
- 6 Insufficient or inadequate wildlife viewing opportunities.
- 7 Insufficient or inadequate day-use activities (picnicking, swimming, etc.).

6.0 Implementation Strategy

6.1 Purpose

Implementing programs and projects that will enhance the management of water and related resources will be a function of the effectiveness of the leadership and level of commitment that is made to the IRWMP. The integrated actions presented in Section 5.0 and detailed in Section 7.0, represent diverse actions, involving many entities and many stakeholders. This breadth of involvement is based on the recognition that the region of Yolo County is made up of very different subregions or subwatersheds from the standpoint of the resources, resource issues and opportunities, jurisdictional and coordinating or implementing entities, and intra-regional associations.

This section aims to build on the momentum created during IRWMP formulation and to set forth a strategy to enhance the long-term management of water and related resources for the benefit of the community of Yolo County. Although this IRWMP purposely was prepared with a long-term perspective, the TC was mindful that many of the individual and integrated actions contained in the IRWMP are in the preliminary planning and pre-feasibility stages and are not fully developed for implementation. Accordingly, the implementation strategy for the IRWMP includes a framework for advancing the management of water resources and related activities through the next three to five years. Success during this period is critical to integrated resource management in Yolo County. The collective knowledge of the implementing entities, participating stakeholders, and the public regarding the resources and management opportunities and constraints will be enhanced by implementing actions described in the IRWMP. The degree of success will be influenced by the effectiveness of the design and implementation of work plans to strengthen the understanding of the resource issues, constraints, and opportunities; and the monitoring and adaptive decisions to advance resources management. Additionally, the success of the collaborative relationships that are formed and that mature during the first three to five years will strengthen the overall institutional structure that is critical for the long-term success of the IRWMP. Evidence of this maturation emerged during the preparation of this IRWMP.

Water resource planning and management is never completed. It is enhanced incrementally over time through adaptive design of resource programs and projects based on new data and information, additional analyses, collaborative partners, and public policy. It will be important for the WRA to regularly update the IRWMP and to adapt future efforts based on the progress and understanding acquired during the upcoming three- to five-year period.

The framework for implementing the IRWMP is addressed in the following components:

- Institutional Structure
- Action Program (Presented in Section 7.0)

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- Funding Opportunities
- Environmental and Regulatory Compliance
- Public Outreach
- Items for Early Action

6.2 *Institutional Structure*

6.2.1 **Background**

The importance and need for coordinating the planning, implementation, and management of water and resource related activities was recognized in the first Yolo County Water Plan in 1984, which established an Interagency Water Management Coordinating Group (ICOR). ICOR was composed of senior level staff from the cities of Davis, West Sacramento, Winters, and Woodland; the Dunnigan Water District; the Yolo-Zamora Water District; the Yolo County Flood Control & Water Conservation District; Yolo County; and the University of California, Davis. ICOR met regularly to discuss water-related programs of the respective agencies and to share resource information and operational problems and successes. In fall 1989, ICOR members, realizing that specific elements of the water plan had not yet been implemented, suggested that the water plan be updated to refocus attention in the interest of advancing water management in the county. The suggestion was accepted and the participating agencies collectively funded the 1992 Yolo County Water Plan Update.

The 1992 update established WRA as a vehicle for coordinating implementation of the plan recommendations. The WRA's overall success in fulfilling its intended goals and objectives has been variable. It is worth noting, however, that since 1993 the WRA designed and implemented essential foundational actions. Also, a great deal of significant work has been completed by member agencies with special funding and technical assistance from DWR.

Initial IRWMP efforts focused on completing the Background Data and Information (**Appendix A**) to document known resource data and information. The WRA's 2004 decision to establish a TC was intended to improve its effectiveness in fulfilling organizational goals and objectives. This is proving to have been a well-founded decision. The effectiveness of this nominal restructuring of the WRA to focus on the TC's work is exemplified in the WRA's success in receiving grant funding for this IRWMP, as well as the actual preparation of this IRWMP. The TC has also effectively implemented foundational actions described in the IRWMP. The cooperative relationship and guidance of DWR staff has been a significant contributor to the success of the TC and the progress WRA has made on its IRWMP effort.

In developing the IRWMP, and particularly in developing the wide and extended array of foundational, integrated and non-integrated or stand-alone actions, it has become abundantly clear that Yolo County is very complex in terms of geography, resources, stakeholders, and

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jurisdictional responsibilities. Formulating the integrated actions and reviewing the entities and stakeholders involved has shown that no one group or organization can effectively coordinate, implement, and manage the breadth of the work required to implement the IRWMP’s integrated projects. It is clearly a team approach. For a team approach to be effective, it must be understood that Yolo County is the primary focus and that the implementation of projects and programs is the important factor and not who implemented them. Each project is different and will require different levels of assistance and support to maximize its potential and accomplishments. There is no “cookie cutter” or “template” for water and resources management, and there is no substitute for genuine communication and collaboration with the interest of the communities being the central theme.

In summary, harnessing the expertise unique to the respective subwatersheds of Yolo County, in an open and collaborative process, will provide the best model for implementing the IRWMP.

6.2.2 Functional Needs

As noted above, the respective integrated projects presented in this IRWMP are quite different and the success in implementing each or portions of each over time will substantially enhance the community of Yolo County. The functional ingredients noted below are essential to the success of each integrated project:

- An effective team leader or lead partners.
- A qualified cooperative management team, advisory committee, or established organization that can focus on IRWMP implementation.
- An effective stakeholder process.
- An effective public outreach program.
- Public/community support.
- Willingness of entities to be an implementation partner as part of the IRWMP process.
- Funding.

6.2.3 Proposed Institutional Structure

The functional ingredients essential to the success of the respective integrated projects cannot be embodied within a single entity at the scale that is needed for this IRWMP. This observation will become even more apparent when reviewing the Action Program (Section 7.0).

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It is critical to have an institutional structure that facilitates and supports the implementation of the foundational and integrated actions of the IRWMP. This structure should capitalize on the progress made recently through the WRA TC. Accordingly, the structure should accomplish the following:

- Facilitate and support entities in implementing both Foundational and Integrated Actions.
- Ensure that data and information from monitoring and investigative programs continue to be available and disseminated to the public.
- Help to obtain funding to implement both Foundational and Integrated Actions.
- Contract with funding agencies on behalf of implementing entities.
- Monitor progress of those entities in implementing both foundational and integrated actions and encourage/assist, when appropriate, those entities where progress is limited.
- Provide a forum for regional coordination with effective public involvement and outreach.

Based upon the recent performance and accomplishments of WRA and its TC, a review of the original intent of the WRA, and an understanding of what is important to the success of the IRWMP at this time, it appears that WRA can and should provide the institutional structure to support the broad advancement of the management of water and related resources in Yolo County. It must be highlighted here that structure facilitates success, but success can only happen with effective leadership and collaboration. Integrated resources management is critical and the extent to which it can be accomplished will be a function of the ability of those responsible and involved in the process to work together to accomplish the integration in a manner that is most beneficial for the resources and the communities involved. Integration is not the product of this IRWMP, since integration actually occurs in the implementation. However, this IRWMP does provide the overall guidance and framework by which integration can be initiated and sustained as a common aspect of implementation.

The principal elements of the institutional structure envisioned for implementing the IRWMP are presented in **Figure 6-1**. They are described briefly below, from the standpoint of the respective roles and/or relationships as they relate to implementing the IRWMP.

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FIGURE 6-1

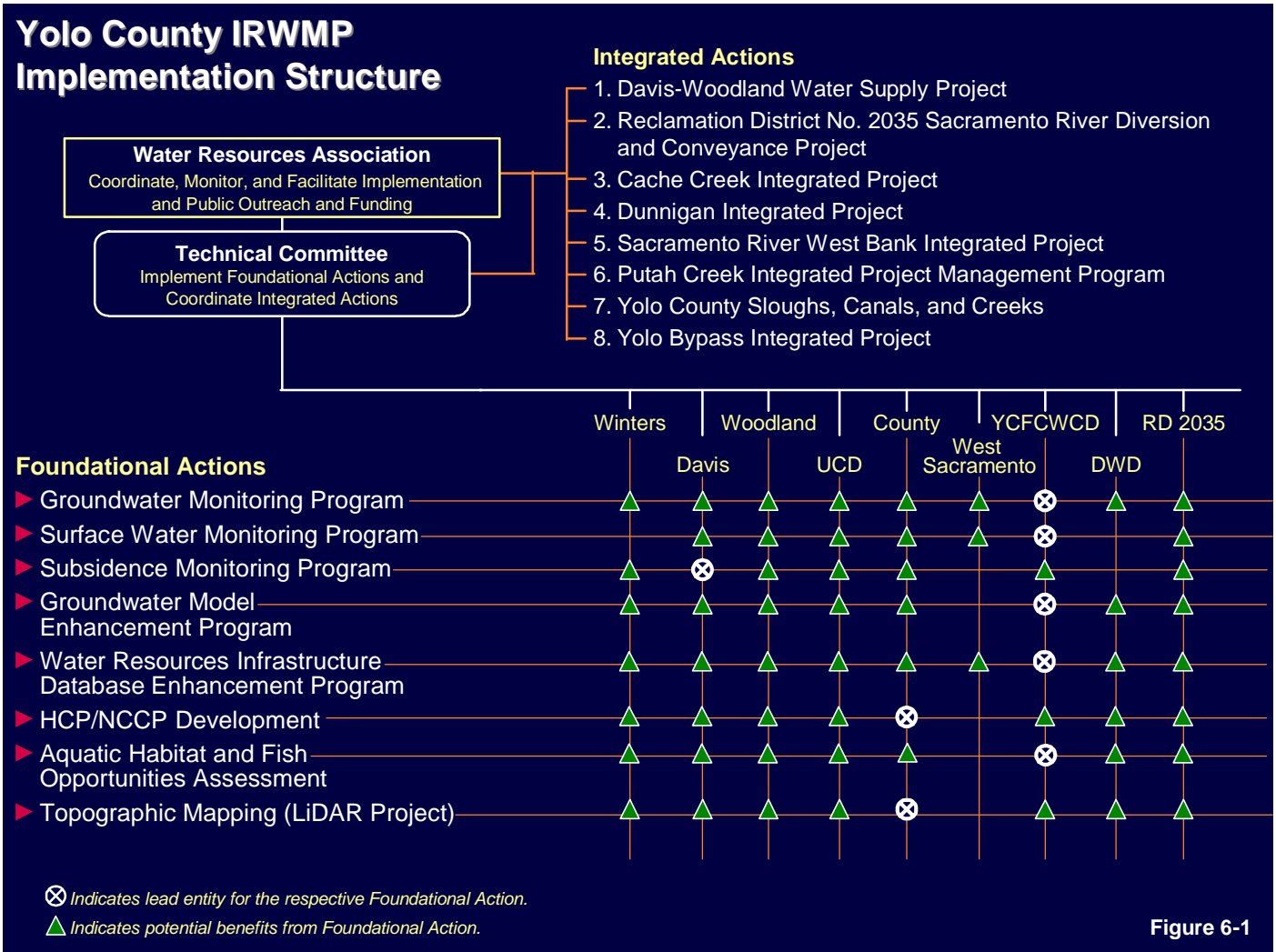


Figure 6-1

Implementation Strategy

6.2.4 WRA Board of Directors

The Board of Directors for the WRA is composed of supervisors, council members, and representatives from member agencies. Board functions would include:

- Oversee the activities of the TC.
- Continue to render decisions on the budget and dues structure to support WRA activities.
- Continue to render decisions on allocating funds contributed by member agencies to plan and implement foundational actions.
- Support member agencies and collaborating entities in seeking funding to perform work aimed at implementing the actions contained in the IRWMP.
- Support efforts of the Yolo Bypass Working Group to establish a structure for implementing actions in the Bypass.
- Serve as the fiscal agent for member agencies and collaborating partners to secure monies received from outside funding programs administered by government agencies or foundations as a means of maximizing outside funding for IRWMP implementation.
- Provide a public forum for regular reporting by member agencies and collaborating partners involved in implementing the IRWMP.
- Provide a public forum for neighboring regions to report on water and resource activities being conducted in their respective regions.
- Host an annual conference or workshop to inform the public of the work and accomplishments in implementing foundational and integrated actions contained in the IRWMP.
- Take a leadership role for the timely update of IRWMP document on behalf of its members.

6.2.5 WRA Technical Committee

The TC is composed of management and senior staff of WRA member agencies. Member agencies will be partners in implementing several of the Integrated Actions presented in this IRWMP (except for the Putah Creek and Yolo Bypass Integrated Projects where non-member entities appear to be best suited to manage implementation because of their backgrounds and experience working within the respective sub-regions). Clear communications among the TC

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and representatives from the Putah Creek Integrated Project and Yolo Bypass Integrated Project will be the key to effectively coordinate countywide water- and resource-related activities.

The functions of the TC would include:

- Continue to coordinate and take a leadership role in implementing foundational actions.
- Coordinate and keep TC members informed of work being performed by the respective agencies relating to implementing the IRWMP.
- Coordinate with participants of the Lower Putah Creek and Yolo Bypass Integrated Projects.
- Seek opportunities to integrate activities between geographic subareas when the overall results will be more beneficial for the community and resources.
- Remain informed of and pursue potential funding opportunities to assist implementing partners.
- Continue to formulate recommendations to the Board of Directors regarding project funds, budget, and programs and implementation strategy.
- Make regular reports to the Board of Directors on the progress and accomplishments achieved in relation to implementing foundational actions.
- Formulate recommendations to the Board of Directors on means and methods to enhance public outreach efforts related to implementing the IRWMP.
- Formulate IRWMP funding recommendations for Board of Directors consideration.

6.2.6 Foundational Actions

Foundational actions are programs or activities usually implemented by member agencies with funding from the WRA project funds budget. The funding may be from financial contributions of member agencies and a variety of other funding programs. The Board of Directors decides whether to fund and implement foundational actions, based on information and recommendations received from the TC.

6.2.7 Integrated Actions

Integrated actions are individual or component actions implemented with the collaborative participation of various entities working together in subregions and subwatersheds within the County. Unlike foundational actions, the Board of Directors exercises no control over the

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funding or implementation of the integrated actions. Rather, the management structure established for that integrated action has responsibility for decisions about funding, scheduling, and prioritization of activities.

To increase funding opportunities for implementing integrated actions, it is essential that the lead partner and managing entities keep the WRA Board of Directors informed about the work, successes, problems, funding needs, and funding opportunities. It is clear that most funding programs—those in effect today and those available in the future—will require projects or activities that involve and empower those with sub-region expertise and commitment to be a part of the regional IRWMP implementation. Accordingly, the WRA Board of Directors can be most effective in supporting requests or applications for funding if it is kept informed of the status and progress of the integrated actions. The Board would be able to support requests for funding to the extent that it is informed and is in agreement with the proposed work.

6.3 Funding Opportunities

A variety of funding sources are available for both foundational and integrated actions, or for components of integrated actions contained in the IRWMP. There are also sources proposed for voter approval, and other sources are likely to emerge in the future. An important responsibility of the TC will be to stay informed of the funding opportunities and to ensure through the collaborative process that the lead partners for the respective integrated actions are informed (see Section 6.2 “Institutional Structure”). In most cases, implementation of an integrated action will require funding from more than one source due to a combination of factors. These could include funding restrictions (in terms of amount and purpose), strong competition for limited funds, and financing challenges where matching funds are required. This section summarizes known potential funding sources.

6.3.1 State Bond Funds: Loans and Grants

Over the past several decades a number of statewide bond measures were approved by California voters that have provided billions of dollars for water supply, wastewater treatment, flood control, water quality improvement, fish and wildlife habitat enhancement, and other programs. In recent years, this has included Propositions 204, 12, 13, 40, and 50. Although funds from most past bonds have been fully allocated, some programs are still active under Propositions 40 and 50.

One of the most important programs established by Proposition 50 is a grant program for developing and implementing integrated water resource management plans and actions. Funding was allocated for both the development and implementation of IRWMPs and their recommended actions. There was tremendous competition for the first round of implementation grants, and intense competition is expected to continue for the second and final round of grants in 2007. Monies will also be allocated for planning grants in a second round, and components of the foundational and integrated actions could be eligible. The funding available under Proposition 50 is expected to be fully allocated by 2008.

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The passage of Proposition 1E, Disaster Preparedness and Flood Prevention Bond Act of 2006, authorizes \$4.09 billion and Proposition 84, Water Quality, Safety and Supply, Flood Control, Natural Resources Protection, Park Improvements, Bonds Initiative Statute authorizes \$5.388 billion in bonds. These respective bond measures provide significant funding opportunities for several flood hazard reduction and water resources-related projects identified in this IRWMP. A breakdown of funding under the two propositions is presented in **Table 6-1** and **Table 6-2**.

The \$800 million allocated for flood control in Proposition 84 is proposed to be allocated as presented in **Table 6-3**.

Of the \$1.525 billion is allocated for safe drinking water, etc., \$1 billion is earmarked for grants that assist local public agencies to meet the long-term water needs of the state. Of this amount, \$73 million is allocated to the Sacramento region. Eligible projects must implement integrated regional water management plans.

Table 6-1 – Proposition 1E Funding Programs	
Funding Category	Amount, \$1,000,000
State-Federal Project Levees, Weirs, Bypasses, and Other Flood Management Facilities, including in the Delta	3,000
Reducing the Risk of Levee Failures in the Delta	
Statewide Flood Management Facilities	
Flood Control Subventions	500
Flood Corridors, Bypasses, and Mapping	290
Storm Water Flood Management Grants	300
Total	4,090

Source: Disaster Preparedness and Flood Prevention Bond Act of 2006.

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Table 6-2 – Proposition 84 Funding Programs	
Funding Category	Amount, \$1,000,000
Safe Drinking Water, Water Quality, and Other Water Projects	1,525
Flood Control Projects	800
Statewide Water Management	65
Protection of Rivers, Lakes, and Streams	928
Forest and Wildlife Conservation	450
Protection of Beaches, Bays, and Coastal Waters and Watersheds	540
State Parks and Nature Education Facilities	500
Sustainable Communities and Climate Change Projects	580
Total	5,388

Source: The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006.

Table 6-3 – Proposition 84 Flood Control Funding	
Funding Category	Amount, \$1,000,000
Reducing Risk of Levee Failures in the Delta	275
Statewide Flood Management Facilities	275
Flood Control Subventions	180
Flood Corridors, Bypasses, and Mapping	70
Total	800

Source: Urban Levee Evaluation Program, Local Levee Officials Workshop, California Department of Water Resources, February 27-March 1, 2007.

6.3.2 State Revolving Funds

State Revolving Funds (SRFs) are pools of capital dedicated to financing public infrastructure. SRFs are funded through federal and state contributions. Two SRF programs have been authorized by Congress. The Clean Water State Revolving Fund (CWSRF) is a loan program to fund water quality protection projects for wastewater treatment, non-point source pollution control, and watershed and estuary management. In California the program is administered by the SWRCB, with \$200-300 million available each year (<http://www.swrcb.ca.gov/funding/srf.html>). Bond rates are typically below market rates.

The Drinking Water State Revolving Fund (DWSRF) makes funds available to drinking water systems to finance infrastructure improvements. The DWSRF also emphasizes providing funds to small and disadvantaged communities and to programs encouraging pollution prevention as a tool for ensuring safe drinking water. In California, the program is called the California Safe Drinking Water State Revolving Fund Program, and is administered by the California Department of Health Services. The DHS web site (<http://www.dhs.ca.gov/ps/ddwem/SRF/srfindex.htm>) has details on program implementation, current funding availability and program status.

6.3.3 Local Financing

Many projects contained in the IRWMP will require local financing and/or funding. Depending upon the actions involved, this could either be an allocation of funds on an annual basis from current revenues or, more likely, the sale of revenue bonds with repayment linked to user fees (for example, increases in water or wastewater charges). There are a variety of limitations on local financing, and these may vary by individual entity. Much will depend on the financial bonding capacity of each project sponsor. Additional consideration are provisions of Proposition 218, the ballot measure approved by California voters in November 1996. Proposition 218 added additional restrictions beyond those approved by California voters in 1978's Proposition 13, on imposition of "assessments and fees". In general, Proposition 218 (article XIII D, Section 6 of the California Constitution) requires voter approval for all taxes and for certain "property-related" fees. Interpretation of such restrictions is ongoing, and is subject to a variety of legal decisions and interpretations. A recent California Supreme Court decision (*Bighorn-Desert View Water Agency v. Virgil*, July 24, 2006) concluded that a public agency's water rates and charges for ongoing water delivery are property-related fees and charges subject to provisions of Proposition 218.

6.3.4 Federal Emergency Management Agency

A community is eligible for FEMA grant funding when it has an adopted Local Hazard Mitigation Plan or Flood Mitigation Plan. Yolo County and cooperating cities have an adopted Multi-Jurisdiction Hazard Mitigation Plan, but the plan lacks specific flood hazard mitigation projects. The plan may be updated at any time to incorporate projects that have been identified or may be identified as a result of work performed in implementing the integrated actions. Potential grant funding could be available from FEMA programs that are described briefly below.

Pre-Disaster Mitigation Program

Authorized through enactment of the Disaster Management Act by Congress in October 2000, this program can provide funding to states, public agencies, communities, and tribes for cost-effective hazard mitigation planning activities that complement a comprehensive mitigation program and reduce injuries, loss of life, and property.

Flood Mitigation Assistance

Provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other insurable structures. The three types of grants available through the FMA Program are planning, project, and technical assistance grants. Only communities that participate in the National Flood Insurance Program can apply for project and technical assistance grants. Planning grants are available to states and communities that prepare flood mitigation plans.

Hazard Mitigation Grant Program

Provides grants to local, state, and tribal governments to implement long-term hazard mitigation measures after a major disaster declaration (up to 15% of the FEMA disaster funds they receive is for hazard mitigation planning and projects).

Urban Streams Restoration Program

Supports activities that minimize property damage caused by flooding and bank erosion, restores the natural value of streams, and promotes community stewardship. This program funds projects that have flood management or erosion control as a primary objective, and maintains or improves the environmental characteristics of a stream or restores a stream to function naturally.

6.3.5 United States Department of Agriculture/Natural Resource Conservation Service

The United States Department of Agriculture has a number of water, wastewater, storm drainage and solid waste loan and grant programs available for small rural communities (<http://www.usda.gov/rus/water/programs.htm>). These funds have been used in the past for small projects in Yolo County and will continue to be an important source of funds for such projects. Additionally, numerous programs are administered through the Natural Resource Conservation District aimed at reducing soil erosion, enhancing water supplies, improving water quality, increasing wildlife habitat, and reducing damage caused by floods and other natural disasters (<http://www.nrcs.usda.gov/Programs/>)

NRCS EWP

Assists sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protecting destabilized stream banks, establishing cover on critically eroding lands, implementing conservation practices, and purchasing floodplain easements. The program is designed for recovery measures, and it is not necessary for a national emergency to be declared for an area to be eligible for assistance.

6.3.6 Community Development Block Grant Program

The Community Development Block Grant Program (CDBG) provides communities with resources to address a wide range of unique community development needs. The CDBG provides annual grants on a formula basis to numerous local governments and States (<http://www.hud.gov/offices/cpd/communiitydevelopment/programs/>). Yolo County has successfully utilized CDBG grant funds to assist disadvantage communities in the county.

6.3.7 “Pay-As-You-Go”

Although not an option for capital-intensive projects, “pay-as-you-go” is possible for some of the foundational actions such as groundwater and surface water monitoring programs. Current county-wide subsidence monitoring, groundwater level and water quality monitoring is conducted and funded largely at the local level, with significant efforts by the YCFCWCD and coordination among members of the WRA. Additional help is provided by the State Department of Water Resources. A “pay-as-you-go” approach means funds from local government budgets are allocated on an annual basis for specified on-going actions.

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6.3.8 Other

There are a variety of smaller programs that offer financial assistance in the form of grants or loans. These programs typically are for very specific purposes, and are limited by available funding. The Water Recycling Funding Program (<http://www.swrcb.ca.gov/recycling/index.html>), a component of Proposition 50, established \$42 million in construction grant funding for recycled water projects. Earlier loan and grant programs were targeted at subjects such as agricultural drainage, pesticide reduction, non-point source pollution control, and clean beaches. Such programs can be created either through annual legislation or statewide initiatives, such as bond programs. Although the CALFED Bay-Delta Program is in the process of reviewing its long-term mission including funding options, there are likely to be funds administered directly or indirectly by CALFED that may be available. A key to such potential funding is a connection between the specific IRWMP project and CALFED goals. Finally, there is a great deal of legislative focus on additional funding for flood control, including a \$4 billion flood bond for the statewide November 2006 ballot. It is likely that a combination of future State bond funds and additional federal funding may be available for the flood control elements of the IRWMP.

There are also separate funding sources for recreation enhancement and habitat improvement programs, administered by the California Department of Parks and Recreation (DPR). These programs are described on DPR's web site (<http://www.parks.ca.gov/>) and include the Habitat Conservation Fund, the Land and Water Conservation Fund, Recreational Trails Program, and various smaller funds that may change from year to year based on legislative actions and budget appropriations (including the State's Environmental License Plate Fund program).

It has been well demonstrated in Yolo County that the effort and participation of volunteers are very effective. This is an invaluable resource and one that will continue to be important from the standpoint of both work accomplished and community outreach.

6.4 *Environmental and Regulatory Compliance*

Programs and projects proposed in the IRWMP will need to comply with all applicable federal, state and local laws and regulations, including environmental laws, regulations and ordinances. A complete review of all applicable laws and regulations is beyond the scope of this plan. This section highlights the major environmental laws and regulations, and discusses recent developments that may affect environmental compliance strategy.

6.4.1 **Applicable Laws and Regulations**

Major laws and regulations at the federal level include:

- National Environmental Policy Act (NEPA). May apply if a federal partner take part in the implementation of a project (e.g., the US Army Corps of Engineers may partner on levee improvement projects along the Sacramento River).

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- Clean Water Act, in particular Section 401 and Section 404. For impacts of dredge and fill materials on Waters of the United States, and wetland impacts.
- Rivers and Harbors Act, in particular Section 10. For wetland impacts.
- Endangered Species Act.
- Clean Air Act.
- National Historic Preservation Act, in particular Section 106.

Major state laws and regulations that could apply to IRWMP programs and projects include:

- California Environmental Quality Act (CEQA).
- California Environmental Species Act (CESA).
- California Fish and Game Code Section 1601 (Streambed Alteration Agreements).
- Porter-Cologne Water Quality Control Act.

In addition, permits may need to be obtained for encroachment into floodways regulated by the Reclamation Board of California (federal flood control levees or within the 10-foot surrounding Reclamation Board easement, impacting flood control function of such levees, or within state designated floodway [Title 23 California Code of Regulations]); or from the State Lands Commission for encroachment onto submerged lands and swamp and overflowed lands owned by the state. Mitigation may be required as a condition for issuance of such permits.

In addition to federal and state laws and regulations, Yolo County and city ordinances may affect the implementation of IRWMP programs and projects. Such ordinances include zoning and development ordinances, tree preservation ordinances, storm water management ordinances and others.

There are several laws, mechanisms and programs that allow the streamlining of environmental compliance procedures. Streamlining usually reduces cost, saves time and may result in better environmental protections. Some of the procedures that may apply to the IRWMP are discussed in the following to sections.

6.4.2 Streamlining Environmental Compliance

Under CEQA and NEPA it is possible to prepare tiered compliance documents, such as program EIRs (or programmatic EISs) for agency programs that have smaller projects within them. For example, it may be appropriate to prepare a program EIR for an integrated project or program described in his IRWMP once planning and design are advanced and there is funding

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and intent to proceed. The advantages listed in the CEQA Guidelines (Sec. 15168[b]) of such a program EIR may then apply, including: (1) a more exhaustive consideration of impacts; (2) better attention to cumulative impacts; (3) avoidance of reconsideration of recurring policy issues; (4) consideration of more flexible programmatic mitigation measures; and (5) reduction of paperwork by the reuse of data.

Multi-objective projects, like those including water supply and aquatic and riparian ecosystem enhancement, may in themselves have reduced environmental impacts because they may have a large net environmental benefit (even though components of the projects may have environmental impacts). Such multi-objective projects may require less mitigation than single purpose projects.

Agencies may recognize the overall environmental benefits of a particular program, which may allow them to issue programmatic permits. Such a permitting agreement can substantially reduce regulatory red tape, and facilitate and accelerate the implementation of the beneficial program. A good example is the riparian restoration program for Putah Creek implemented by the LPCCC. Habitat restoration or watershed improvement actions conducted by, or in coordination with, the LPCCC that meet certain requirements are covered under DFG and US Army Corps of Engineers permits held by SCWA, and are subject to a categorical CEQA exemption (EDAW 2005, Appendices H and I). The permits include a programmatic Streambed alteration Agreement from DFG for work affecting the “bed and bank” of lower Putah Creek and its tributaries, a Nationwide Permit 27 (Restoration) under Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers, and Clean Water Certification pursuant to Section 401 of the Clean Water Act from the Central Valley Regional Water Quality Control Board. The requirements that projects need to meet typically include various environmental protections, such as avoidance of breeding seasons or salmonid spawning seasons, and BMPs, among others. Obtaining these types of programmatic permits may also be possible for other habitat restoration programs.

The Yolo County Resource Conservation District (RCD) conducted a watershed permit coordination program that was funded by a State Water Resources Control Board (SWRCB) Clean Water Act Section 319(h) grant from 1998 to 2001. This conservation facilitation project focused on coordinating regulatory agency representatives to limit bureaucratic obstacles to voluntary, landowner-led conservation efforts in the region. The RCD collaborated with SWRCB and non-profit partners to assess local opportunities for streamlining the permit process for landowners wanting to improve the quality of their property for hosting wildlife habitat. RCD staff continue to pursue that goal despite the conclusion of the grant.

Multi-species HCP/NCCP programs are an example of regulatory streamlining and regional habitat conservation with potentially far reaching compliance consequences. The Yolo County HCP/NCCP described below is an example of such a program that is currently under development.

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6.4.3 Yolo County HCP/NCCP

The Yolo County HCP/NCCP is a cooperative planning effort under California's Natural Community Conservation Planning Program Act and the federal Endangered Species Act to protect habitats and species. The Yolo HCP/NCCP will address the need for broad-based planning to provide for the protection and conservation of the region's biodiversity, while allowing for appropriate development and growth to occur. The HCP/NCCP "Planning Area" includes the entirety of Yolo County and all incorporated areas. To better manage the habitat conservation planning process, Yolo County and the cities of West Sacramento, Davis, Winters and Woodland have formed the Yolo County Habitat/Natural Communities Conservation Plan Joint Powers Agency (JPA) in 2002. This agency is responsible for coordinating the HCP/NCCP effort and reports to each of the participating jurisdictions. Adoption of the HCP/NCCP is expected by December 2008.

The HCP/NCCP will permanently protect habitat, establish preserve designs, and establish management guidelines for the conservation and recovery of at least 28 species (including endangered, threatened, candidate, or other species known, or reasonably expected to be found in Yolo County). This initial list of species will continue to evolve as the planning process continues. The JPA recognizes the importance of addressing unlisted species to provide for their conservation and management to ensure common species do not become listed as threatened or endangered under the Federal Endangered Species Act and/or the California Endangered Species Act; in addition to avoiding the need to develop new and different measures or restrictions to mitigate for impacts, should those species become listed in the future.

The natural communities upon which these species depend include riparian, woodland, wetland, grassland and agricultural habitats. These habitats have the potential to provide fully functional ecosystems for the species proposed for coverage in the HCP/NCCP, but are unlikely to withstand local growth pressures unless a comprehensive landscape-level program to preserve, protect, and manage the natural communities and the species they support is developed and implemented. Consequently, the JPA is committed to preparing and implementing a HCP/NCCP that will anticipate future development and other land uses that are likely to occur in the County, and provide a framework to ensure that these activities appropriately avoid, minimize, and mitigate for project impacts to these species and their habitats.

The Yolo HCP/NCCP planning goals include the following objectives:

- Provides for the preservation, conservation, and recovery needs of Yolo County's species and habitats within the planning framework.
- Allows appropriate and compatible economic growth and development consistent with applicable local land use laws and associated General Plans.

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- Provides a basis for permits and authorizations necessary to lawfully take the HCP/NCCP Covered Species listed as threatened or endangered pursuant to the terms of the federal Endangered Species Act and/or the California Endangered Species Act.
- Provides a process for issuance of take authorizations for the HCP/NCCP Covered Species not currently listed, which may be listed in the future without the imposition of additional mitigation requirements outside of the HCP/NCCP process.
- Provides a comprehensive means to coordinate and standardize mitigation and compensation requirements of the Endangered Species Act, CEQA, NEPA, the California Natural Community Conservation Planning Act and other applicable laws and regulations relating to biological and natural resources within the HCP/NCCP Planning Area; allowing public and private actions to be governed equally and consistently, thereby reducing delays, expenses and regulatory duplication.
- Provides a less costly, more efficient project review process which results in greater conservation values than the current project-by-project, species-by-species review and regulatory regime.
- Serves as a platform for the coordination of and cooperation among the various and on-going conservation planning efforts, occurring both within the county and in neighboring jurisdictions.
- Provides clear expectations and regulatory predictability for the land users and other conservation efforts within the Planning Area.
- Includes measures sufficient to enable the US Fish and Wildlife Service to issue incidental take permits in the event covered unlisted species are listed and subject to the “take” prohibition.

The Yolo HCP/NCCP will result in the following:

- Completion of a comprehensive countywide plan for the long-term conservation of multiple species.
- Establish a process to address future impacts of development on the county before remaining habitat is lost or degraded.
- Identify and develop conservation strategies and preserve designs for the county’s natural communities, including riparian, grassland, wetland and woodland habitats, essential to the range of plant and animal species covered by the plan.

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- Maintain effective cooperation and communication between stakeholders, local government, DFG and US Fish and Wildlife Service.
- Cooperatively develop mechanisms that forge partnerships among the participating local governments, and that utilize existing land use processes and procedures.

6.5 Public Outreach

Public outreach and other forms of stakeholder involvement are important components of the IRWMP implementation process. Public outreach is part of the overall implementation strategy for integrated projects and may also be part of the implementation of individual components of the integrated projects. The public outreach and stakeholder involvement process that were initiated as part of the development of the IRWMP form the basis of public outreach efforts and stakeholder involvement during further planning and implementation of the integrated projects.

The WRA has already initiated a stakeholder involvement process for Cache Creek flooding issues. Stakeholders have been interviewed and a report has been prepared about the results of that effort. That process has been especially productive in informing the WRA and member agencies about the concerns in the community about flood risk, flood insurance and the 100-year floodplain mapping conducted by FEMA. Stakeholders also indicated that an open community process is desired to move forward in addressing this issue.

The WRA and implementing agencies will need to coordinate their public outreach efforts with ongoing stakeholder involvement efforts, or efforts that will be initiated within the coming years. For example, the Yolo Bypass Wildlife Area has conducted a public involvement process as part of preparing its Land Management Plan. Stakeholders are also involved in the Yolo Bypass Working Group, which has been an important forum for stakeholder input. Another example is the public involvement process conducted by LPCCC that is underway as part of development and implementation of watershed improvements along Putah Creek. A major future public outreach effort will be part of the planning and implementation of the Yolo County HCP/NCCP as is required under the NCCP Act.

Specific efforts need to be made to reach disadvantaged communities through public outreach efforts. These efforts may include the need for translation services to ensure that non-English speakers are reached. Disadvantaged communities in the county have specific issues requiring attention in public meetings and workshops in these communities, including the aging of infrastructure in communities such as Yolo, Madison and Esparto. For those integrated projects that cover these towns specific outreach activities need to be included that highlight the needs for infrastructure improvements and that receive community input on aging infrastructure and other local issues.

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Overall, the citizens of Yolo County have shown an active interest in water resource management in the county, as demonstrated by the level participation in the community workshops for development of the IRWMP (**Appendix D**). The community workshops have been successful both as a forum to educate the community about the WRA and the IRWMP, as well as to inform the water resource management planning process about community concerns. Several possible tools could be used to keep the public at large and specific stakeholder groups involved in the implementation of the actions described in the IRWMP by the WRA and member agencies, including:

- Program-level annual conference or community workshop – Annual meetings to update the public about the progress that has been made in implementing the IRWMP, and to receive feedback on the water resource management issues from the community. This input can be used to assist the WRA in updating the IRWMP effort and ensuring progress on priority actions.
- Project-Specific Community Meetings – Meetings to inform the public and receive public input about specific integrated projects being planned, developed and implemented. In some cases the WRA may be able to use an existing forum (e.g., community meetings organized by the LPCCC) for its outreach efforts.
- Local Stakeholder Meetings – Smaller meetings that involve specific local groups, landowners and agencies (e.g., reclamation districts) to discuss and receive feedback on a particular integrated project or action.
- Periodic Mailings, Press Releases and Other Material – Numerous opportunities exist to distribute information about the implementation of the IRWMP and the WRA’s other programs. These mailings and press releases are most effective when they are coordinated with community meetings or other public events.
- WRA Website – The WRA website has become a useful tool for distributing documents, announcements and news about the IRWMP and WRA activities. The website can be used to keep the public informed about implementation of specific integrated projects or actions, and serves as a place where the public can provide comments on the WRA activities, IRWMP, or related resource matters.

6.6 Items for Early Action

The process and collaboration of WRA member agencies and non-member agencies and entities in formulating the Yolo County IRWMP has created the impetus for implementation. There are several examples to illustrate this fact including the following:

- The cities of Davis and Woodland and the University of California, Davis’ work in pursuing a regional water supply project to improve water quality and future water supply reliability.

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- The completed and ongoing work of the Lower Putah Creek Coordinating Committee along Putah Creek.
- The recommendation of the TC with support from the WRA Board of Directors during the preparation of the IRWMP to allocate planning grant funding to advance work on the Cache Creek Integrated Project.
- The early efforts of the Yolo County Flood Control & Water Conservation District, Yolo County, and the City of Woodland to create a management structure and pursue resolution of Cache Creek flood management issues in concert with other elements of the Cache Creek Integrated Project and to address existing flood related problems affecting towns and cities.
- The efforts of the Yolo Bypass Working Group in working toward a more formalized organizational structure and establishing a subcommittee to prioritize actions.

The energy and collaborative approach displayed through the preparation of the IRWMP and commitment of the participants as illustrated above was absent at the conclusion of previous water planning efforts, and so the results were limited. Accordingly, it is now critical that action is taken to provide a seamless transition from the IRWMP formulation to its implementation. To enhance the chances of success for IRWMP implementation it is imperative that attention be devoted immediately to address the items discussed below.

6.6.1 Legal Structure of WRA

The role of the WRA to function as the fiscal agent for securing funding opportunities and coordination of water resource activities requires modification of its legal structure. Under its present form the WRA is not able to enter into a contract to receive funding from state and federal programs. It was for this reason the Yolo County Flood Control & Water Conservation District served as the fiscal agent to the Proposition 50 planning grant that provided funding for preparation of this IRWMP. This modification should be made immediately, with full consideration of the future role and functions of the WRA as described in Section 6, and specifically to take advantage of the subsequent Proposition 50 funding opportunities scheduled for 2007.

6.6.2 Integrated Actions—Lead Partner and Partnership Commitment

The structure for management and implementation for each integrated action will necessarily be tailored to the specific needs of the particular sub-region or sub-watershed and partners involved. As a consequence the structure for each will likely be different and require a different role and approach by the WRA.

The lead partner(s) referred to in the IRWMP should formally confirm their commitment with the WRA to manage and coordinate work aimed at implementation of the IRWMP in their

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respective sub-regions, and to establish the management structure deemed most effective for implementing the integrated action. Although the WRA has no responsibility for implementation of the integrated actions, it does have a commitment to the community to enhance the management of water and related resources in the county. In the interest of fulfilling its commitment to the community it is looking to continue and strengthen the collaborative relationships among the WRA member agencies and non-member entities alike. This can only be accomplished with the full cooperation of the lead partner(s) involved with each integrated action.

6.6.3 WRA/Lead Partner Communications Protocol

The management structure for implementing each integrated action as noted previously will be different. The level of effort and activities being implemented for each integrated action will be different as well. Nevertheless it is important that the communication between the WRA and the lead partner(s) be sufficient for the WRA to be informed of the work, progress, and/or problems related to implementation of each integrated action in order to provide support and facilitation when appropriate while keeping the community informed. What is deemed to be sufficient for one sub-region may or may not be sufficient for another. To this end the WRA should identify general guidelines that reflect its expectations for communication with the leadership of the integrated actions. These guidelines would serve as the basis for discussing and establishing a preliminary protocol for communication with the leadership of each integrated action. Particular attention should be given to the communities and coordination involving the Putah Creek and Yolo Bypass Integrated Projects, both of which have lead partners that are not WRA members.

6.6.4 Work Plan Refinement

Work plans are presented in Section 7.0 to serve as a guideline or basis for initiating work for each of the integrated actions. As the lead partner(s) begins to implement the activities presented in each work plan, they will undoubtedly find the need to refine the activities and establish an order of priority as to the extent of the effort that can be implemented at any one time will be driven by the available time and budget resources. The work plan refinements should occur upon establishing the respective lead partners and management structure or concurrently if possible. When appropriate, intra-regional partnerships should be considered. Also, work plans may require coordination amongst the various Integrated Actions.

6.6.5 Funding Opportunities

There are several existing funding opportunities for various components of the integrated actions, including both planning and implementation grants through the second round of funding under Proposition 50, Chapter 8. As an early part of the planning for implementing the integrated actions the lead partner(s) should review their respective work plans to identify funding opportunities. These should be reviewed among with TC in order that the most

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effective strategy for pursuing and maximizing particular funding for the respective integrated actions can be the product of the continued collaborative process.

There are a variety of funding sources that currently exist as well as those that are being proposed for voter approval this year and those that may emerge in future to assist in funding foundational and integrated actions, or components of integrated actions, contained in the IRWMP. As noted in Section 6.2.5, an important responsibility of the TC will be to stay informed of the funding opportunities and through the collaborative process ensure that the lead partners of the respective integrated actions stay informed as well. In most cases implementation of an integrated action will require funding from more than one funding source due to a combination of factors, including funding restrictions in terms of amount and purpose, strong competition for limited funds, financing challenges where matching funds are required, and the level of local funding that is available.

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7.0 Action Program

Actions for this IRWMP are in three categories as described in Section 5: foundational actions, integrated actions, and non-integrated or stand-alone actions. In keeping with the intent of the implementation strategy for this IRWMP, the action program comprises tasks that must be performed to implement the new foundational and integrated actions. Work currently being performed on foundational actions should continue. The TC or members with a direct interest will address non-integrated or stand-alone actions individually, when attention to a particular action is warranted.

The action program consists of:

Foundational Actions (FA)

- FA1 Groundwater Monitoring Program
- FA2 Surface Water Monitoring Program
- FA3 Subsidence Monitoring Program
- FA4 Groundwater Model Enhancement Program
- FA5 Water Resources Information Database Enhancement Program
- FA6 HCP/NCCP Development
- FA7 Aquatic Habitat and Opportunities Assessment Program
- FA8 Topographic Mapping (LiDAR Project)

Integrated Actions (IA)

- IA1 Davis-Woodland Water Supply Project
- IA2 Reclamation District No. 2035 Sacramento River Diversion and Conveyance Project
- IA3 Cache Creek Integrated Project (This is the flood management and water management integrated projects combined.)
- IA4 Dunnigan Integrated Project
- IA5 Sacramento River West Bank Integrated Project
- IA6 Putah Creek Integrated Project

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IA7 Yolo Bypass Integrated Project

IA8 Yolo County Sloughs, Canals, and Creeks Management Program

The work plans for the new foundational actions and certain integrated actions provide the framework to guide implementation through the next three- to five-year period. Projecting tasks or activities into the future is not reasonable, given the foundational work that needs to be accomplished in order that the issues are better understood. The work plans identify the lead agency or partners, the tasks or activities to be performed, and the anticipated budget and time frame for performing the work.

During the course of preparing this IRWMP considerable discussion took place among the WRA's TC regarding the prioritization and integration of actions both within the respective geographic subareas of Yolo County as well as between them. At the public workshop on October 25, 2006, the subject of prioritization was the primary subject of discussion. In response to the public sentiment expressed at the third public meeting, the WRA devoted special attention to bring resolution to the issue of prioritization and integration as summarized below.

1. The lead partners were requested to prioritize actions for their respective integrated projects and identify their three top priority actions at the TC meeting on November 15, 2006.
2. Subsequent to item 1 above, the WRA authorized three months for the lead partners to further develop and/or refine the prioritization actions for their respective integrated projects. Additional resources were allocated to three integrated projects to advance this process. These projects include: (1) the Cache Creek Integrated Project; (2) the Yolo Bypass Integrated Project; and (3) the Sacramento River West Bank Integrated Project. Summarized in **Table 7-1** is a brief description of the activities undertaken to refine prioritization and integration of actions within the respective integrated projects.

The additional time authorized by the WRA for the lead partners to address prioritization and integration of potential actions proved to be invaluable for two reasons. First, it reinforces the approach set forth in this IRWMP to plan and manage resources in Yolo County according to the geographic subareas due to the unique characteristics of each subarea. Second, it reinforced the fact that the institutional framework within each geographic subarea is significantly different and the differences need to be respected and supported to truly integrate resources management in Yolo County.

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Action Program

Table 7-1 - Summary of Supplemental Activities to Prioritize Actions		
Integrated Project	Lead Partner(s) or Team	Description
Davis-Woodland Water Supply Project	City of Davis City of Woodland University of California, Davis	The priorities for this integrated project are reflected in the work plan in this section of this IRWMP. Prioritization of this integrated project was complete and no additional effort for prioritization was required. The discussion for the Davis-Woodland Water Supply Project is essentially the same as presented in the Draft IRWMP.
RD No. 2035 Sacramento River Diversion and Conveyance Project	RD No. 2035	The priorities for this integrated project are reflected in the work plan in this section of this IRWMP. Prioritization of this integrated project was complete and no additional effort for prioritization was required. The discussion for the RD No. 2035 Sacramento River Diversion and Convergence Project is the same as presented in the Draft IRWMP.
Cache Creek Integrated Project	City of Woodland Yolo County YCFC&WCD	The team met on several occasions to discuss prioritization including an interactive meeting with stakeholders. Building on the previous work the team developed both a general and specific level of integration and three levels or tiers of priority. The results of this effort are summarized in this section of this IRWMP under the Cache Creek Integrated Project. The results of the team's effort in addressing prioritization and integration are presented at the end of the discussion of the Cache Creek Integrated Project.
Dunnigan Integrated Project	Dunnigan Water District	The priorities for this integrated project are reflected in the work plan in this section of this IRWMP for the Dunnigan Integrated Project. They remain unchanged from the draft report. In view of the potential for 2,500 to 7,500 new residential units, the Dunnigan Water District adopted a policy statement expressing their interest in being the lead agency for handling water, wastewater, and storm runoff associated with the new development. The discussion for the Dunnigan Integrated Project is essentially the same as presented in the Draft IRWMP.

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Action Program

Table 7-1 - Summary of Supplemental Activities to Prioritize Actions		
Integrated Project	Lead Partner(s) or Team	Description
Sacramento River West Bank Integrated Project	City of West Sacramento Yolo County	The partners for this integrated project devoted considerable effort to reexamine the potential actions in all water management categories, conducted two public meetings, and went through an extensive process for integrating and prioritizing the actions. The results of the partners are presented in this section of this IRWMP under the Sacramento River West Bank Integrated Project and replace the material presented in the Draft IRWMP.
Putah Creek Integrated Project	Lower Putah Creek Coordinating Committee	The priorities for this integrated project are reflected in the work plan in this section. Prioritization for this integrated project was complete and no additional effort for prioritization was required. The discussion for the Putah Creek Integrated Project is essentially the same as presented in the Draft IRWMP.
Yolo Bypass Integrated Project	Yolo Bypass Working Group	For this integrated project, the Working Group devoted considerable effort to getting better organized and reexamining and defining potential actions in all water management categories. New prerequisite tasks were identified and they are described in this section under the Yolo Bypass Integrated Project. The results of the Working Group are presented in this section of this IRWMP under the Yolo Bypass Integrated Project and replace the discussion presented in the Draft IRWMP.
Yolo County Sloughs, Canals, and Creeks Management Program	YCFCWCD and Environmental, Agency, and Landowner Representatives	The group met on several occasions to initiate what it considered to be the beginning point of an ongoing collaborative process of prioritization, integration, and implementation. The group developed three functional categories for the component actions in this integrated project. The approach developed for this integrated project is presented in this section under the Yolo County Sloughs, Canals, and Creeks Management Program. The results of the group's effort in addressing prioritization and integration are presented at the end of the discussion on the Sloughs, Canals, and Creeks Management Program.

7.1 Foundational Actions

Foundational actions are essential for managing existing water resources, with or without this IRWMP, and for this reason several of the foundational actions have already been or are being implemented and will be expanded and enhanced over time. During the development process of this IRWMP, three new foundational actions emerged: Habitat Conservation Plan/Natural Communities Conservation Plan Development, Aquatic Habitat and Fish Monitoring Program, and Topographic Mapping.

WRA member agencies have implemented eight foundational actions:

FA1 Groundwater Monitoring Program

Lead Agency

Yolo County Flood Control and Water Conservation District (YCFCWCD).

Cooperators

Rumsey Band of Wintun Indians, Cache Creek aggregate companies, Cities of Davis, Woodland, and Winters, UC Davis, Dunnigan Water District, Reclamation District 2035, California Department of Water Resources, and Yolo County.

Description

YCFCWCD has an established groundwater monitoring program in place, with full documentation included in the District's Groundwater Management Plan 2006 (available at http://www.ycfcwcd.org/reports_page_1.htm).

YCFCWCD's groundwater monitoring program includes a mapping database of 160 monitoring well locations within the District, annual and monthly measurement of water levels, an annual report of water levels, annual water quality sampling, coordination of groundwater data with other regional agencies and the Water Resources Information Database (WRID). The exact number of wells monitored changes from time to time, due to changes in access, ownership, availability of power, and construction of new wells.

YCFCWCD also receives well water level data from the cooperating agencies, monitoring about 550 wells distributed Countywide semi-annually. Most groundwater level data received or collected by the District is submitted to the State's Water Data Library (available at <http://wdl.water.ca.gov/>).

Many groundwater monitoring activities have been funded by temporary grants and, more recently, from contributions through the WRA project funds budget and the

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Rumsey Band of Wintun Indians. YCFCWCD is currently working with cooperating agencies to sustainably fund the program and evaluating efficiencies related to the well sample monitored and methods of collecting and evaluating well data using web-based approaches. There is no permanent funding for most of the Groundwater Monitoring Program.

Public drinking water suppliers are required to conduct water quality testing and city-size systems require extensive testing and reporting to their customers and regulatory agencies. This type of groundwater quality data is not included in the District's Countywide program, but is collected by the California Department of Health Services. WRA will address the growing need to monitor the water quality of well as part of its effort to improve this important foundational program.

FA2 Surface Water Monitoring Program

Lead Agency

None.

Cooperators

None.

Description

There is no coordinated Countywide surface water monitoring program at present. However, on-going monitoring programs are in-place on various waterways, and a large number of smaller temporary investigations have occurred over the years. However, these individual surface water monitoring efforts need to be consolidated to improve the value of the data for implementation of actions identified in this IRWMP. These programs will not be reviewed here (please see the IRWMP Technical Appendix chapter on water quality for more information).

The YCFCWCD regularly collects surface and groundwater quality data from within its boundaries and as such is not a countywide network. This program would be enhanced with an overall assessment of the existing network of stations for both flow and water quality to determine where it would be appropriate to establish additional sites.

DWR and the US Geological Survey (USGS) gather and compile surface water data and it is readily available. The YCFCWCD shares costs of the operation and maintenance of the USGS stations at Clear Lake, Bear Creek, and the Willow Slough Bypass.

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There are many financial, technical, and logistical constraints related to aggregating water quality data into one database. The current system involves many different entities that monitor water quality for different purposes. This system will not be changed any time soon, but it should be improved to provide a sound basis for implementing some of the actions contained in this IRWMP. The importance is that the monitoring is happening on a relatively large scale, covering most of the County, and that the data is available for the uses for which it is being collected.

FA3 Subsidence Monitoring Program

Lead Agency

City of Davis.

Cooperators

Cities of Winters, Woodland, UC Davis, Dunnigan Water District, Yolo County Flood Control & Water Conservation District, Yolo County, and the California Department of Water Resources.

Description

The Yolo County GPS Subsidence Network was established in 1999 when initial observations were obtained. Second and third observations were obtained in 2002 and 2005. New stations added in 2002 and 2005, increased the overall coverage and network to over 55 monuments. The network incorporates two DWR extensometers that have been installed and monitored for more than 15 years. With three observations, a clearer picture of ongoing subsidence is beginning to emerge. Comparing the 2005 observations with previous observations provides definitive information about the amount and distribution of subsidence. The recent data confirms historic subsidence occurring along a corridor extending north from UC Davis/Davis, through Woodland, north to Zamora and through to the northeast corner of the county. This corridor corresponds with water users that rely primarily on groundwater supplies.

WRA plans to observe the subsidence network again in 2008, consistent with the 3-year observation cycle. This program will be coordinated with groundwater monitoring, water use, and enhancements to the Integrated Groundwater Surface Water Model (IGSM) effort to gain a more definitive understanding of the factors causing and affecting subsidence to help mitigate any adverse impacts on future investments in water supply, drainage, and flood protection infrastructure in the effected areas.

FA4 Groundwater Model Enhancement Program

Lead Agency

Yolo County Flood Control and Water Conservation District.

Cooperators

Cities of Davis, Woodland, and Winters, UC Davis, Dunnigan Water District, Reclamation District 2035, California Department of Water Resources, and the Yolo WRA.

Description

The IGSM is a hydrologic model covering nearly all of Yolo County that has been calibrated for the 1970-2000 hydrologic time period. The main output is groundwater elevation. The level of groundwater observed in the aquifer is an indication of how much water is available to pump and use. The model can simulate the sustainability of groundwater pumping during many scenarios, including extended drought scenarios, urban population growth impacts, groundwater recharge and reuse along Cache Creek, importation of Sacramento River water to the Woodland and Davis areas, and the use of the Cache Creek as a recharge feature and conveyance feature for irrigation water. Although the IGSM covers the entire County, the main focus of the model is along the lower Cache Creek corridor.

The cities of Davis, Winters, Woodland, and UC Davis, requested improvements in the resolution of the model grid to address issues specific to those areas. Dunnigan Water District also contributed data and information to validate the model to a higher degree in the Dunnigan area. The IGSM will be enhanced and incorporate new data to become the model of choice to assess particular resource scenarios. In the future, the model can address groundwater quality and subsidence concerns, using data from the foundational programs of groundwater monitoring and subsidence monitoring.

The IGSM model code and data are in the public domain format with user groups and engineering firms available who are well versed in the use of the IGSM as a tool for resource planning and management.

FA5 Water Resources Information Database Enhancement Program

Lead Agency

Yolo County Flood Control & Water Conservation District.

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Cooperators

Rumsey Band of Wintun Indians, Cache Creek aggregate companies, the Cities of Davis, Woodland, and Winters, UC Davis, Dunnigan Water District, Reclamation District 2035, California Department of Water Resources, and Yolo County.

Description

WRID is an Access database created in 2004 and housed at the Yolo County Flood Control and Water Conservation District offices. It contains about 190,000 records from 5,500 wells dated back to 1920. It is currently used to manage YCFCWCD's Countywide groundwater monitoring program.

The WRID database structure was used as a template for a groundwater monitoring database for the City of Davis and UC Davis joint Groundwater Management Plan effort. Many improvements were made to the Davis version of the database that can be applied regionally to improve the value of the database for storing and evaluating data for resource management.

With a small amount of financial support from WRA, YCFCWCD is planning to upgrade WRID, using lessons learned from the Davis database, to increase accuracy and efficiency of data submission from cooperating entities, improve access to collected data, streamline and improve accuracy of submission of data to the State, and provide a structure for increased sustainability of the entire program. Cooperating agencies will need to contribute additional funds to complete this program. Technical improvements should be finished by mid 2007 and institutional planning meetings by early 2007.

Although WRID can accept new water quality data, numerous technical and financial problems currently prevent new water quality data from being incorporated. Submission of water quality data will be discussed during the enhancement program process.

FA6 HCP/NCCP Development

Lead Agency

Yolo County HCP/NCCP Joint Powers Agency.

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Cooperators

Partners involved in implementing the respective integrated actions.

Description

The HCP/NCCP is a cooperative planning effort under California’s Natural Community Conservation Planning Program Act and the federal Endangered Species Act to protect habitats and species.

The Yolo HCP/NCCP will address the need for broad-based planning to protect and conserve the region’s biodiversity while allowing for appropriate development and growth to occur. The HCP/NCCP “Planning Area” includes all of Yolo County and all incorporated areas, which total 653,629 acres. To better manage the habitat conservation planning process, Yolo County and the cities of West Sacramento, Davis, Winters and Woodland formed the Yolo County Habitat Conservation/Natural Communities Conservation Plan Joint Powers Agency (JPA) in 2002. This agency coordinates the HCP/NCCP effort and reports to each of the participating jurisdictions.

The JPA has made significant progress toward completing the HCP/NCCP, including establishing a Steering Committee and a Technical Advisory Committee, preparing a draft Ecological Baseline Report, developing a GIS data base and completing the Independent Science Advisors process. The next phase of work includes the biological analysis of preserve design options, development of strategies to achieve the plan’s biological goals and objectives, evaluation of alternative approaches to plan implementation, and continued outreach and engagement of stakeholders and the public at large. A third and final phase of work will include developing the HCP/NCCP Document, completing the NEPA/CEQA process, and to conduct public scoping and outreach. Adoption of the HCP/NCCP is expected by December 2008.

Two additional foundational actions have been identified as being important for implementing this IRWMP. These are noted below as FA7 and FA8. Both of these actions are deemed important, however, detailed scopes, schedules, and budgets are needed for both actions.

FA7 Aquatic Habitat and Opportunities Assessment Program

Lead Agency

Not identified, but will be different for the respective subregions of the County.

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Cooperators

Partners involved in implementing the respective integrated actions.

Description

It has become increasingly clear to WRA that there is limited understanding of aquatic resources and the opportunities and constraints for enhancement in Cache Creek and the Yolo Bypass. However, the constraints and opportunities for management and enhancement of aquatic resources on Putah Creek are well defined, because of the attention, work, and resources allocated by the Putah Creek Council (and through a much broader collaborative effort by the Lower Putah Creek Coordinating Committee), As a result, actions to develop the Putah Creek element of this program are identified in the Putah Creek Integrated Project.

Although this foundational action is essential to the management of water and related resources in Yolo County, agreement on the scope of this action has not been established nor has the overall approach for establishing a countywide effort. Furthermore, the scope of the effort for Cache Creek could be quite different than the scope for the Yolo Bypass or for other subregions in the county. Accordingly, the TC agreed that this foundational action would be most appropriately addressed within the integrated projects for Cache Creek and the Yolo Bypass. Tasks required to initiate this program for the Cache Creek Integrated Project and the Yolo Bypass Integrated Project include:

1. Coordinate with the Lower Putah Creek Coordinating Committee for background information to help determine the overall purpose and scope of the program.
2. Hire consultant(s) with to help design the program, including methods for gathering and evaluating samples and compilation and reporting of the data.
3. Seek consistency, to the extent appropriate, between the programs for Cache Creek and the Yolo Bypass—in relation to Putah Creek.

FA8 Topographic Mapping (LiDAR Project)

Lead Agency

Yolo County.

Cooperators

WRA member agencies.

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Description

Topographic mapping available for Yolo County is fragmented and developed in a variety of detail, datum, and times. Detailed topographic mapping is available along Cache Creek and parts of Woodland, and new mapping is being developed for the City of West Sacramento. For a large part of the County, the U.S. Geological Survey quadrangle maps are available, however land forms have changed, sloughs and waterways have been modified, land subsidence has occurred, and development in various forms and locations has occurred. Implementing many of this IRWMP's integrated actions will require substantially better topographic mapping.

Implementation Tasks

1. Determine the geographic scope of the area to be mapped (assuming coverage will be limited to the valley area of the County).
2. Determine the specifications for which the mapping is to be developed.
3. Prepare bid documents and obtain bids for performing the work in the fall of a given year.
4. Select contractor and execute the work.
5. Establish the process and protocol for maintaining and disseminating the work product.

Budget

This work should be performed at a specification consistent with a minimum contour interval of two feet, with a budget of approximately \$400,000.

7.2 *Integrated Actions*

The majority of the potential actions identified in this IRWMP require prerequisite tasks before they can proceed to implementation. Some actions may be able to proceed sooner than others because of previous planning efforts or stakeholder involvement. Other actions, however, may require investigation and analysis to determine their feasibility.

Within certain subregions prerequisite tasks are identified that, when completed, would advance the understanding and direction for implementing component actions. Prioritization will in effect be the result of the extent that prerequisite tasks are required before an action can be implemented. Actions that can be implemented sooner because they have no or fewer prerequisite tasks would have higher priority.

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Proposed schedules for prerequisite tasks are general and should be interpreted as such, because the actual schedule for performing the various tasks will vary depending upon available funding and resources. A matrix is presented for each integrated action to indicate the relationship of the various prerequisite tasks to the component actions that form an integrated action.

Work plans for selected integrated projects identify tasks to be performed for the next three to five years in order to better understand how to implement or how to prepare to implement the integrated actions. The work plans consist of prerequisite tasks, a general timeline, and budget for performing the task in order to provide some dimension of the level of effort. These work plans are designed to help implementing entities better understand actions and assess the opportunities and benefits for integration. Work that can be completed within the three to five year period is regarded as short-term; work to be performed beyond five years is regarded as long term.

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IA1. Davis-Woodland Water Supply Project

As described in Section 5, the Davis-Woodland Water Supply Project (DWWSP) has been developed as a consequence of extensive water supply planning on the part of the three project partners including: City of Davis, City of Woodland, and UC Davis. Earlier this year, the project partners initiated the CEQA process, holding scoping hearings and issuing a Notice of Preparation (NOP). As set forth in the April 2006 NOP, “The objective of the project is to provide a reliable water supply of adequate quality for drinking and cost-effective wastewater treatment in Davis, Woodland and UC Davis through 2040 without removing a source of irrigation supply that would cause fallowing of land.” This project is driven by concerns about the reliability of existing groundwater sources, the quality of the groundwater supply, and the need to reduce salinity in treated wastewater discharges – a concern throughout the Central Valley.

The project aims to bring surface water from the Sacramento River as the primary water supply, with the existing groundwater supplies used only to meet peak demands. Currently, all three agencies use groundwater. Feasibility studies have been completed on the project, and environmental analysis and documentation is now underway. Once the environmental process is completed, the parties will decide how to proceed with securing the necessary water right permits. The project is considering diversions from the Sacramento River at several locations, and RD 2035 could eventually be involved if a diversion using its planned new screened pumping facilities is selected as the preferred option. This project also includes securing area-of-origin water rights and purchasing supplemental surface water in the summer to fill the anticipated deficits from area-of-origin supplies during many summer months. The supplemental summer water would be acquired from willing sellers who have water rights to meet Project needs and would not involve the fallowing of farmland.

Not all actions can be implemented at the same time; the sequence will involve securing necessary water right permits, establishing a Project entity, design and construction, and future operations. Various tasks involving additional studies and analyses will be required as part of the implementation process. As more information is obtained, analyses are completed, and funding issues are reconciled, decisions will be made that will affect and move the overall schedule forward.

Lead Agency, Partners, and Stakeholders

Local agencies or entities involved in planning and implementing the DWWSP are noted below. Various federal and state agencies will be involved from a resource and/or regulatory standpoint; however, their participation will be more appropriately determined at the time steps are taken to implement this project and its elements.

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The City of Davis is the lead agency, with the overall management responsibility for work performed for this integrated project. Partners in the program and stakeholders are:

- Partners City of Woodland
 UC Davis
- Stakeholders RD 2035
 Yolo County Flood Control & Water Conservation District
 Citizens of Davis and Woodland
 Other parties and interests participating in upcoming DEIR hearings
 Potential water sellers
 Groundwater users in the vicinity of Davis, Woodland and UC Davis

For the most part, these same parties will be involved as stakeholders in the component actions for this integrated project, although the responsible entities for implementation could vary as the project is implemented and moves forward.

Prerequisite Tasks

The parties have already performed various studies and investigations. **Figure 7-1** illustrates the relationship between the respective component actions and the prerequisite studies or investigations that are important to support the orderly development of the integrated action. Although sufficient planning has been performed to allow selected actions to proceed quickly, the majority of the actions require detailed planning and investigative work.

Presented below is a brief description of the tasks required to move the integrated actions forward. Most of these will be completed over the next three to five years. **Figure 7-2** presents a general schedule, time frame, and budget for completing the respective studies. Most of the studies and investigations below are related to the DWWSP, but may also be necessary for – or related to – the other component actions. Other studies or investigations are noted that relate to the other component actions.

1. Complete and Certify Environmental Documents

The cities and UC Davis have completed feasibility studies. Recently, they and the YCFCWCD began preparing the necessary environmental documentation to assess the impacts of the proposed project. A final EIR will satisfy the

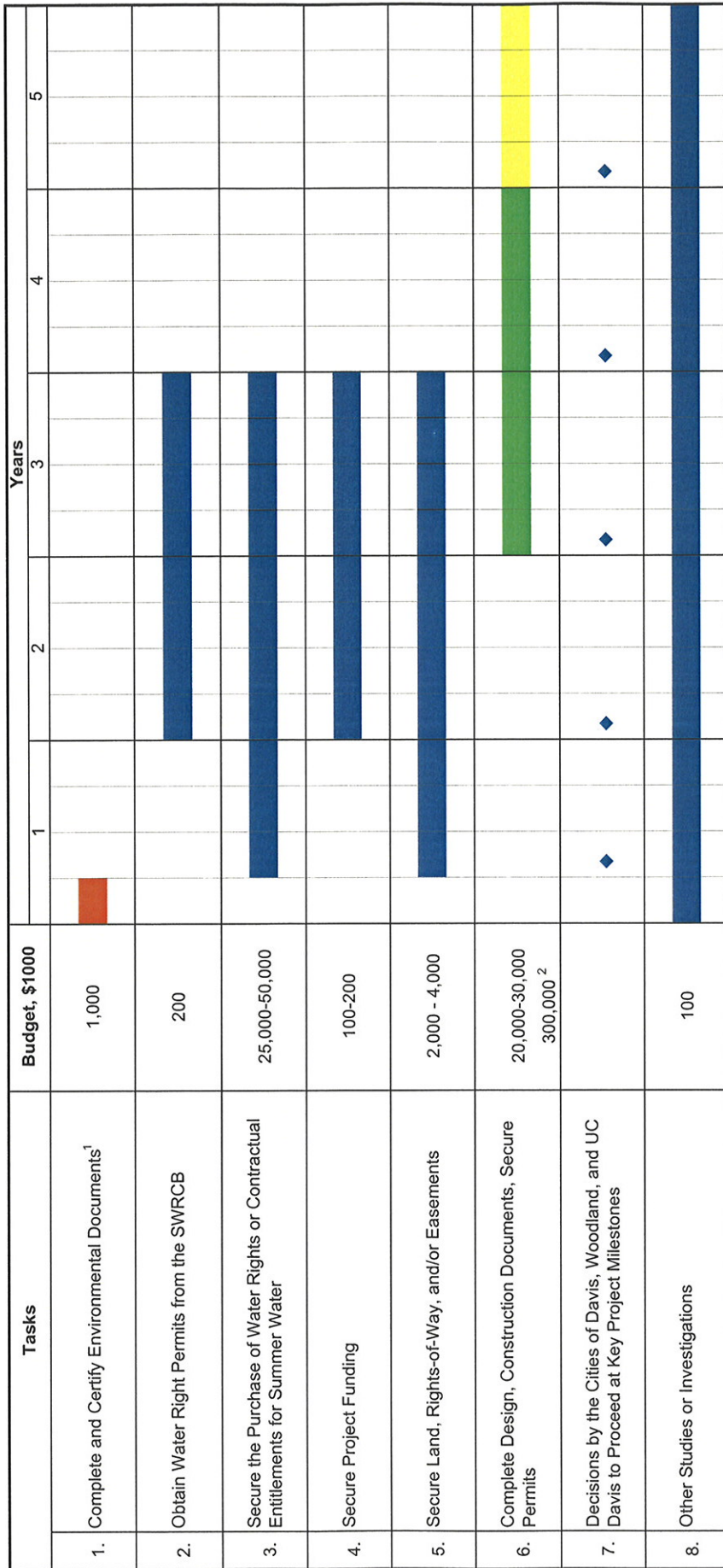


FIGURE 7-1
YOLO COUNTY IRWMP
DAVIS-WOODLAND WATER SUPPLY PROJECT
INTERRELATIONSHIP BETWEEN PREREQUISITE TASKS AND COMPONENT ACTIONS

TASKS	COMPONENT ACTIONS						
	Davis-Woodland Surface Water Supply Project	City of Woodland Water Meter Retrofit Program	RD 2035 Sacramento River Diversion and Conveyance Facilities	UC Davis Water Conservation Program	Comprehensive Conjunctive Water Use	Sacramento River Water Testing Program	
1. Complete and Certify Environmental Documents	X		X	X		X	
2. Obtain Water Right Permits from the SWRCB	X		X			X	
3. Secure the Purchase of Water Rights or Contractual Entitlements for Summer Water	X		X				
4. Secure Project Financing	X		X				
5. Secure Land, Rights-of-Way, and/or Easements	X		X				
6. Complete Design, Construction Documents, Secure Permits	X		X				
7. Decisions by the Cities of Davis, Woodland, and UC Davis to Proceed at Key Project Milestones	X		X				X
8. Other Studies or Investigations	X	X			X		



FIGURE 7-2
YOLO COUNTY IRWMP
DAVIS-WOODLAND WATER SUPPLY PROJECT
PREREQUISITE TASKS - SCHEDULE AND BUDGET



¹Environmental process underway, expected to be completed by early 2007. Budget reflects costs during 2005 and 2006.

²Represents estimated construction cost.

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requirements of CEQA and is scheduled to be adopted and certified during the winter of 2007.

2. Obtain Water Right Permits from the SWRCB

The cornerstone for this integrated action is the application to appropriate water from the Sacramento River under the Watershed of Origins provisions of the California Water Code. This application was originally filed in 1994 to provide up to 45,000 acre-feet of water annually for municipal uses for the cities of Davis, Winters, and Woodland, and UC Davis. The City of Winters subsequently withdrew from the application. Once the Final EIR is certified, the project partners will proceed with securing appropriate water right permits from the SWRCB, including both area-of-origin and summer water permits.

3. Secure the Purchase of Water Rights or Contractual Entitlements for Summer Water

After the Final EIR is certified, the project partners will pursue water supply transfer agreements with two or more senior water right holders in the Sacramento Valley. The April 2006 NOP lists those parties that have indicated an interest in entering into negotiations for water transfers, and others may be added. Implementation will require successful negotiation of purchase agreements and approval of the transfer by the SWRCB and/or others (depending upon the nature of the water right).

4. Secure Project Funding

The project partners will develop a financing plan for the DWWSP, following certification of the Final EIR and further refinement of the project costs, cost sharing agreements, and construction schedule. Developing and implementing the financing plan is expected to take up to two years, during which technical studies and other activities would continue.

5. Secure Land, Rights-of-Way, and/or Easements

Once the Final EIR is certified, the partners will ensure all land and rights-of-way are acquired for project implementation. A funding agreement will need to be developed among the project partners, and will likely precede (and ultimately be superseded by) a long-term financing plan. This activity will be driven by the preferred alternative selected in the FEIR.

6. Complete Design, Construction Documents, Secure Permits

Construction cannot begin until these activities are completed.

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7. Decisions by the Cities of Davis, Woodland, and UC Davis to Proceed at Key Project Milestones

Each major step toward project construction will require decisions by the project partners, with a major decision being approval and implementation of the financing plan.

8. Other Studies or Investigations

While most of the activities above are related to the Davis-Woodland Water Supply Project, the other elements of this integrated action will proceed. The City of Woodland has begun retrofitting pre-1992 homes with water meters, which will be completed by 2025, along with the adoption of volumetric water rates pursuant to California law. UC Davis continues to pursue aggressive water conservation actions, which will be a key component of future development on the campus (including the new neighborhood planned in the West Davis area and the future research park). The RD 2035 water intake project is being pursued, and will include a new diversion structure, pump station, and fish screen to meet the latest criteria for fish screen design as defined by the NOAA Fisheries and the California Department of Fish and Game. Design and environmental studies have been completed for the project. The remaining effort is to secure project approval from federal and state regulatory agencies, secure project funding, and construct the facilities. The intake project could have a direct linkage to the Davis-Woodland Water Supply Project if the selected intake for the project is the RD 2035 intake.

YCFCWCD's Comprehensive Conjunctive Water Use Program (WS16) could include a variety of methods (recharge/recovery, off-stream storage, and canal modification) to store and use additional water diverted from Cache Creek between Capay Dam and the Cache Creek Settling Basin. YCFCWCD filed a water right application in 1993 for a new diversion. The new water that will be developed can be used to benefit agricultural, environmental, and municipal interests. A significant amount of work has already been completed on this project, including establishing a groundwater monitoring program; developing a regional groundwater model; and preliminary investigations into associated water rights, engineering, economic, and environmental issues. YCFCWCD will need to pursue and gain the water right to implement this action.

The Sacramento River Water Testing Program (WQ13) involves funding and implementing raw water testing for cryptosporidium and guardia to comply with the recent Federal Stage 2 Disinfection Byproduct Rule. This is expected to be pursued in the same time frame as construction and completion of the Davis-Woodland Water Supply Project.

Summary

Considerable work is required to implement each of the component actions, dominated by the specific implementation activities of the DWWSP. Construction activities for the DWWSP are expected to begin within the next five years, with the project operational in the 2015-2020 time frame. Activities for the DWWSP related to securing necessary water right permits, Project funding, and right-of-way will be completed within the next three to five years. The other component actions will continue to move forward during this time frame, although full implementation of each component action will be accomplished at different times in the future. For example, the Sacramento River Water Testing Program (WQ13) will be implemented toward the end of completion of the DWWSP, while the City of Woodland Water Meter Retrofit Program (WS12) will be completed by 2025, as required by State law.

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**IA2. Reclamation District No. 2035 Sacramento River
Diversion and Conveyance Project**

As described in Section 5, the RD 2035 Sacramento River Diversion and Conveyance Integrated Project would provide a combination of fisheries enhancement with a state-of-the-art fish screen, and water supply reliability for agriculture and wetlands management in and adjacent to the Yolo Bypass. The project is intended to ensure an adequate water supply in a manner that is efficient, economical, and environmentally sound through actions consistent with IRWMP objectives related to:

- Coordinating and conjunctively managing surface and groundwater supplies.
- Maximizing the extent to which statewide priorities are met.
- Enhancing the aquatic and riparian environment.

Individual actions included in this integrated project include the Foundational Actions and the following:

- RD 2035 Sacramento River Diversion and Conveyance Facilities Project
- Davis-Woodland Surface Water Project

Lead Agency, Partners, and Stakeholders

Various federal and state agencies will be involved from a resource and/or regulatory standpoint; however, their participation will be more appropriately determined at the time steps are taken to implement this project and its elements.

RD 2035 would be the lead agency with overall management responsibility for the work performed for this project. Partners and stakeholders would change, depending upon whether this project proceeds alone or is ultimately integrated with the Davis-Woodland Water Supply Project. If the project proceeds alone the following partners and stakeholders would be involved:

- Partners None
- Stakeholders Parties and interests participating in any regulatory processes

The partners for the Davis-Woodland Water Supply Project (DWWSP) are considering three potential diversion points on the Sacramento River, including the RD 2035 intake. If the DWWSP ultimately uses the RD 2035 intake facilities, both projects would be linked as a common facility serving dual purposes. A joint project would then include the following partners, and bring in the following potential stakeholders:

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- **Partners** City of Davis
 City of Woodland
 UC Davis
- **Stakeholders** Yolo County Flood Control & Water Conservation District
 County of Yolo
 Citizens of Davis and Woodland
 Other parties and interests participating in upcoming DEIR hearings
 Potential water transfers interests

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Prerequisite Tasks

This section is divided into two subsections. The first assumes that this project will proceed as an independent effort, and RD 2035 will implement the project as planned to date. The second section describes the process if the proposed project is combined with the DWWSP, where the selected surface water intake is one shared with RD 2035. At the time this IRWMP is being developed, no decision was expected as to the course of action. It will be subject to the outcomes of the environmental evaluation of project alternatives by the DWWSP partners, and, if appropriate, any subsequent negotiations with RD 2035.

Tasks for RD 2035 Intake Alone – All design has been completed, based on fish screen design criteria of the California Department of Fish and Game and the U.S. National Marine Fisheries Service. Remaining activities, described below, are those needed to completing and certifying environmental documents, securing project funding, commencing and completing construction, and beginning operation. Consistent with all projects in this IRWMP, activities are described for the next five years. If this project proceeds alone, it will be operational within this five-year period. **Figure 7-3** shows the relationship between the various tasks and the two component actions and **Figure 7-4** is a general schedule and budget for completing the tasks.

1. Complete and Certify Environmental Documents

All final environmental documents will be certified for a project that will meet the ongoing needs of RD 2035 water users.



FIGURE 7-3
YOLO COUNTY IRWMP
RECLAMATION DISTRICT NO. 2035 SACRAMENTO RIVER DIVERSION AND CONVEYANCE INTEGRATED PROJECT
INTERRELATIONSHIP BETWEEN PREREQUISITE TASKS AND COMPONENT ACTIONS

TASKS	COMPONENT ACTIONS	
	Davis-Woodland Surface Water Supply Project	RD 2035 Sacramento River Diversion and Conveyance Facilities
1. Complete and Certify Environmental Documents	X	X
2. Obtain Water Right Permits from the SWRCB	X	X
3. Secure the Purchase of Water Rights or Contractual Entitlements for Summer Water	X	X
4. Secure Project Financing	X	X
5. Secure Land, Rights-of-Way, and/or Easements	X	X
6. Complete Design, Construction Documents, Secure Permits	X	X
7. Decisions by the Cities of Davis, Woodland, UC Davis and RD 2035 to Proceed at Key Project Milestones	X	X
8. Other Studies or Investigations	X	X



FIGURE 7-4
YOLO COUNTY IRWMP
RECLAMATION DISTRICT NO. 2035 SACRAMENTO RIVER DIVERSION AND CONVEYANCE INTEGRATED PROJECT
PREREQUISITE TASKS - SCHEDULE AND BUDGET

Condition 1: RD 2035 Intake Developed as Originally Planned

Tasks	Budget, \$1000	Years				
		1	2	3	4	5
1. Complete and Certify Environmental Documents ¹		█				
2. Secure Project Funding	25-50		█			
3. Construction	15,000-25,000			█	█	

Condition 2: RD 2035 Intake Developed as Joint Project with Davis-Woodland Water Supply Project

Prerequisite Studies/Tasks	Budget, \$1000	Years				
		1	2	3	4	5
1. Complete and Certify Environmental Documents*	1,000	█				
2. Obtain Water Right Permits from the SWRCB	200			█		
3. Secure the Purchase of Water Rights or Contractual Entitlements for Summer Water	25,000-50,000			█		
4. Secure Project Funding	100-200			█		
5. Secure Land, Rights-of-Way, and/or Easements	2,000 - 4,000			█		
6. Complete Design, Construction Documents, Secure Permits	20,000-30,000 300,000 ²			█	█	
7. Decisions by the Cities of Davis, Woodland, and UC Davis to Proceed at Key Project Milestones		◆		◆		◆
8. Other Studies or Investigations	100	█	█	█	█	█

¹Environmental process underway, expected to be completed by early 2007. Budget reflects costs during 2005 and 2006.

²Represents estimated construction cost.



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2. Secure Project Funding

Developing and implementing the financing plan is expected to take about one year, and could include consideration of state grant funds since this project is expected to contribute to the goals of several state-related programs including the CALFED Ecosystem Restoration Program and Plan.

3. Construction/Operations

Once financing has been secured, this project can go into construction. Total construction time is estimated to be 1-1/2 years, after which operations will be shifted from the existing intake to the new/upgraded facilities.

Tasks for RD 2035 Intake Integrated with Davis-Woodland Water Supply Project – Design and environmental studies have been completed for the RD 2035 intake project alone. The remaining effort for an integrated project would be to complete environmental studies and secure approvals for a combined water intake from the federal and state regulatory agencies, secure project funding, and construct the facilities.

If the RD 2035 intake is integrated with the DWWSP, tasks will be the same as presented earlier for Integrated Action IA1 DWWSP. **Figure 7-4** is a general schedule and budget for completing the respective tasks.

Summary

RD 2035 has decided to proceed with a project to improve/replace its existing water intake structure, including installation of a state-of-the-art fish screen. Implementation is being delayed, while consideration is being given to developing joint intake facilities to accommodate diversions for the DWWSP. A joint project could provide cost and institutional advantages to the project partners and RD 2035. A conceptual decision is expected soon after the DWWSP Final EIR is certified, by early 2007. Studies and activities leading to construction are outlined above.

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IA3. Cache Creek Integrated Project

The planning process, as presented in Section 5, resulted in two integrated projects being identified for the Cache Creek area. As the planning process progressed, it became evident that both integrated projects encompass actions that would have to be carefully coordinated for flood and water supply operations. It was also apparent that both projects would cover a wide range of actions aimed at aquatic habitat and riparian ecosystem enhancement and recreation without a clear separation among the various actions. Accordingly, it was deemed appropriate to combine the two integrated projects into a single Cache Creek Integrated Project (CCIP); however, in so doing the combined integrated project becomes one of great complexity that must be implemented with full consideration of: the recent Wild and Scenic designation of a part of Cache Creek; Cache Creek Federal Wilderness Designation on land owned by the Bureau of Land Management, and Yolo County's Cache Creek Resource Management Plan (CCRMP). Managing the work to implement this integrated project, in a manner that maximizes the benefits for resource management and financial efficiency, will be a challenge. More importantly, the aim to integrate activities should in no way become a constraint or delay implementation where early action is deemed appropriate.

Due to the complexity of the CCIP, it was determined that the success in integrated management and implementation of the work would be greatest with the CCIP management organized within the framework of following three elements:

- Flood Management Element
- Water and Aquatic Habitat Element
- Recreation and Riparian Habitat Element

This structure accounts for the wide range of issues, priorities, and stakeholders and provides the opportunity for actions to be integrated where appropriate, but facilitates moving actions forward in an integrated manner or on a stand-alone basis where appropriate as well. The overall success will be determined by the strength of the management team assembled for this CCIP.

There are 37 component actions included in this integrated project. Eleven are incorporated within the Flood Management Element, 14 within the Water and Aquatic Habitat Element, and 10 within the Recreation and Riparian Habitat Element. It is recognized that all actions cannot be implemented at the same time and most, if not all component actions, will require some level of study and analysis prior to being implemented. Some that are close to the implementation phase still require the preparation of construction plans and specifications. As more information is obtained, analyses are completed, and funding is available, decisions will be made that will affect the overall schedule. Thus the management of the elements comprising the CCIP is extremely critical to achieve effective integration.

Lead Agency, Partners, and Stakeholders

Local agencies or entities involved in planning and implementing the CCIP are noted below. Clearly, various federal and state agencies will be involved from a resource and/or regulatory standpoint; however, their participation will be more appropriately determined at the time steps are taken to implement component actions. Nevertheless, it is the intent to have all federal and state agencies involved in a collaborative process throughout the planning and implementation process that will be driven by the local management of the CCIP. The participants within each element will be different; however, there will be some overlap between the elements as well. A structure for managing the overall CCIP and the individual elements needs to be developed by the respective partners.

By virtue of efforts initiated during the formulation of this IRWMP to address flood management within the Cache Creek watershed, a partnership consisting of the YCFCWCD, Yolo County, and the City of Woodland is currently being discussed. These discussions are consistent with Action FM35 (Creation of flood management entity or separate entity) which is aimed at establishing a cooperative effort to address flooding associated with Cache Creek. As part of this IRWMP, the YCFC&WCD, City of Woodland, and Yolo County met on several occasions to further discuss prioritization and integration using the information presented for this integrated project as background and the basis for discussions. The results of this effort are presented at the end of this integrated project. It is also the intent of these discussions to address flooding associated with storm runoff within the county generally as it as it affects existing communities and traffic. The latter is addressed within Integrated Action No. 8, Sloughs, Canals, and Creeks Integrated Project.

Collaborating partners in various elements of the CCIP and stakeholders include the following:

- **Partners**
 - Cache Creek Conservancy
 - Yolo County Resource Conservation District
 - Lake County Flood Control & Water Conservation District
- **Stakeholders**
 - Cache Creek Water Forum
 - Cache Creek Wild
 - Cache Creek Aggregate Producers
 - California Department of Fish and Game
 - California Department of Water Resources
 - Federal Emergency Management Agency

I n t e g r a t e d R e g i o n a l W a t e r M a n a g e m e n t P l a n
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Reclamation District No. 2035

Riparian Landowners

State Reclamation Board

Town of Esparto

Town of Madison

Tuleyome

U.S. Army Corps of Engineers

U.S. Bureau of Land Management

U.S. Fish and Wildlife Service

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Prerequisite Tasks

To date, various studies and investigations have been performed in relation to elements of this integrated action. However, no investigations have been performed with the focus on integration as presented herein. Accordingly, a deliberate collaborative planning effort is required to determine the full range of opportunities and constraints to be dealt with to implement this integrated action. Integration, however, should not be a constraint or an impediment to implementation. Presented on **Figure 7-5** is a matrix illustrating the relationship between the respective individual or component actions and the tasks that are deemed important to support the orderly implementation of the integrated action. Although in some instances sufficient planning has been performed to allow selected actions to proceed early, the majority of the actions require tasks involving detailed planning and investigative work, or the preparation of construction plans and specifications in order to be advanced.

Below is a brief description of the tasks. A general schedule, time frame, and budget for completing the respective tasks are presented on **Figure 7-6**.

Flood Management Element

1. Develop and Implement a Public Involvement Program

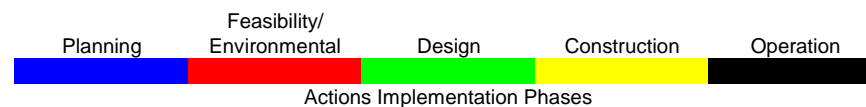
The partners for this integrated project have conducted preliminary stakeholder interviews to formulate a public process for addressing flood management associated with Cache Creek. Recommendations have been made with respect to this public process. These are under consideration by the partners at this time.

**FIGURE 7-6
YOLO COUNTY IRWMP
CACHE CREEK INTEGRATED PROJECT
PREREQUISITE TASKS - SCHEDULE AND BUDGET¹**



Tasks	Budget, \$1000	Years				
		1	2	3	4	5
FLOOD MANAGEMENT ELEMENT						
1. Develop and Implement a Public Involvement Program	100-200	█	█	█	█	█
2. Establish a Flood Management Technical Advisory Committee	200	█	█			
3. Facilitate Long-Term Solution for Cache Creek Sediment	50-100	█	█	█	█	█
4. Evaluate Feasibility of Flood Management Alternatives	1,500		█	█	█	█
5. Evaluate Flood Emergency Preparedness Plans	25-50	█	█			
6. Continue Removal of Exotic and Invasive Species		█	█	█	█	█
WATER AND AQUATIC HABITAT MANAGEMENT ELEMENT						
1. Develop Preliminary Design for Cache Creek Recharge / Recovery Project	50-100			█	█	
2. Perform Aquatic and Riparian Habitat Assessment	50-100	█	█			
3. Determine Potential Impacts to Groundwater Users	50-100	█	█			
4. Update Esparto and Madison Community and Infrastructure Plan	25	█	█			
5. Determine Feasibility of Providing Treated Water Supply to Esparto / Madison	50-100		█	█		
6. Perform Functional and Structural Integrity Assessment of Capay Dam and Moore Siphon	100-200		█	█	█	
7. Perform Assessment of West Adams, Hungry Hollow, and Clover Canals	50-100	█	█			
8. Determine Reliability of Colusa Basin Drain Water	50-100		█	█	█	█
9. Perform Geotechnical Assessment for County Road 19 Storage Reservoir	50-100		█	█		
10. Determine Feasibility of Implementing Cache Creek Recharge / Recovery Project	100			█	█	█
11. Evaluate Potential for Establishing Anadromous Fish Population	200		█	█	█	
12. Evaluate Potential for Aquatic Habitat Enhancement	25-50		█	█	█	
13. Determine Alternatives and Feasibility of Utilizing Reclaimed Wastewater	100		█	█	█	
14. Evaluate YCFCWCD Cache Creek Water Right Application	25-50	█	█	█	█	
RECREATION AND RIPARIAN HABITAT ELEMENT						
1. Evaluate Potential for Riparian Habitat Enhancement	50-100	█	█	█	█	█
2. Design and Implement Cache Creek Nature Preserve Improvements	50	█	█	█	█	█
3. Prepare Lower Cache Creek Regional Parkway Master Plan	50	█	█	█	█	█
4. Formulate and Implement Lower Cache Creek Parkway Access Project	25	█	█	█	█	█
5. Perform Camp Haswell Stone Cabin Restoration Study	25-50	█	█	█	█	█
6. Design and Implement Cache Creek Regional Campground Habitat Enhancement Project	50-100	█	█	█	█	█
7. Design and Implement Camp Haswell / Otis Ranch Improvement Project	50-100	█	█	█	█	█
8. Develop Plan for a Blue Ridge Campground	25	█	█	█	█	█
9. Design and Implement Corell-Rogers Wetlands Project	25-50	█	█	█	█	█
10. Develop Plans for Grube-Payne Riparian Habitat Enhancement Program	25	█	█	█	█	█

¹The budget is for the first phase shown for each task.



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2. Establish a Flood Management Technical Advisory Committee

A recommendation arising from the interviews that were conducted by the partners is to establish a Technical Advisory Committee (TAC) to address items related to flood management to provide a foundation for the public process. The TAC would be assigned to perform the following:

- a. Review, validate, or identify needed enhancements to input parameters and assumptions for the hydrologic and hydraulic models used by FEMA and the Corps of Engineers to delineate the 100-year floodplain.
- b. Review, validate, or identify needed enhancements to input parameters and assumptions for the 2002 (MBK) channel roughness model.
- c. Identify and describe the full range of measures and alternatives that should be considered for Cache Creek flood management.
- d. Identify new studies, technical peer review, or data collection that may be needed to better quantify the flood hydrology of Cache Creek.
- e. Identify new work that may be needed to improve the Cache Creek flood hydraulics models.
- f. Identify the hazards and risks associated with flooding from Cache Creek.
- g. Prepare responses to “Frequently Asked Questions” (a layman’s guide for public distribution) about Cache Creek flood risks, causes of flooding, means for managing floods, and the direct and indirect effect of major Cache Creek floods for distribution to the public.

3. Facilitate Long-Term Solution for Cache Creek Sediment

The Cache Creek Settling Basin, a feature of the Federal Sacramento River Flood Control Project, was constructed in 1937. It has undergone several modifications, with the most recent major modification being completed in 1992, and provides up to 50 years of sediment storage. The primary purpose of the Settling Basin is to provide reduced flood risks from the Sacramento River for the Sacramento Metropolitan area. The modified Settling Basin has significantly impacted local drainage and altered the pattern of flooding or potential flooding from Cache Creek. This feature is a responsibility of the Corps of Engineers and the State Reclamation Board; however, the impacts are local. From the standpoint of planning and implementing measures for handling storm runoff whether it be local or from the Cache Creek, it is important to know the long-term plans for handling sediment from the Cache Creek watershed. The majority of the work for this task will be the responsibility of the Corps of Engineers and the State

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Reclamation Board; however, it is essential that the partners for this integrated project get the respective agencies engaged in seriously addressing the issue.

4. Evaluate Feasibility of Flood Management Alternatives

The flood management alternatives identified in Task 2 would be evaluated to determine those that warrant further analysis. A detailed work plan would be developed under this task for more detailed analysis of the selected alternatives.

5. Evaluate Flood Emergency Preparedness Plans

The Yolo County Office of Emergency Services and the City of Woodland have emergency preparedness plans to address flood-related hazards associated with Cache Creek. These plans should be evaluated once the hazards and risks associated with Cache Creek have been reevaluated and characterized by the TAC.

6. Continue Removal of Exotic and Invasive Species

Tamarisk and Arundo are widespread throughout the principal tributaries to Cache Creek, as well as Cache Creek itself. Efforts are underway to eradicate the species for purposes of flood conveyance capacity and native habitat Restoration. This activity needs to be continued aggressively to be effective in removing and preventing its reestablishment and monitored for effectiveness and directing subsequent efforts.

Water and Aquatic Habitat Management

1. Develop Preliminary Design for Cache Creek Recharge/Recovery Project

Develop a preliminary design for the Cache Creek Recharge/Recovery Project and operating protocols to determine the magnitude of new water that can be developed. This analysis should be performed using the Yolo County IGSM that was prepared recently by the YCFCWCD under an AB 303 grant administered by DWR.

The design of the project will require investigating the most effective methods for inducing recharge along the creek bed and/or directing recharge of surface water through existing and improved irrigation canals, the subsequent extraction of the recharged water, and utilizing the storage capability of the groundwater basin in the vicinity of Cache Creek. Consideration should be given first to developing a new increment of water under the YCFCWCD's application filed with the SWRCD to appropriate "winter" water from Cache Creek. Full consideration should be given to evaluating the reclamation plans of the aggregate mining companies operating along Cache Creek to determine if managing the resources

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and implementing the component actions may be better served by modifying the reclamation plans.

2. Perform Aquatic and Riparian Habitat Assessment

Perform an aquatic and riparian habitat assessment and determine the opportunities for enhancement throughout the Cache Creek system.

The bed and banks of Cache Creek downstream of Capay Dam have been substantially altered over time and the existing channel is the result of activities performed without a great deal of consideration for the opportunity or the potential for enhancing both aquatic and riparian habitats. This assessment should inventory the existing habitat and resources and identify opportunities for enhancement with and without supplemental water supplies. Special attention should be given to managing invasive species throughout the system as well.

3. Determine Potential Impacts to Groundwater Users

Effective utilization of the storage capability of the groundwater basin in the vicinity of Cache Creek will require operating the basin differently than it was historically used. As a consequence, the water levels in existing wells may be different from what landowners have historically experienced and observed under similar hydrologic conditions. For this reason, the potential changes, positive or negative, need to be identified and quantified in order to appropriately develop mitigation measures. Similarly, existing habitats, as identified in Task 2, could be adversely impacted and the potential for this to occur needs to be determined.

4. Update Esparto and Madison Community and Infrastructure Plans

Based upon preliminary information from work on the Yolo County General Plan Update, it appears the towns of Esparto and Madison are expected to grow. Accordingly, the community and infrastructure plans should be updated with respect to water supply and wastewater consistent with the County General Plan. Both communities are served entirely with groundwater and have had difficulties with quantity and quality of their water supply. The update to the infrastructure plans should refine the water demand projections and fire flow needs for both communities, as well as the wastewater discharge projections.

5. Determine Feasibility of Providing Treated Water Supply to Esparto and Madison

The most effective means of providing a long-term reliable water supply to meet the water demands and fire flow requirements for both communities needs to be determined consistent with the planned growth and development. Both communities are currently on well water supplies and the development of additional supplies and meeting fire flow requirements has historically been

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problematic. As the amount and reliability of a new increment of water is determined for the proposed Cache Creek Recharge/Recovery Project, the feasibility of providing a treated water supply for both communities should be evaluated. Concurrent with determining the feasibility of providing a water supply for both communities, the most effective organization for operating and maintaining the facilities should be determined as well. It is conceivable that the two communities could be served and managed by a single entity.

6. Perform Functional and Structural Integrity Assessment of Capay Dam and Moore Siphon

Capay Dam is a central feature in providing irrigation water to nearly 60,000 acres of land in Yolo County, and both directly and indirectly provides a significant amount of recharge to the groundwater basin. Additionally, it is central to proposed management opportunities for groundwater and surface water storage and enhancing the aquatic and riparian habitats downstream of Capay Dam. Therefore, the functional and structural integrity of the facility is essential for the ongoing and long-term management of water from Cache Creek.

The Moore Siphon (or other water control or management feature at that location) is critical not only for the YCFCWCD's existing operations, but for managing water resources along Cache Creek to enhance water supplies for agriculture, communities, aquatic and riparian habitat, and recreation.

The integrity of both structures is critical for reasons noted. However, it is important to determine the manner in which both facilities will be used to potentially enhance integrated resource opportunities. Capay Dam will certainly remain; however, the operation of its water control and management features may need to be modified to accommodate operation to support planned resource enhancement projects.

7. Perform Assessment of West Adams, Hungry Hollow, and Clover Canals for Non-Irrigation Season Conveyance

Opportunities to enhance the management of water resources from Cache Creek include using the West Adams Canal, Hungry Hollow Canal, and Clover Canal to deliver and convey water to and from recharge areas and potential water storage facilities like the County Road 19 reservoir. Therefore, the demand on the facilities for reliable operation in both the irrigation and non-irrigation or winter season will be increased.

There is significant cross-drainage that, during high rainfall events, results in the deposition of sediment in the canal system and erosion of the canal banks as well. The operation of the facilities under these conditions needs to be investigated to determine needed mitigating measures to be implemented.

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8. Determine Reliability of Colusa Basin Drain Water Supply

The Colusa Basin Drain is fully appropriated during the irrigation season. However, during the winter months, even during dry years, there appears to be unappropriated water in the drain. To the extent this availability of water is confirmed, the Colusa Basin Drain offers the potential for a reliable water supply. The quantification of the potential water supply and evaluation of the quality and the impacts of storing the water and/or using it directly for various applications should be performed. Depending upon the results of this work, there could be opportunities to utilize this water supply for the CCIP as well as the Dunnigan Integrated Project.

9. Perform Geotechnical Assessment for County Road 19 Storage Reservoir

The proposed County Road 19 water storage reservoir has the potential to develop a new increment of water when operated in conjunction with the YCFCWCD's Indian Valley Reservoir, Cache Creek, the proposed Cache Creek Recharge/Recovery Project, and/or the Colusa Basin Drain. To date, there has not been an investigation of the suitability of the foundation material for constructing the facility. Pending the results of the other prerequisite investigations and the overall utility of the proposed reservoir, a geotechnical investigation of the foundation and reservoir area should be performed.

10. Determine Feasibility of Implementing Cache Creek Recharge/Recovery Project

Using the information developed from other prerequisite investigations identified for this integrated project, a comprehensive plan should be prepared utilizing the new increment of water that could potentially be available from implementing the Cache Creek Recharge/Recovery Project alone, or in conjunction with water storage in the County Road 19 reservoir. The plan should give consideration to integrating the management of the new water for agriculture, community water supply, aquatic and riparian habitat restoration, and recreation. The role or opportunity to utilize reclaimed wastewater should be incorporated into the plan as well.

With the potential opportunities identified and incorporated into an integrated plan, the feasibility of implementing the Recharge/Recovery Project and respective water supply and resources enhancement projects should be determined.

11. Evaluate Potential for Establishing Anadromous Fish Population

Using the results of the aquatic and riparian habitat studies and the evaluation of the potential for aquatic habitat enhancement, evaluate the potential for establishing a sustainable population of anadromous fish in Cache Creek. This

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evaluation will necessarily address the in-stream conditions within or potentially within Cache Creek with respect to accommodating the freshwater phase of the species' life cycle phases. The migratory route for the respective species, as they immigrate and emigrate from Cache Creek and throughout the Yolo Bypass, will be evaluated. Evaluating the latter should be performed in coordination with entities actively participating in the Yolo Bypass Integrated Project.

12. Evaluate Potential for Aquatic Habitat Enhancement

Using the results of the aquatic habitat assessment, evaluate the potential for aquatic habitat enhancement under the existing flow regime and with supplemental water. This work should be performed with reference to the Cache Creek Resources Management Plan and Aggregate Mining Reclamation Plans, and coordinated with the planning and consideration of recreational opportunities related to trail nodes and parkway access. A fluvial morphological analysis of the creek needs to be performed to evaluate the creek's ability to maintain the habitat values through the flow regime encountered in Cache Creek. The beneficial aspects of a modified flow regime in terms of enhanced habitat values need to be evaluated.

13. Determine Alternatives and Feasibility of Utilizing Reclaimed Wastewater From Esparto and Madison

The town of Esparto recently acquired land and expanded its wastewater treatment facilities. The town of Madison, on the other hand, is operating under a cease and desist order from the Regional Water Quality Control Board and is in need of resolving the deficiencies in its treatment facilities.

The opportunities to utilize reclaimed water from the respective communities, combined or individually, for agriculture, aquatic and/or riparian habitat restoration, and recreation are to be identified and the level of treatment evaluated commensurate with the various applications determined.

14. Continued Removal of Exotic and Invasive Species

Tamarisk and Arundo are widespread throughout the principal creeks in the Cache Creek watershed. Efforts are underway to eradicate the species for purposes of flood conveyance capacity and removing competition with native or desirable habitats. This activity needs to be continued aggressively to be effective in removing and preventing its reestablishment.

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Recreation and Riparian Habitat Element

1. Evaluate Potential for Riparian Habitat Enhancement

Using the results of the aquatic habitat assessment, evaluate the potential for riparian habitat enhancement downstream of Capay Dam under the existing flow regime and with supplemental water. Similar to the evaluation of the potential for aquatic habitat enhancement, this work should be performed with reference to the Cache Creek Resources Management Plan and Aggregate Mining Reclamation Plans. This evaluation should also be coordinated with the planning and consideration of recreational opportunities related to trail nodes and parkway access. The fluvial morphological analysis mentioned under Task 12 would be equally beneficial for evaluating the potential for sustaining any proposed enhancements.

2. Design and Implement Cache Creek Nature Preserve Improvements

Certain improvements have been identified for the existing Cache Creek Nature Preserve that should be implemented as a stand-alone project. However, the Preserve should be incorporated into the overall plan for enhancing aquatic and riparian habitat and recreation downstream of Capay Dam. The design and construction plans and specifications are to be prepared to implement the improvements already identified including trail improvements and additional trails, a permanent educational/interpretive center, and additional interpretive demonstration displays. The interpretative demonstration displays are anticipated to include displays on gravel mining, agriculture, and irrigation. The displays would be used for educational programs for all ages.

3. Prepare Lower Cache Creek Corridor Regional Parkway Master Plan

As aggregate extraction sites near lower Cache Creek become exhausted, reuse plans are required by county and state law. The CCRMP has identified potential trail nodes and recreation sites along the Cache Creek corridor between the towns of Capay and Yolo. The Yolo County Parks and Open Space Master Plan recommended that sites continue to be acquired and developed in accordance with the CCRMP.

Many of the potential sites will have large basins left from the gravel extraction operations. The hydrological management of these basins could be important for recreation, habitat, and water resource management. The basins could be used for groundwater recharge/extraction and operated as part of a conjunctive use program. The Master Plan would be developed in coordination with the proposed Cache Creek Recharge/Recovery Project to determine the best integrated uses and management of the basins for water resources, recreation, and habitat objectives.

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4. Formulate and Implement Lower Cache Creek Parkway Access Project

The Yolo County Open Space Element (2000) identified the provision of recreation access being provided to Cache Creek at County Road 87 and County Road 89. A Master Plan has been prepared for the Capay Open Space Park near County Road 85 including access trails to the creek. These recreation access nodes should be incorporated into the overall plan for enhancing aquatic and riparian habitat and recreation downstream of Capay Dam. A plan is to be prepared for the County Road 87 and 89 sites, and construction plans and specifications are to be prepared to implement the improvements for all three sites including parking, interpretive overlooks and educational signage, and other related amenities.

5. Perform Camp Haswell Stone Cabin Restoration Study

The old stone cabin at the Camp Haswell site on Cache Creek is a unique amenity that could become a centerpiece for an improved Camp Haswell/Otis Ranch access and recreation site on Cache Creek. A study needs to be performed to determine the history of the cabin and any structural and access improvements needed for the cabin. Plans and specifications will be developed and funding sources for the improvements will be pursued.

6. Design and Implement Cache Creek Canyon Regional Campground Habitat Enhancement Project

The 700 acre Cache Creek Canyon Regional Park consists of Upper, Middle, and Lower Sites. It is a key recreational area used heavily by campers, river rafters, and hikers. It also provides important riparian habitat area. General improvements needed to the campground at the Middle Site have been identified. A light duty all-season bridge across Cache Creek was recommended in the 2005 Parks and Open Space Master Plan at the Middle Site for pedestrians, mountain bikers, and possibly equestrians. Improving the low water bridge at the Lower Site to increasing the duration of accessibility has also been proposed. The additional development of trails between the three sites and to the existing trails on the southwest side of the creek has been proposed. The development of new campsites at the Lower Site has also been proposed.

While some of the improvements to the Regional Park can be implemented as stand-alone projects, many of the improvements need to be considered in conjunction with the hydrology, riparian habitat, and recreational aspects of the overall CCIP.

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7. Design and Implement Camp Haswell/Otis Ranch Improvement Project

Camp Haswell is a former Boy Scout camp between Cache Creek and Highway 16 near Rumsey. It is used heavily by river rafters as a take-out point in summer months. A preliminary plan and layout has been developed for site improvements, including better parking, protection of habitat areas, and trash and toilet facilities.

Most of the Otis Ranch parcel is west of Camp Haswell, across Highway 16. Some of the parcel also adjoins Cache Creek upstream of Camp Haswell. Yolo County purchased the Otis Ranch in 2002 with the intent of integrating it with the camp Haswell site and possible eventual connection with the Cache Creek ridge trail system. The main improvements needed are access from Camp Haswell, Parking, and trail construction.

The preparation of a new joint plan for both Camp Haswell and Otis Ranch was recommended in the Yolo County Parks & Open Space Master Plan. The new joint plan for the two sites should be incorporated into the overall plan for enhancing riparian habitat and recreation in the Cache Creek Canyon area. The joint plan needs to address flood protection/mitigation, incorporating the effects of upstream flood mitigation projects.

8. Develop Plans for Blue Ridge Campground

The Yolo County Parks Master Plan identifies a new campsite at the Blue Ridge Trailhead. Accordingly, an overall site and facilities plan is to be prepared to advance the development of the campsite.

9. Design and Implement Corell-Rogers Wetlands Project

The reclamation of the Corell and Rogers gravel pits has been considered for a number of years, and various activities have been implemented for habitat and groundwater enhancement with limited success. Through the development of this IRWMP, there is an opportunity to plan and implement measures as part of an integrated program to enhance recreation and wetlands habitat with attention and consideration given to the hydraulic and morphological characteristics of Cache Creek. General site and concept plans are to be developed to provide the basis for design and preparation of construction plans and specifications to implement the enhancements.

10. Develop Plans for Grube-Payne Riparian Habitat Enhancement Program

The planning for restoration or enhancement of riparian habitat on the Grube-Payne property upstream of I-505 provides the opportunity for early implementation of elements of an overall Cache Creek riparian habitat

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enhancement program. Accordingly, an overall site and habitat enhancement plan will be developed in coordination with the overall planning for flood and water management activities along Cache Creek.

Results of Lead Partners / Team Prioritization / Integration Effort

The information presented herein is largely from a memorandum to the WRA dated February 21, 2007, from the YCFCWCD, the City, and County in response to a request from the WRA on November 2, 2006 to address prioritization and integration for this integrated project.

The team met on several occasions to discuss these issues including an interactive meeting with local stakeholders.

It is important to recognize that there is a separate process occurring to develop, review, refine, and evaluate potential flood management actions in the watershed. The team believes that these flood management actions are the highest priority of all of the potential Cache Creek watershed projects. As these actions become more fully developed, the WRA will continue to consider how they could integrate with other Cache Creek actions to form the basis for integrated solutions. Because of the separate process for the flood management actions, they are not addressed herein.

It is also important to recognize that this continued process of integration and prioritization builds on the previous work presented in the draft IRWMP document of October 2006. Integration of the Cache Creek project was explained in Section 5.4 “Integrated Actions.” **Figure 7-5** of this IRWMP graphically illustrates the relationship between the prerequisite tasks and each component action in the Cache Creek Integrated Project. A preliminary budget and five-year timeline for the 30 prerequisite tasks needing completion before starting the Cache Creek Integrated Project are presented in **Figure 7-6**. Previous work on prioritization is also summarized in various sections of this IRWMP (Oct 2006). Foundational Actions (Section 5.2) are a high priority simply because these actions must be completed regardless of any other specific action. Prioritization of the remaining actions, based upon statewide water resource priorities, is explained in Section 5.5. Prioritization based upon Objectives and Issues, as defined by the WRA, is explained in Section 5.5.2 and depicted graphically in Table 5-7.

This IRWMP (and the Cache Creek projects) are subject to continual collaboration and evaluation. This IRWMP should be an evolving document that is managed adaptively as new information becomes available, as projects become “ready,” and as priorities and needs shift.

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Approach to Integration

The team examined the idea of integration of actions and determined that there were at least two levels on which integration occurs: *general* and *specific*.

1. At the **general level**, all of the Cache Creek projects share common traits and features and demonstrate some level of integration. They are all part of the same watershed and contribute to the long-term economic health and ecological benefits of Cache Creek. They all involve collaboration between multiple agencies and jurisdictions in terms of project support and implementation. All of the projects have potential to contribute to the education of the community about the watershed and its values and functions, and each of the projects is designed to connect to and involve various stakeholders. The stakeholders vary substantially for each project, but include Yolo County, YCFCWCD, the Resource Conservation District, local municipalities, land owners, recreation advocates, environmental advocates, and the agricultural community. Each of the projects is also designed to provide multiple benefits to the community. For some, the benefits include flood control, habitat enhancement, groundwater recharge and recreation. For other projects, the benefits might include water supply reliability, water quality benefit, and habitat protection. But, in all cases, multiple regional benefits have been built into the projects.
2. At a more **specific level**, the various project “clusters” also demonstrate additional levels of integration. Three types of integration are identified: cornerstone actions; logical clusters of projects in which economic efficiencies are gained by combining projects; and logical geographic clusters in which projects within close proximity in the watershed provide benefits and synergies to each other.
 - a. Those actions that are “cornerstones” are projects which facilitate and enable other activities to occur. For example, structural improvements to the Capay Diversion Dam will allow for other projects to be viable including conjunctive use of groundwater and surface water and restoration of flows for fisheries enhancements.
 - b. Other actions demonstrate a high level of integration because they can be more efficiently and effectively completed as a package or in conjunction with each other. The recreational and access improvement projects along Cache Creek are an example of actions that could be planned, designed, and implemented together to save costs and make more efficient administration.
 - c. Other actions demonstrate additional levels of integration because of their geographic proximity within the watershed and their similarity in objectives and benefits. Examples include Cache Creek Regional Campground Habitat Enhancement Project, Camp Haswell Renovation Project, Otis Ranch, and

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Camp Haswell public access improvements. These projects all provide habitat enhancement and water-dependent recreation.

Approach to Setting Priorities

The team has been clear and consistent that all of the Cache Creek actions listed in this IRWMP are important to the watershed and should ultimately be reviewed and considered for funding and development. Each of the actions provides substantial community benefits; either economic, ecological, social, recreational, or a combination. Each of the actions is interconnected in some way, and all contribute to the health and function of the watershed. It is also clear that the action “list” and this IRWMP are dynamic, and need to be continually re-evaluated. Priorities may shift over time. Some actions may be ready sooner than others; some actions may be able to receive opportunity funding and move ahead of others; and some may become more highly favored as a result of a change in the environment (such as a major flood year) or a change in decision-maker priorities. This IRWMP will undergo a continual process of adaptive management to reassess priorities and assist in decision-making.

Despite the flexible nature of the list, the team believes it is necessary to establish a basic priority structure so that stakeholders and decision-makers can make judgments about where to put effort and local funds. The team developed the following approach and criteria to set those priorities.

First Priority: The highest priority actions were those that demonstrated a high level of *public health and safety benefits*. These actions might also offer other community and environmental benefits, and allow for a series of integrated actions to occur. The cluster of Cache Creek flood management projects is considered the highest priority. Examples of these projects are setback levees and other flood risk reduction efforts that are being considered as part of the separate Cache Creek Flood Management public process, currently being developed by the WRA.

Second Priority: Those projects that are *cornerstone* activities supporting other actions and projects in the watershed were determined to be the next level of priority. These are projects or actions without which other activities can not take place or would be done with inadequate data and planning. The following projects fit in this category:

- Capay Dam Reliability/Restoration Project (WS13)
- Comprehensive Conjunctive Water Use Program (WS16)
- Cache Creek – Yolo Bypass Anadromous Fish Passage Reintroduction/Introduction Study (AR8, AR46)

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Third Priority: The next tier includes projects that demonstrate a high level of *integration* because of geographic proximity or economic efficiencies to be planned, designed and implemented together. These project “clusters” are:

- Economic Efficiency: Cache Creek Trail Nodes Program (R3), Camp Haswell Renovation Project (R6), and Camp Haswell/Otis Ranch Improvement Project (R8)
- Economic Efficiency: Cache Creek Regional Park Improvement Project (R15), Lower Cache Creek Parkway Access Project (R29), Cache Creek Regional Campground Habitat Enhancement Project (AR 18), Putah Creek and Cache Creek Exotic and Invasive Species Removal Project (AR7), and Cache Creek Riparian Habitat Enhancement Program (AR 24)
- Geographic: Cache Creek Regional Campground Habitat Enhancement Project (AR 18), Camp Haswell Renovation Project (R6), Camp Haswell/Otis Ranch Improvement Project (R8), and Cache Creek Regional Park Improvement Project (R15).

Fourth Priority: The remaining projects/actions are not unimportant, and should not be viewed as low priority. They are *individual actions or projects* in the watershed. Many may still be proposed and funded (even before others) because they are ready to implement or because of local needs, funding availability or other criteria. These projects include the following;

- Corell-Rogers Wetlands Project (AR 21), Grube-Payne Habitat Restoration Project (AR 22), Capay Dam to Moore Siphon Riparian Flow Program (AR35), and Cache Creek infrastructure protection and habitat enhancement (AR), Off-Highway Vehicle and Access Control Program (R4); Nichols Park Improvement Project (R20), Recreational Opportunities on Public Lands (R22), Cache Creek Mercury Remediation Project (WQ 1), Esparto and Madison Wastewater Recycling Projects (WQ 2.3 and 2.4), Moore Siphon Reliability/Restoration Project (WS 14), Colusa Basin Drain Water Supply Project (WS 22), County Road 19 Water Storage Project (WS 3.1), Esparto and Madison Water Supply Projects (WS 4, WS 5).

A final note on this list. Projects on the list may “rise or fall” depending upon specific funding opportunities, timing, or need. For example, certain funding sources or local match requirements may favor one action over another, regardless of where it falls in the priority list.

Project “readiness” may suggest that one or several actions should be proposed and funded earlier. Some of the projects (such as the flood management actions) are at an early stage of

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planning, while others such as the grouping of recreational projects (e.g., Cache Creek Regional Campground, Camp Haswell, Otis Ranch, etc.) are well along in their planning and design and ready for construction funds. This list is meant to be dynamic and adaptive. The WRA will provide for regular periodic review of this IRWMP in order to maintain the appropriate understanding of priority and readiness of these projects.

Summary

As is evident from the above discussion, considerable work is required to define the CCIP that effectively integrates flood and water management with aquatic and riparian habitats and recreation. This work will build on the work completed for the CCRMP which operates in the lower reach of Cache Creek, and bring a broader perspective of integrated resources management to the Cache Creek subregion than would otherwise occur. As shown in **Figure 7-6**, early implementation can and should proceed on certain actions based upon planning performed in advance of this IRWMP. At the same time, however, the respective actions should be implemented with full consideration given to being incorporated into the CCIP for the Cache Creek watershed. It is anticipated that the tasks identified above will require approximately 3 – 5 years to complete. Upon completion of some tasks, the work plan for the integrated project should be refined and redirected, where appropriate, relative to the feasibility of the respective component actions determined. This will represent a significant milestone in advancing the CCIP. Accordingly, a detailed work plan should be prepared and updated regularly to provide the direction for activities to be implemented.

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IA4. *Dunnigan Integrated Project*

The Dunnigan Integrated Project (DIP) will be driven by the decisions of Yolo County as it updates its general plan. Indications at this time are that substantial growth may be approved for the community to accommodate growth in Yolo County. At the same time, deficiencies in the existing infrastructure will need to be corrected with respect to water and wastewater that are now provided entirely by individual wells and septic systems. To the extent the County elects to have significant growth in the community of Dunnigan, it can be most effectively served with infrastructure implemented as part of an integrated plan in conjunction with a community land use plan. In response to the prospects for growth in the community, the Dunnigan Water District adopted a policy statement indicating its willingness to be the lead agency in dealing with water, wastewater, and storm runoff.

There are seven component actions included in this integrated project requiring some level of study and analysis to determine the most effective means of managing the resources and providing the water and resource related infrastructure to support the planned growth for the community.

Lead Agency, Partners, and Stakeholders

Local agencies or entities involved in planning and implementing the DIP are noted below. In the event Yolo County determines that significant growth will be planned for the community of Dunnigan, a collaborative process will be undertaken involving responsible local agencies, as well as federal and state agencies having an interest and/or responsibility for resources in the area.

Yolo County would be the lead agency for the overall community planning and development and the Dunnigan Water District would be the lead agency in addressing the water-related infrastructure related to water supply, wastewater management, and storm drainage. Other collaborating stakeholders in the project include the following:

- Yolo County Resource Conservation District
- Tehama Colusa Canal Authority
- Colusa Basin Drainage District

Prerequisite Tasks

To determine the feasibility of creating a “new town” in the Dunnigan area, it would be essential to develop an overall community plan that fully addresses the resource and infrastructure needs for the area, including measures to mitigate adverse environmental impacts. The latter relates largely to the Tiger Salamander for which habitat has been identified within the area of proposed development. With respect to water related infrastructure the initial

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tasks to be performed are identified. Presented on **Figure 7-7** is a matrix showing the relationship of the various tasks and the component actions. Presented on **Figure 7-8** is a general schedule and budget for performing the tasks. The initial investigations that would be required to support the orderly development of the integrated action are described below:

1. Perform an environmental assessment of the area planned for development to determine the extent and type of environmental mitigation that may be required.
2. Prepare a Water Master Plan that maximizes the use of recycled wastewater and demonstrates the availability of a reliable long-term water supply to sustain the planned development.
3. Prepare a Storm Drainage Master Plan that addresses impacts to the area planned for development and mitigates adverse impacts that may result from development.
4. Perform an assessment of the principal waterways impacting or being impacted by the planned development and develop a plan for controlling erosion problems that may exist. A plan for habitat enhancement would be developed as well.
5. Prepare water supply, wastewater, and storm drainage elements of a specific plan and assess the feasibility of implementing the planned growth in Dunnigan based upon the information and investigations identified above.

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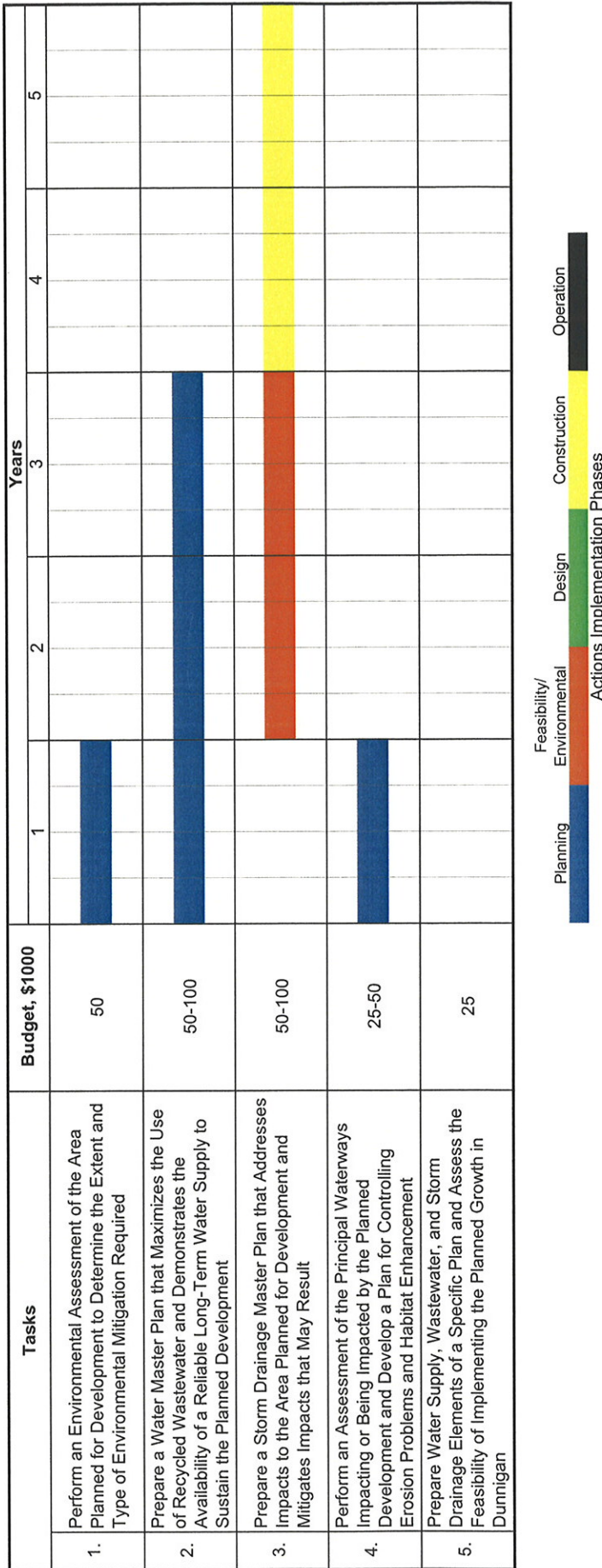


**FIGURE 7-7
YOLO COUNTY IRWMP
DUNNIGAN INTEGRATED PROJECT
INTERRELATIONSHIP BETWEEN PREREQUISITE TASKS AND COMPONENT ACTIONS**

TASKS	COMPONENT ACTIONS						
	Dunnigan Hills Water Supply Project	Oat Creek Water Storage Project or Bird Creek Water Storage Project	Colusa Basin Drain Water Supply Project	Dunnigan Hills Wastewater Recycling Project	Buckeye Creek Erosion/Flood Management Project	Dunnigan Hills Storm Drainage Flood Management Project	Small Sloughs Revegetation Project
1. Perform an Environmental Assessment of the Area Planned for Development to Determine the Extent and Type of Environmental Mitigation Required	X	X	X	X	X	X	X
2. Prepare a Water Master Plan that Maximizes the Use of Recycled Wastewater and Demonstrates the Availability of a Reliable Long-Term Water Supply to Sustain the Planned Development	X						
3. Prepare a Storm Drainage Master Plan that Addresses Impacts to the Area Planned for Development and Mitigates Impacts that May Result	X	X	X	X	X	X	
4. Perform an Assessment of the Principal Waterways Impacting or Being Impacted by the Planned Development and Develop a Plan for Controlling Erosion Problems and Habitat Enhancement	X	X	X	X	X	X	
5. Prepare Water Supply, Wastewater, and Storm Drainage Elements of a Specific Plan and Assess the Feasibility of Implementing the Planned Growth in Dunnigan	X	X	X	X	X	X	X



**FIGURE 7-8
YOLO COUNTY IRWMP
DUNNIGAN INTEGRATED PROJECT
PREREQUISITE TASKS - SCHEDULE AND BUDGET**



IA5. Sacramento River West Bank Integrated Project

Overview

The Sacramento River West Bank Integrated Project (SRWBIP) is designed to improve the management of public safety infrastructure and public benefits of water resources on the west side of the Sacramento River in Yolo County. The SRWBIP integrates actions that meet IRWMP objectives relating to flood management, aquatic and riparian ecosystem enhancement, recreation, water supply and water quality issues. The actions incorporated in the SRWBIP apply to the geographic sub-area that includes the portion of the west bank and levee of the Sacramento River in Yolo County, the City of West Sacramento, Knight’s Landing and Clarksburg, and the basin surrounded by levees between the Deep Water Ship Channel and the Sacramento River.

The Sacramento River, the largest river in California, forms the eastern border of Yolo County. The meandering, single-channel river is 327 miles long and drains a watershed of 24,000 square miles (Mount 1995). Levees and channels have significantly altered the original pattern of the Sacramento River, but major portions in the lower reaches still retain their meandering characteristics. Much of the Sacramento River’s water is pumped through the Sacramento-San Joaquin Delta to supply irrigation water to San Joaquin Valley farmers and drinking water to residents of Southern California. Yolo County contains a portion of the Delta south of Highway 80.

Flood Management

Yolo County’s Sacramento River levees protect the City of West Sacramento, the towns of Knights Landing and Clarksburg, and important agricultural lands. In addition, the Fremont Weir, the Sacramento Weir, and the Yolo Bypass in Yolo County help provide flood protection to the City of Sacramento and other communities that rely on the protection of the Sacramento River Flood Control Project. As a result of a recently improved technical understanding of levee stability and concern resulting from the impact of two major floods in the past 20 years, the level of protection that these levees provide is increasingly in doubt. Decision makers realize that careful management of the floodway is essential to the protection of life and property, including continuous improvement and maintenance of levees, control of bank erosion where it threatens levees, management of vegetation near levees, maintenance of levee accessibility, and improved control of the general uses of the floodway (Jones and Stokes 2006).

Aquatic and Riparian Ecosystem Enhancement

The reach of the Sacramento River that passes through Yolo County has been studied far less from an ecosystem perspective than other portions of the river, in part because the quality of fish and wildlife habitat is not as high as in other areas. Decades of efforts to provide flood protection to the Sacramento region has resulted in a highly channelized, heavily rip-rapped

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reach in which vegetation was historically removed to facilitate the movement of flood waters. Fish species found in the Sacramento River in the vicinity of Yolo County and listed for protection under the California and/or Federal Endangered Species Acts include winter-run and spring-run Chinook salmon, steelhead, and the Delta smelt. Biologists also are concerned about sturgeon populations. Spawning of adult Chinook salmon and steelhead historically was not common in this reach because of the absence of suitable habitat. The potential to improve riparian habitat consistent with flood management goals should be explored.

Recreation

The Sacramento River provides the public with a variety of outdoor recreational opportunities, including boating, water skiing, fishing, hunting, nature study, picnicking, and hiking. Yolo County provides public access to the Sacramento River at three major river access facilities, including Knights Landing, Elkhorn Regional Park, and Clarksburg. West Sacramento also provides public access and has plans for additional public access in the future as envisioned in the Sacramento Riverfront Master Plan the 2003 Parks Master Plan. The Delta Protection Commission's Land Use and Resource Management Plan for the Primary Zone of the Delta recommends enhancement of public access opportunities in the Delta, including Yolo County.

Water Supply and Water Quality

The Sacramento River is a source of water for portions of Yolo County. Two other integrated projects: the Davis-Woodland Water Supply Project and the Reclamation District 2035 Sacramento River Diversion and Conveyance Project address important aspects of this water supply function. These two water supply projects are discussed in other sections of this IRWMP document and implementation strategy, and are not part of the SRWBIP. However, local water supply and the quality of surface water are addressed in this integrated project.

Lead Agency, Partners, and Stakeholders

Planning and implementing tasks associated with the Sacramento River will involve several federal, state, and local agencies. From the standpoint of this IRWMP, the County will serve as the Lead Partner for actions within the unincorporated territory of Yolo County. The City of West Sacramento will be the Lead Partner for actions within the incorporated boundaries and related to the municipal services of the City, and for actions associated with the Sacramento Bypass levees, Yolo Bypass east levees, South Cross levee, and Deep Water Ship Canal and associated levees. Collaborating partners in various elements of the SRWBIP and stakeholders include the following:

- ***Partners***

City of West Sacramento

Yolo County

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Reclamation District Nos. 108, 87, 730, 1600, 827, 785, 537, 900, 999, 765, 307, and 150

- Stakeholders: Town of Clarksburg
Town of Knights Landing
Delta Protection Commission
Sacramento Area Flood Control Agency
Sacramento River Corridor Planning Forum
State Reclamation Board
California Department of Fish and Game
California Department of Water Resources
U.S. Army Corps of Engineers
Federal Emergency Management Agency
N.O.A.A Fisheries
U.S. Fish and Wildlife Service

Integration and Prioritization Method

Actions within the Sacramento River West Bank Integrated Project were integrated and prioritized according to a stakeholder-mediated process that was led by Yolo County and the City of West Sacramento. This separate process for the Sacramento River West Bank Integrated Project was necessary because of the unique issues and geography of the project area, where the main water management concerns relate to potential flooding by the Sacramento River. This process also provided communities along the Sacramento River an additional opportunity for participation, where there had been limited involvement in the overall IRWMP process.

The integration and prioritization process consisted of the following five steps:

1. **Data Collection:** Collect sufficient information from public agencies about potential actions to allow integration and prioritization.
2. **Integration:** Combine individual actions into integrated projects when a substantial improvement in meeting IRWMP objectives would be obtained.

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3. **Prioritization:** Develop an initial prioritization of actions based on their potential to meet IRWMP objectives, Proposition 50 Program preferences, and statewide priorities.
4. **Stakeholder and Public Participation:** Obtain stakeholder and public input on integration and prioritization and adjust integration and prioritization of actions as needed based on this input.
5. **Implementation:** Develop a strategy for implementing the Sacramento River West Bank Integrated Project.

Step 1. Data Collection

Information was collected on actions that had been suggested by agency representatives, the WRA and the public. Although brief descriptions and information about the relevant water management categories and geographic area were collected previously, this information was generally not sufficient to allow meaningful integration and prioritization of actions. The additional information was collected using an Action Information Form. The following additional information was solicited from agencies that originated the actions or from the most appropriate agencies when actions were suggested by the public:

- Project goals and objectives
- Related IRWMP objectives
- Project benefits
- Impacts of not implementing the project
- Estimated project cost
- Available matching funds
- Project timing
- Project readiness

Although most actions that were identified in the October 2006 draft IRWMP were included in the integration and prioritization process, insufficient information or sponsorship was obtained for a number of actions. The latter actions were tabulated for future consideration, and were not considered in the current integration and prioritization process.

Step 2. Integration

Actions were evaluated for their potential to be integrated with other actions. Actions were combined into clusters of multi-objective integrated projects that:

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1. **Complement other actions** that would more likely meet one or more IRWMP objectives in combination than individually.
2. **Relate geographically** with other actions that would be implemented in the same area, in close proximity to each other, or in some other spatially related way, e.g., along the same water way.
3. **Increase public and agency support** in combination resulting in greater public and/or agency support than individually (e.g., individual actions may each be supported by different segments of the public or by different agencies).
4. **Improve efficiency** by using fewer resources when implemented in combination than individually.
5. **Reduce conflict** through combinations where independent implementation would lead to greater conflict, e.g., individual actions may each benefit opposing interests.
6. **Reduce adverse impacts** through combinations that would have fewer or smaller adverse impacts than individually (e.g., one action may compensate for the impacts of another action, or the combination of actions result in a net benefit).
7. **Improve the likelihood of funding** through combinations that would better match grant funding criteria than individual actions (e.g., the integrated action may fit the selection criteria for Propositions 1E, 50, 84 or other grant programs better than the individual component actions).

For example, a levee improvement project, an aquatic habitat enhancement project and a river recreation project could be integrated if they were planned in the same area. Submerged (“instream”) woody material, which provides shelter for juvenile salmon, and river recreation improvements, including a boat ramp or river access trail, could be included in the levee design. This integration would result in a multi-objective levee improvement project with public safety benefits to residents and businesses living behind the levee, benefits to salmon populations and river ecosystem functions, and benefits for river recreation and public access.

Conversely, unconstrained integration of actions could bundle too many individual actions, combine inherently disparate purposes, or link impractical or non-productive implementation elements (e.g., timeframe, mobilization, site impacts, administration, funding, etc.). Individual actions were not integrated where the resulting project would be unwieldy, trigger a complex and time-consuming web of regulatory compliance, or if too many actions would define a single project or program. This consideration was used in some cases to limit the number of actions that were combined.

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Not all actions were integrated into clusters. Some actions already had multiple objectives and integration was not necessary. Two actions did not meet the integration rationale for combination with other actions and remained separate

Step 3. Prioritization

After actions were integrated, when appropriate, the resulting integrated projects and remaining individual actions were prioritized through a two step process. The first step scored the performance of integrated and non-integrated projects on the bases of criteria derived from this IRWMP, known funding programs, and statewide priorities:

- **Responsiveness to the Yolo County IRWMP Objectives** – The WRA felt that it was important that the proposed actions would meet one or more Yolo County IRWMP objectives. In addition to the overall IRWMP objectives listed in “Section 2.1 Goals and Objectives”, specific objectives for the Sacramento River West Bank Integrated Project were formulated and used as prioritization criteria (**Table 7-2**).
- **Preferences of the Known Funding Programs** – The Proposition 50 program funded the development of this IRWMP, and the program’s project preferences were therefore considered appropriate as prioritization criteria. Implementation of projects in this IRWMP could also be eligible for funding under Propositions 84 and 1E; however, project preferences under these proposition grant programs will not be available until September 2007.
- **Statewide Priorities** – The statewide priorities formulated by the California Department of Water Resources (DWR) and State Water Resources Control Board (SWRCB) listed in the IRWMP Program guidelines were considered appropriate prioritization criteria because of the regional character of the IRWMP and the funding provided to the program through Proposition 50. For more information on the statewide priorities see “Section 2.2 Statewide Priorities”.

Table 7-2 to **Table 7-4** show how the objectives, preferences, and priorities, respectively, were translated into consolidated performance criteria.

The purposes of consolidated performance criteria were to acknowledge the substantial consistency between the different sets of objectives and focus the evaluation on the actual breadth of functions and outcomes. These consolidated criteria are similar to those used in other IRWMPs, notably the North Coast IRWMP and the Bay Area IRWMP.

Each component element of an action was tested for performance according to each of the 28 criteria. An action component was credited for contributing to or meeting performance criteria. Each action received overall performance credit for a criterion if a component element was credited under that criterion.

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Table 7-2 – Relationship between IRWMP Objectives and Prioritization Criteria		
No.	Objectives	Criteria
1	To ensure open and frequent communication with the public.	The action contributes to open and frequent communication with the public.
2	To integrate water resource planning and land use planning.	The action contributes to integration of water resource planning and land use planning.
3	To help disadvantaged communities with basic water infrastructure improvements.	The action contributes to basic infrastructure improvements that benefit disadvantaged communities.
4	To integrate actions to ensure multiple benefits, including recreation and aquatic and riparian ecosystem enhancement.	The action contributes to integration of actions to ensure multiple benefits, including recreation and aquatic and riparian ecosystem enhancement.
5	To provide a reliable and sustainable surface water supply from a variety of sources.	The action contributes to a reliable and sustainable surface water supply from a variety of sources.
6	To manage the county’s ground water resources to provide water purveyors and individual users with a sustainable, reliable, high quality supply of ground water to serve urban, agricultural, environmental and other uses during normal, above normal and prolonged drought periods.	The action contributes to management of the county’s ground water resources.
7	To conjunctively use ground water and surface water to maximize the efficiency, sustainability and value of the county’s surface and ground water.	The action contributes to the conjunctive management of surface and groundwater supplies.
8	To develop state-of-the-art urban and agricultural water use efficiency programs that meet statewide guidelines and that substantially and measurably reduce water use throughout the county.	The action contributes to the development of state-of-the-art urban and agricultural water use efficiency programs.
9	To meet state, federal, or local standards for water quality protection, including Total Maximum Daily Loads, in all surface and ground water resources, working closely with water purveyors, landowners, businesses, citizens, state, federal and local agencies, and non-profit organizations.	The action contributes to meet state, federal, or local standards for water quality protection, including Total Maximum Daily Loads.
10	To develop continuous water quality monitoring, management and protection programs, including institutional capacity, to ensure that water quality continues to meet standards for surface and ground water sources.	The action contributes to development of continuous water quality monitoring, management and protection programs.

Action Program

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Table 7-2 – Relationship between IRWMP Objectives and Prioritization Criteria		
No.	Objectives	Criteria
11	To reduce flood risk in all areas of the county within 20 years, taking into consideration resource constraints and environmental impacts.	The action contributes to reduce flood risk in all areas of the county within 20 years.
12	To become a model area for flood management approaches that reduce flood risk, protect and enhance the riparian environment, and improve recreational opportunities.	The action contributes to the area becoming a model area for flood management approaches that reduce flood risk, protect and enhance the riparian environment, and improve recreational opportunities.
13	To develop innovative storm water management requirements, guidelines and best practices that enable the county to meet state and federal permit requirements, reduce the risk of flooding, improve the quality of storm water runoff, and reduce impacts to surface water resources.	The action contributes to development of innovative storm water management requirements, guidelines and best practices.
14	To enhance the aquatic and riparian environment in priority areas, consistent with the emerging Yolo County NCCP/HCP, through ongoing, comprehensive programs with dedicated sources of funding.	The action contributes to enhance the aquatic and riparian environment in priority areas, consistent with the emerging Yolo County NCCP/HCP.
15	To become a model area for integrating agricultural production and habitat conservation through the use of sustainable agricultural water use practices and habitat enhancement incentives that are compatible with agricultural production.	The action contributes to the area becoming a model for integrating agricultural production and habitat conservation.
16	To utilize a variety of tools to achieve a sustainable and effective monitoring, management, and reporting process for priority aquatic and riparian habitat areas.	The action contributes to utilization of a variety of tools to achieve a sustainable and effective monitoring, management and reporting process for priority aquatic and riparian habitat areas.
17	To improve and expand water-related recreational programs, facilities, and opportunities.	The action contributes to improvement and expansion of water-related recreational programs, facilities, and opportunities.
18	To become a model area for integrating water-related recreational actions with other actions that meet water management objectives, such as flood management, water supply, and habitat enhancement.	The action contributes to the area becoming a model for integrating water-related recreational actions with other actions that meet water management objectives.
19	To eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas, including areas of special biological significance.	The action contributes to eliminating or significantly reducing pollution in impaired waters and sensitive habitat areas.

Action Program

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Table 7-2 – Relationship between IRWMP Objectives and Prioritization Criteria

No.	Objectives	Criteria
20	To reduce conflict between water users or resolve water rights disputes, including interregional water rights issues.	The action contributes to reducing conflict between water users or resolve water rights disputes.
21	To implement RWQCB Watershed Management Initiative Chapters, plans, and policies.	The action contributes to implementing Watershed Management Initiative Chapters, plans, and policies
22	To implement the SWRCB’s Non-point Source (NPS) Pollution Plan.	The action contributes to implementation of SWRCB’s Non-point Source (NPS) Pollution Plan.
23	To assist in meeting Delta Water Quality Objectives.	The action contributes to assisting in meeting Delta Water Quality Objectives.
24	To implement the recommendations of the floodplain management task force, desalination task force, recycling task force, or state species recovery plan.	The action contributes to implementing the recommendations of the floodplain management task force, desalination task force, recycling task force, or state species recovery plan.
25	To address environmental justice concerns.	The action contributes to addressing environmental justice concerns
26	To assist in achieving one or more goals of the CALFED Bay-Delta Program.	The action contributes to achieving one or more goals of the CALFED Bay-Delta Program.
27	Implement Land Use and Resource Management Plan for the Primary Zone of the Delta.	The action is consistent with Delta standards and programs.

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Action Program

Table 7-3 – Relationship between Proposition 50 Program Preferences and Prioritization Criteria		
No.	Program Preferences	Criteria
1	Include integrated projects with multiple benefits.	The action has benefits within benefits multiple water management categories.
2	Support and improve local and regional water supply reliability.	The action contributes to water supply reliability.
3	Contribute expeditiously and measurably to the long-term attainment and maintenance of water quality standards.	The action contributes expeditiously and measurably to the long-term attainment and maintenance of water quality standards.
4	Eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas, including areas of special biological significance.	The action contributes to the elimination or significant reduction of pollution in impaired waters and sensitive habitat areas, including areas of special biological significance.
5	Include safe drinking water and water quality projects that serve disadvantaged communities.	The action contributes to safe drinking water and water quality in disadvantaged communities.
6	Include groundwater management and recharge projects that are located 1) in San Bernardino or Riverside counties; 2) outside the service area of the Metropolitan Water District of Southern California; and 3) within one mile of established residential and commercial development.	<i>Not used, does not apply.</i>

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Table 7-4 – Relationship between Statewide Priorities and Prioritization Criteria		
No.	Statewide Priorities	Criteria
1	Reduce conflict between water users or resolve water rights disputes, including interregional water rights issues.	The action contributes to reducing conflict between water users or resolving water rights disputes, including interregional water rights issues.
2	Implementation of Total Maximum Daily Loads that are established or under development.	The action contributes to meeting TMDLs.
3	Implementation of Regional Water Quality Control Board (RWQCB) Watershed Management Initiative (WMI) chapters, plans, and policies.	The action contributes to implementation of WMI chapters, plans, and policies.
4	Implementation of the SWRCB’s Non-point Source (NPS) Pollution Plan.	The action contributes to reducing non-point source pollution.
5	Assist in meeting Delta Water Quality Objectives.	The action contributes to meeting Delta Water Quality Objectives.
6	Implementation of recommendations of the floodplain management task force, desalination task force, recycling task force, or state species recovery plan.	The action contributes to implementation of the floodplain management task force, desalination task force, recycling task force, or state species recovery plans.
7	Address environmental justice concerns.	The action contributes to addressing environmental justice concerns.
8	Assist in achieving one or more goals of the CALFED Bay-Delta Program.	The action contributes to achieving one or more goals of the CALFED Bay-Delta Program.

Similarly, integrated projects received performance credit for each action that received criterion credit. Given the different number of actions in each of the integrated projects, the score for performance credit was normalized for each criterion as follows:

- “no action credit”: score = 0,
- “1 or few action credit”: Score = 1
- “some actions credit”: Score = 2
- “all actions credit”: Score = 3

The normalized scores for the performance criteria were added to determine IRWMP criteria total scores.

The second scoring step was based upon a set of criteria that consider situational factors unique to the project or localized conditions:

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- Project Urgency (including immediate needs to avoid loss of life and preserve human safety, imminent gain or loss of funding, compelling opportunistic conditions, etc.)
- Total Project Integration (consideration for integrating multiple actions)
- Lead Agency Capacity for Implementation
- Project Readiness
- Status of Funding (including fund acquisition and allocation, and relation of available funding to total project cost)

Of the several considerations that represent situational or local factors, the uniformly recognized and overwhelming importance of life and safety warrants single-function integration and stand-alone priority. Several actions crucial to life and safety were integrated into an immediate-priority project. These actions also contribute to a set of multi-function projects, integrated by proximate location and timing, or opportunistic implementation. The multi-function integrated projects were then given a score for relative performance on the five considerations. The score for other considerations was summed for each of the multi-function projects and recorded along with the evaluation rationale. The total project score for the other considerations was doubled to establish a scale comparable to the IRWMP criteria score. The sum of IRWMP criteria score and weighted score for other considerations determined the final IRWMP priority for each integrated project. The largest score was assigned high IRWMP priority. The lowest score was assigned a lower IRWMP priority. Scores between the high and low scores were assigned medium IRWMP priority.

Step 4. Stakeholder and Public Participation

The overall SRWBIP and the integration and prioritization methods were presented to a group of invited stakeholders on February 5, 2007, in West Sacramento. The meeting summary from this meeting is provided in Appendix E, including a list of attendees and their affiliations. Input received during and after the meeting from stakeholders indicated that actions taking place in the Delta should be added to or incorporated into existing Sacramento River West Bank Actions, and that consistency with several recent Delta programs should be incorporated into the prioritization criteria. As a result of this input, consistency with Delta Protection Commission standards and programs was included in the prioritization criteria.

The SRWBIP and integration and prioritization process were also presented at a public workshop held on February 8, 2007, in West Sacramento. The meeting summary for this meeting is also in Appendix E, including a list of attendees. Feedback received during and after the public workshop indicated that actions relating to flood hazards and protection of life and private property from flood hazards should be the highest priority among the Sacramento River West Bank Actions. Many participants also advocated for expanded or improved river access,

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trails, and recreation facilities. This feedback was incorporated into the Sacramento River West Bank Action prioritization process.

Step 5. Implementation

During implementation project priorities will be revisited to consider issues which were not certain or changes that were not anticipated at the time this IRWMP was completed. This step is essential to ensure that implementation is properly aligned with changes in:

- Emergencies
- Additional Actions For Project Integration
- Physical Conditions
- Funding
- Regulatory Requirements, Limitations or Opportunities
- Socio-economic Values

Integration and Prioritization Results

Action Information Forms were collected for 31 individual actions (**Table 7-5**). These included both revisions of actions that were included in the draft IRWMP and new actions. The individual actions included 13 flood management actions, 11 recreation actions, three aquatic and riparian ecosystem enhancement actions, two water quality actions and two water supply actions. Eight actions that were identified in the draft IRWMP were not carried forward as individual actions, because insufficient information was available for these actions, because they had been incorporated in some form in other individual actions, or because implementation of the actions was already funded or substantially under way (**Table 7-6**).

The two performance scoring steps in the process for setting project priority are presented in **Table 7-7** (IRWMP Criteria) and **Table 7-8** (Other Local Considerations). The results of integration, performance evaluation, and priority determination are summarized in **Table 7-9**. One integrated action “Urgent Levee and Other Flood Management Improvements” (UP) was rated as an “immediate” priority, because the protection of life and safety is the most important consideration of Yolo County and City of West Sacramento. The overarching importance of life and safety warrants single-function integration of urgent flood control actions and immediate priority for implementation. This action integrates eight urgent flood management actions.

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Action Program

Table 7-5 – Individual Actions Considered in the Sacramento River West Bank Integrated Project

Project ID	Project Name	Organization	Summary	Location	Geographic Area	Project Readiness
AR26	Sacramento River Habitat Enhancement Study	Yolo County	Evaluate and study the aquatic and riparian ecosystem enhancement opportunities along the Sacramento River in Yolo County, including opportunities for non-native, invasive vegetation removal. Study opportunities outside of improvements to levees – extend improvements and enhancements to the adjoining river corridor.	The river corridor along the 215-mile stretch of the Sacramento River in Yolo County.	Sacramento River	6-12 Months
AR50	Sacramento Riverbank Enhancement Actions	City of West Sacramento and Yolo County	<p>This action includes a variety of enhancements of Sacramento River riparian and aquatic habitat consistent with levee improvements. As a result of increased attention by the Governor and the Legislature on improving California's levee system, projects will be undertaken on Yolo County's 215 miles of Sacramento River Flood Control Project levees to strengthen them. If funding is available, local levee maintenance districts and other flood control agencies should undertake wildlife, plant, and fish habitat enhancement projects in addition to their required mitigation activities. Riparian vegetation could be added to levee slopes according to the bank vegetation guidelines of the Sacramento River Corridor Planning Forum's (2005) draft Floodway Management Plan. The guidelines are designed to increase habitat value, while maintaining maximum flood protection and providing additional structure for fish habitat, as appropriate.</p> <p>Out-migrating juvenile salmon and steelhead in the Sacramento River benefit greatly from instream woody material and other inundated structures because they provide cover. Cover protects juveniles from predators, and provides substrate for food organisms. Little structure occurs in the channel, because the sources of instream woody material are very limited in the lower, levee-confined reaches of the Sacramento River, or have been removed for levee and channel maintenance or by rock bank protection projects.</p>			
AR51	Bees Lakes Preserve	City of West Sacramento	Conserve and develop limited, low-impact pedestrian-only access to a 23-acre open space area containing sensitive aquatic, riparian, emergent and upland habitats which are associated with the Sacramento River.	Bees Lakes is on the west side of the Sacramento River Levee, roughly half way between the Linden Road and Davis Road intersections of South River Road.	Sacramento River	6-12 Months
AR52	Merritt Island Enhancement Project	RD 150 and Yolo County	Study the structure and habitat of the Elk Sough Levee on Merritt Island (in RD 150). The purpose of the study will be to find a means to improve its structural integrity while maintaining the well-established natural habitat.	Elk Slough to RD 150	Sacramento River	
FM5	Knights Landing Levee Improvement Project	Yolo County and RD 108	Geotechnical studies and levee improvements are needed to address through seepage and under seepage problems for the 12 miles of levees that protect the unincorporated town of Knights Landing. The evaluations are necessary to determine the potential for through seepage, under seepage, or other levee weaknesses that may lead to levee failure. Through seepage can be addressed through construction of the Mid-Valley Project -- a multiple-phase US Army Corps	6 miles of Sacramento River levees and 6 miles of levees on the Knights Landing Ridge Cut Canal.	Sacramento River	12-36 Months

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**Table 7-5 – Individual Actions Considered in the Sacramento River
West Bank Integrated Project**

Project ID	Project Name	Organization	Summary	Location	Geographic Area	Project Readiness
			of Engineers project. Under seepage and other problems can only be addressed once levee integrity studies are completed that will identify needed improvements. Funding may also be needed for improvements necessary to meet federal erosion and freeboard standards.			
FM6	Clarksburg Levee Improvement Project / Sacramento River Levee Improvement #4	RD 999 and Yolo County	Make levee improvement #4 at Clarksburg. The levees that protect the small community of Clarksburg were developed many years ago when lands were reclaimed and developed for agricultural uses. Nearly a century later, these levees now protect over 2,000 residents and valuable agricultural lands. The reliability of this levee system has never been studied, despite evidence of seepage problems. Geotechnical studies and levee improvements are now needed to address through seepage and under seepage problems for the levees that could cause levee failure. Funding is also needed for necessary improvements identified by the geotechnical evaluations.	Reclamation District 999 unit #4 levee mile 0 to levee mile .8.	Sacramento River	6-12 Months
FM7	Sacramento River West Bank Levee Integrity Program	Yolo County	Levee maintenance districts need funding for geotechnical evaluations of all Sacramento River levees not included in the West Sacramento levee improvement projects. Approximately 80 miles of Sacramento River levees have never been evaluated, despite identified seepage problems. The evaluations are necessary to determine the potential for through seepage, under seepage, or other levee weaknesses that may lead to levee failure. The studies should identify improvements that also need to be funded.	Approximately 80 miles of levees in unincorporated Yolo County outside of Knights Landing and Clarksburg.	Sacramento River	Unknown
FM30	Sacramento River Levee Rehabilitation Project (Merritt Island)	RD 150	Waterside Erosion repair of damage from 07 flood. Over 14,000 feet of wave wash/erosion damage done to the levees of RD 150/Merritt Island along the Sacramento River Bank, Sutter Slough bank and Elk Slough bank.		Sacramento River	TBD
FM40	Sacramento River Levee Repair	City of West Sacramento	Correct deficiencies, protect against under seepage, and maintain the Sacramento River Levees to current standards for FEMA 100 yr and 200 year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of water-side levee slopes, increased levee height through crown raising or crown-top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee land-side, levee setbacks, etc.	Right bank of the Sacramento River from approximately River Mile 63.0 to approximately River Mile 46.0.	Sacramento River	12-36 Months
FM41	Deep Water Ship Channel Navigation Levee Repair	City of West Sacramento	Correct deficiencies, protect against under seepage, and maintain the Deep Water Ship Canal Levees to current standards for FEMA 100-year and urban levee 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown-top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	Deep Water Ship Canal Navigation Levee extending from the Sacramento River just east of the Port of Sacramento to its terminus into the San Francisco Bay near Rio Vista (approximately 22 miles).	Deep Water Ship Channel and Levees	12-36 Months
FM42	Sacramento Bypass-Yolo Bypass Levee Repair	City of West Sacramento	Correct deficiencies, protect against under seepage, and maintain the Sacramento Bypass and Yolo Bypass Levees to current standards for FEMA 100-year and urban levee 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown-top	South levee of the Sacramento Bypass extending from the Sacramento River at the Sacramento Weir	Sacramento Bypass and Yolo Bypass	12-36 Months

Action Program

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**Table 7-5 – Individual Actions Considered in the Sacramento River
West Bank Integrated Project**

Project ID	Project Name	Organization	Summary	Location	Geographic Area	Project Readiness
			walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	to the Yolo Bypass and the east levee of the Yolo Bypass extending from the Sacramento Bypass to the Deep Water Ship Canal Navigation Levee.		
FM43	West Sacramento South Cross Levee Repair	City of West Sacramento	Correct deficiencies, protect against under seepage, and maintain the West Sacramento South Cross Levees to current standards for FEMA 100-year and urban levee 200-year levels of flood protection. Physical improvements may include, but not be limited to, restoration and armoring of waterside levee slopes, increased levee height through crown raising or crown-top walls, slurry cutoff walls in the levee prism, seepage blankets on the levee landside, levee setbacks, etc.	Cross levee on West Sacramento's southern border extending from the Sacramento River to the Deep Water Ship Canal. This levee protects the City from flood water intrusion from possible Sacramento River west levee or Deep Water Ship Canal east levee break south of the City.	Deep water Ship Channel and Levees, Cross Levees	12-36 Months
FM44	Ongoing Levee Maintenance and Critical Repair Program	City of West Sacramento and Yolo County	Annual program of levee maintenance and repair at critical erosion sites, implementing Public Law 8499.	Yolo County's 215 miles of Sacramento River Flood Control Project levees, 22 miles of Deep Water Ship Channel levees, Yolo Bypass Project levees.	Sacramento River, Yolo Bypass; Deep Water Ship Channel and Levees	6-12 Months
FM45	RD 900 and West Sacramento MOU on Storm Water Detention and Raw Water Supply	City of West Sacramento	The City of West Sacramento and Reclamation District 900 are developing an agreement for cooperative management, use, and maintenance of storm water detention facilities, irrigation and drainage canals, pumps, and other facilities associated with purveying and use of untreated water.	Within RD 900 and City jurisdictional areas	Sacramento River	1-6 Months
FM46	Elk Slough Reclamation Pumping Plant	RD 999	Existing pumping plant is 80 years old. Replace 3 old pumps with 4 new pumps and drives. This project will increase pumping efficiency, reduce cost, increase reliability and maintain the exiting pumping capacity.	New Pumping infrastructure at 38563 Netherlands Road, Clarksburg, CA 95612, 1,000 HP. Pump Station	Sacramento River	TBD
FM47	Public Outreach on Flood Risk	Yolo County and City of West Sacramento	Continue to improve public outreach efforts to encourage citizens living in the floodplain to purchase flood insurance. Residents and property owners in the floodplain may be at risk if flooding occurs on the Sacramento River.	Sacramento River floodplain within specific flood zones.	Sacramento River	6-12 Months

Action Program

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**Table 7-5 – Individual Actions Considered in the Sacramento River
West Bank Integrated Project**

Project ID	Project Name	Organization	Summary	Location	Geographic Area	Project Readiness
			Floodplain managers have recently become aware of potential levee weaknesses along the Sacramento River. Property owners need to understand the flood risk and should also be encouraged to purchase flood insurance or ensure that their policy will not expire.			
FM48	Levee Maintenance Fee Structure Assessment	Yolo County and City of West Sacramento	Assess levee maintenance district fee structure and funding opportunities in relation to maintenance demands. Work with the Department of Water Resources to evaluate and recommend solutions. Use the Local Agency Formation Commission municipal service review of levee maintenance districts to initiate changes as appropriate (occurs every five years, the last one was completed in March 2005).	The river corridor along the 215-mile stretch of the Sacramento River in Yolo County.	Sacramento River	TBD
R7	Knights Landing River Access Facility Improvements	Yolo County	Renovate an existing river access/fishing facility located on a 4-acre site, located along the Sacramento Slough (with access to the Sacramento River). The site is owned by the State Wildlife Conservation Board (WCB), and managed by Yolo County under an operating agreement with the WCB. Renovation and construction to include removing navigation obstacles, installing updated boarding floats, repaving the parking lot, installing a vault restroom, potable water system, automated fish cleaning station, updating the site electrical, installing an automated pay station, fishing platforms, and upgrading the park host facilities.	One mile west of the town of Knights Landing off of State Hwy 45.	Sacramento River	>36 Months
R36	Main Drain Canal Recreation Corridor	City of West Sacramento	Design and construct over 6 miles of bicycle and pedestrian access, travel, and other use amenities along the Main Drainage Canal between the Barge Canal and the Deep Water Ship Channel. Improvements will consist of paved and un-paved trail surfaces, vehicular staging areas and access controls, and location-based amenities (e.g., picnic tables, trash/recycling receptacles, information kiosks, drinking fountains, shade structures, landscaping, viewing areas, bank fishing access, etc.). Improvements will be phased according to available funding and other opportunities.	Along the entire length of the Main Drain Canal, from the Barge Canal south along Arlington Road to the intersection of Lake Washington Boulevard and Jefferson Boulevard, from the MC-10 Detention Basin eastward to Jefferson Boulevard, and southward from Jefferson Boulevard to the Main Drain Pump Station at the Deep Water Ship Canal levee.	Sacramento River, Deep Water Ship Channel and Levees	1-6 Months
R37	Implementation of the Commission's Land Use and Resource management Plan for the Primary Zone of the Delta (Management Plan)	Yolo County and City of West Sacramento	The Management Plan contains findings, policies, and recommendations in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs. The policies of the Management Plan are incorporated in the General Plans of local entities with jurisdiction in the Primary Zone. All projects should be consistent with the Management Plan as well as County General Plan policies pertaining to the Delta. In addition, all projects should be compatible with the Great Delta Trail which is being planned by the Delta Protection	Implementation of the Management Plan occurs in the Legal Delta (Water Code Section 12220 et seq.)	Cache Creek; Sacramento River; Other Sloughs or Tributaries; Yolo Bypass; Deep Water Ship	

Action Program

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Action Program

Table 7-5 – Individual Actions Considered in the Sacramento River West Bank Integrated Project						
Project ID	Project Name	Organization	Summary	Location	Geographic Area	Project Readiness
			Commission pursuant to SB 1556 (Torlakson).		Channel and Levees	
R38	Sacramento River Recreational Trail	City of West Sacramento	Design and construct a continuous 13.1-mile, 192-acre recreation corridor along the entire length of the Sacramento River within City limits. Improvements will consist of paved and unpaved trail surfaces, vehicular staging areas and access controls, and location-based amenities ranging from major community parks (e.g., River Walk Park, Riverfront Promenade) to occasional experiences (e.g., picnic tables, trash/recycling receptacles, information kiosks, drinking fountains, shade structures, landscaping, viewing areas, bank fishing access, etc.). Improvements will be phased according to available funding and other opportunities.	Along the entire length of the Sacramento River within City limits, predominantly atop Project Levees and including River Walk Park, Riverfront Promenade, Pioneer Bluff Park, Barge Canal levee, and South River Road.	Sacramento River, Deep Water Ship Channel and Levees	6-12 Months
WQ11	Sacramento River Joint Source Water Protection Program	City of West Sacramento	Project includes funding and participation in the joint source water protection program with City of Sacramento. This program aims to reduce TOC and pesticide runoff into the Sacramento River. Includes public notification and education programs, coordination with the CRC on rice management and spill notification procedures. Funding enables monitoring for existing and new pesticides during the spring and summer discharge periods.	Sacramento River from I-80 to I Street Bridge.	Sacramento River (Watershed)	Ready Now
WQ17	Sacramento River Storm Water Sources Monitoring Program	City of West Sacramento and Yolo County	Project includes funding for implementation of a storm water monitoring program to identify and reduce urban runoff contaminants from entering the Sacramento River water supply. Project consists of developing a long-term storm water monitoring program for Yolo County along the Sacramento River.	Sacramento River from I-80 to I Street Bridge	Sacramento River	6-12 Months
WS27	Linden Road Water Intake Plant Replacement	RD 900	Replace existing outdated water intake pumping facility with new intake and discharge pipelines, pump, and electrical panel. New pipeline invert through levee will be above 200 year water surface. Intake will have fish screens. Old pipeline will be removed and levee will be restored to meet current Corps requirements.	East end of Linden Road, through Sacramento River levee in Southport area of West Sacramento	Sacramento River	1-6 Months
WS28	West Sacramento Reclaimed Water Use Standards	City of West Sacramento	Adopt and promulgate the Sacramento Regional County Sanitation District standards for irrigation systems that can use reclaimed or other non-potable water for landscaping or parks.	Citywide, for all public landscaping, streetscape, and park improvements	Sacramento River	Ready Now

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Table 7-6 – Individual Actions Not Carried Forward in the Sacramento River West Bank Integrated Project

Project ID	Project Name	Organization	Summary
FM27	Funding for the Flood Management Division of DWR	Increased funding for the maintenance work of DWR's Flood Management Division. The Division maintains 56 miles of Yolo County levees.	Sacramento River
FM28	Sacramento River Levee Rehabilitation Project (RM 69.9 RD 27)	RD 827 needs to fix a critical erosion site at RM 69.9. No levee break analysis has been completed to determine what would flood if this levee fails.	Sacramento River
FM32	Sutter Bypass Vegetation Removal Project	Vegetation removal in the Sutter Bypass consistent with habitat restoration activities. Sutter Bypass is losing capacity because of vegetation; water that is not captured in the Sutter Bypass can put additional pressure on the Yolo Bypass and downstream levees.	Sacramento River
FM33	Yolo and Tisdale Bypasses Sediment Removal Program	RD 108 and DWR need additional funding to remove sediment that is restricting the capacity of the Yolo Bypass and the Tisdale Bypass.	Sacramento River
FM49	Traffic Alleviation on Levee Roads	Develop recommendations related to alleviating problems associated with increased traffic on levee roads and parking on levee banks that inhibit levee maintenance efforts.	Sacramento River
R39	Broderick Boat Ramp Expansion Project	Expand the existing Broderick boat ramp and improve facilities.	Sacramento River
R40	Patwin-Summerfield Pedestrian Bridge	Construct the Patwin-Summerfield Bicycle and Pedestrian Bridge over the Main Drainage Canal to connect neighborhoods and two parks.	Sacramento River
WQ10	Sacramento River Water Facilities Review Program	Countywide, develop comments and opinions related to Environment Impact Reports on new surface water treatment facilities and water contracts within the Sacramento River watershed that affect existing and future Yolo County municipal and agricultural surface water users.	Sacramento River

Table 7-7. IRWMP Criteria Performance Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	IRWMP PERFORMANCE CRITERIA				
			1. Ensure open & frequent communication with the public.	2. Integrate water resource planning and land use planning.	3. Help disadvantaged communities with basic infrastructure improvements.	4. Integrate actions to ensure multiple benefits, including recreation, aquatic, riparian ecosystem enhancement.	5. Provide a reliable and sustainable surface water supply from a variety of sources.
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	2	3	2	3	0
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	2	3	1	3	0
P2	Knights Landing Area Project	FM5, R7	2	2	1	2	0
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	3	3	0	3	1
P4	Deep Water Ship Channel Project	FM41, FM42, R13	1	2	0	3	0
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	3	2	2	2	3
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	3	2	2	2	3
Not Integrated							
R10	Elkhorn Regional Park Improvement Project	N.A.	1	1	0	1	0
R37	Delta Management Plan Implementation	N.A.	1	3	0	2	0

Table 7-7. IRWMP Criteria Performance Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	IRWMP PERFORMANCE CRITERIA						
			6. Manage the county's ground water resources for a sustainable, reliable, high quality supply of ground water.	7. Conjunctively use ground water and surface water to maximize efficiency, sustainability and value of water.	8. Develop state - of-the-art urban and agricultural water use efficiency programs.	9. Meet, state, federal, or local standards for water quality protection, including TMDLs.	10. Develop continuous water quality monitoring, management and protection programs.		
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	0	0	0	1	0		
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	0	0	0	1	0		
P2	Knights Landing Area Project	FM5, R7	0	0	0	0	0		
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	0	0	3	0	0		
P4	Deep Water Ship Channel Project	FM41, FM42, R13	0	0	1	0	0		
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	0	0	1	0	0		
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	0	2	3	2	2		
Not Integrated									
R10	Elkhorn Regional Park Improvement Project	N.A.	0	0	0	0	0		
R37	Delta Management Plan Implementation	N.A.	0	0	0	2	1		

Table 7-7. IRWMP Criteria Performance Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	IRWMP PERFORMANCE CRITERIA				
			11. Reduce flood risk in all areas of the county within 20 years.	12. Flood management approaches that reduce flood risk, and improve riparian environment, and recreational opportunities.	13. Develop innovative storm water management requirements, guidelines and best practices.	14. Enhance the aquatic and riparian environment in priority areas, consistent with the emerging Yolo County HCP/NCCP.	15. Become a model area for integrating agricultural production and habitat conservation.
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	3	3	2	2	2
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	2	3	1	2	1
P2	Knights Landing Area Project	FM5, R7	1	2	0	0	0
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	1	1	1	1	1
P4	Deep Water Ship Channel Project	FM41, FM42, R13	2	2	2	2	2
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	1	3	1	1	0
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	0	0	1	2	1
Not Integrated							
R10	Elkhorn Regional Park Improvement Project	N.A.	0	0	0	0	0
R37	Delta Management Plan Implementation	N.A.	0	3	0	2	0

Table 7-7. IRWMP Criteria Performance Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	IRWMP PERFORMANCE CRITERIA						
			16. Achieve a sustainable and effective monitoring, management and reporting process for priority aquatic and riparian habitat areas.	17. Improve and expand water-related recreational programs, facilities, and opportunities.	18. Integrate water-related recreational actions with other actions that meet water management objectives.	19. Eliminate or significantly reduce pollution in impaired waters and sensitive habitat areas.	20. Reduce conflict between water users or resolve water rights disputes.		
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	2	2	3	1	0		
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	2	3	3	1	0		
P2	Knights Landing Area Project	FM5, R7	1	1	2	1	0		
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	1	3	3	1	0		
P4	Deep Water Ship Channel Project	FM41, FM42, R13	2	3	2	0	0		
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	2	2	3	1	0		
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	2	1	2	2	0		
Not Integrated									
R10	Elkhorn Regional Park Improvement Project	N.A.	1	1	1	1	0		
R37	Delta Management Plan Implementation	N.A.	1	1	1	1	0		

Table 7-7. IRWMP Criteria Performance Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	IRWMP PERFORMANCE CRITERIA				
			21. Implement RWQCB Watershed Management Initiative Chapters, plans, and policies.	22. Implement the SWRCB Non-point Source Pollution Plan.	23. Assist in meeting Delta Water Quality Objectives.	24. Implement recommendations of floodplain management, desalination, and recycling task forces, or state species recovery plan.	25. Address environmental justice concerns.
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	2	0	2	3	2
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	1	0	1	1	2
P2	Knights Landing Area Project	FM5, R7	0	1	0	1	1
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	1	1	1	3	2
P4	Deep Water Ship Channel Project	FM41, FM42, R13	2	0	2	2	3
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	0	1	0	1	2
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	2	2	2	1	2
Not Integrated							
R10	Elkhorn Regional Park Improvement Project	N.A.	0	0	1	0	1
R37	Delta Management Plan Implementation	N.A.	0	0	1	0	0

Table 7-7. IRWMP Criteria Performance Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	IRWMP PERFORMANCE CRITERIA		Total IRWMP Criteria Performance Score
			26. Assist in achieving one or more goals of the CALFED Bay-Delta Program.	27. Consistent with Delta Standards and Programs	
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	2	3	45
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	3	3	39
P2	Knights Landing Area Project	FM5, R7	1	3	22
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	0	3	37
P4	Deep Water Ship Channel Project	FM41, FM42, R13	0	3	36
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	2	3	36
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	2	3	46
Not Integrated					
R10	Elkhorn Regional Park Improvement Project	N.A.	1	3	13
R37	Delta Management Plan Implementation	N.A.	2	3	24

Table 7-8. Other Local Consideration Scores

Integrated Project ID	Integrated Project Title	Component Action IDs	OTHER CONSIDERATIONS						Total Other Considerations Score	Weighted Other Considerations Score
			Project Urgency	Total Project Integration	Lead Agency Capacity for Implementation	Project Readiness	Status of Funding			
UP	Urgent Levee and Other Flood Management Improvements	FM 5, FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	Immediate	N.A.	N.A.	N.A.	N.A.	N.A.	Immediate	Immediate
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM47, FM48, R17, R21	3	3	2	2	2	2	12	24
P2	Knights Landing Area Project	FM5, R7	1	1	1	1	0	4	8	
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	1	2	2	2	1	8	16	
P4	Deep Water Ship Channel Project	FM41, FM42, R13	2	1	1	1	1	6	12	
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	2	2	1	1	0	6	12	
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	0	1	2	2	2	7	14	
Not Integrated										
R10	Elkhorn Regional Park Improvement Project	N.A.	0	0	1	0	0	1	2	
R37	Delta Management Plan Implementation	N.A.	0	0	1	0	0	1	2	

Table 7-9. Project Performance Scores and Priority Ranking

Integrated Project ID	Integrated Project Title	Component Action IDs*	Total IRWMP Criteria Score	Total Other Considerations Score	IRWMP Priority	Priority Rationale
UP	Urgent Levee and Other Flood Management Improvements	FM6, FM7, FM30, FM40, FM41, FM42, FM43, FM44	45	Immediate	Immediate	The protection of life and safety is the most important consideration of the County and City. The overarching importance of life and safety warrants single-function integration of urgent flood control actions and immediate priority for implementation.
P1	Sacramento River Flood Management Habitat, and Recreation Improvements	AR26, AR49, AR50, FM7, FM40, FM44, FM 47, FM48, R17, R21	39	24	High	This project advances urgent life and safety improvements and achieves the highest level of multi-function integration.
P2	Knights Landing Area Project	FM5, R7	22	8	Medium	The Knights Landing actions harness a good opportunity for integrating complementary flood control and recreational improvements.
P3	West Sacramento Project	FM43, FM45, R35, R36, R38, WS 28	37	16	Medium	The combination of these actions creates a compelling opportunity to advance complementary actions through improved leveraging of local funding sources, while achieving urgent life and safety improvements.
P4	Deep Water Ship Channel Project	FM41, FM42, R13	36	12	Medium	This project advances urgent life and safety improvements with logical integration of an important regional recreation improvement. Local funds have been committed to leverage external grant financing.
P5	Clarksburg Area Project	AR51, FM6, FM30, FM46, R30	36	12	Medium	This project advances urgent life and safety improvements with good integration and project readiness. Local funds have been committed to leverage external grant financing.
P6	Sacramento River Water Quality and Water Supply Project	WQ11, WQ17, WS27, WS28	46	14	Medium	These actions are of fundamental importance to several on-going and pending programs and projects. The integration of these water quality and water supply actions is logical and improve the overall value of the project.
Not Integrated						
R10	Elkhorn Regional Park Improvement Project	N.A.	13	2	Low	While there is sufficient lead agency capacity to implement this action, this project lacks funding, project integration, and urgency.
R37	Delta Management Plan Implementation	N.A.	24	2	Low	While there is sufficient lead agency capacity, the absence of funding and integration interferes with implementation of this action.

* see Table 7-5 for descriptions

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The “Sacramento River Flood Management Habitat, and Recreation Improvements” (P1) received a “high” priority. This integrated action advances urgent life and safety improvements and achieves the highest level of multi-function integration. It integrates 10 flood management, aquatic and ecosystem enhancement, and recreation actions.

Five integrated actions received a “medium” priority rating. These include the “Knights Landing Area Project”, “West Sacramento Project”, “Clarksburg Area Project”, “Deep Water Ship Channel Project” and the “Sacramento River Water Quality and Water Supply Project”. These projects generally integrate complementary individual actions within a local geographic area, or in the case of the water quality and water supply project are of fundamental importance to several on-going and pending programs and projects.

Two actions were not integrated and were considered “low” priorities at the time of scoring. They include the “Elkhorn Regional Park Improvement Project” and the “Delta Management Plan”. While there is sufficient lead agency capacity to implement these actions, they either lacked funding, project integration, or urgency.

Implementation

Prerequisite tasks may be required prior to implementation of the integrated actions described here. They may include geotechnical investigations, hydraulic modeling, environmental compliance, engineering design, etc. Unfortunately, some of these activities take months to years to complete. Urgent flood management improvements have immediate priority to protect life and property of the community. There can be no doubt that such urgent priority projects should be implemented immediately. Responsibility of these urgently needed actions along the Sacramento River and Ship Channel lies primarily with the U.S. Army Corps of Engineers, the State Reclamation Board, and the California Department of Water Resources. Local reclamation and levee districts have a shared, but lesser, responsibility as local sponsors and maintaining agencies for state-federal levee protection projects

Planning and implementing water management along the Sacramento River West Bank is an ongoing process. Although available implementation funding from sources such as Propositions 50, 84 and 1E should be pursued whenever appropriate, the water management issues and needs of the community are ongoing and independent of state or federal funding cycles. The stakeholder-based local water management planning and implementation process that was initiated through this IRWMP should be continued into the future. For the SRWBIP, the process was led by Yolo County and the City of West Sacramento, with stakeholder input. In the future, the process should involve focused stakeholder participation in the form of a Sacramento River West Bank Stakeholder Work Group. This group should include participation of the following entities:

- City of West Sacramento
- Yolo County

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- Reclamation Districts
- Private Landowners
- Town of Clarksburg
- Town of Knights Landing
- Delta Protection Commission
- State Reclamation Board
- California Department of Fish and Game
- California Department of Water Resources
- U.S. Army Corps of Engineers

Other local planning processes centered on water management and public safety have benefited from similar work groups, including for example the Yolo Bypass Working Group, Lower Putah Creek Coordinating Committee, the Sacramento River Corridor Planning Forum, and the Lower American River Task Force. These groups have been effective in collaborative planning, obtaining funding and implementing multi-objective projects. Important, ongoing roles for a local Sacramento River West Bank Stakeholder Work Group are to monitor and lobby for yearly progress and funding of state-federal bank and levee protection projects along the west side of the Sacramento River in Yolo County and West Sacramento, and to promote state funding and technical assistance for local geotechnical investigations of potential levee under-seepage risks.

Meanwhile, numerous high, medium and even low priority projects would greatly benefit the community. Therefore, a longer term planning and implementation program of projects with multiple water management and flood risk reduction objectives should be pursued within the more formal structure of a local Work Group. The primary tasks of the WRA can then be to provide a forum for sharing information among local groups, to disseminate information about funding opportunities, and integrate efforts for joint funding applications.

IA6. Putah Creek Integrated Project

As described in Section 5, the Putah Creek Integrated Project (PCIP) focuses on multiple related improvements, including improvements in water quality, storm drainage, flood flow conveyance, habitat quality, and recreation in the Putah Creek area.

The PCIP includes 22 potential component actions. Several of these actions are included in the *Lower Putah Creek Watershed Management Action Plan* (EDAW 2005), prepared for the Lower Putah Creek Coordinating Committee (LPCCC). Although the primary focus of the actions by the LPCCC is ecosystem restoration, most actions have multiple objectives and flood management, water quality, water supply, and recreation objectives may also be met. An extensive monitoring program has been implemented for Lower Putah Creek under the direction of LPCCC. These monitoring studies include vegetation monitoring (see EDAW 2005), terrestrial wildlife (e.g., Lindgren et al. 2006), nesting birds (e.g., Truan et al. 2006), fish data (e.g., Small et al. 2004), and fish habitat (Yates 2003). Because of this wealth of information, several proposed actions could be implemented with little or no preliminary investigations. Other actions require that preliminary studies be implemented prior to implementation. The overall schedule for implementing the PCIP will need to be modified as more information is obtained, analyses are completed, and funding is reconciled.

Environmental compliance for habitat restoration projects conducted by or in coordination with the LPCCC has been streamlined. A categorical exemption CEQA has been obtained and programmatic permits under Section 1600 *et seq.* of the California Fish and Game Code, and compliance with Sections 404 (Nationwide Permit 27) and 401 of the Clean Water Act have been obtained. Requirements for habitat restoration projects under these agreements can be found in EDAW (2005).

Lead Agency, Partners, and Stakeholders

Several aquatic and riparian ecosystem enhancement and restoration projects have been implemented by the LPCCC in recent years. The implementation of the PCIP should be closely coordinated with the ongoing water resource planning by the LPCCC and its member agencies, and should be consistent with the Lower Putah Creek Watershed Management Action Plan. The LPCCC will clearly be important partners for the implementation of the PCIP. The LPCCC forms a forum where most stakeholders with a direct interest in Putah Creek are represented, including the Boards of Supervisors of Solano and Yolo Counties, the cities of Davis, Fairfield, Suisun, Vacaville, Vallejo, and Winters, SCWA, Solano Irrigation District, Maine Prairie Water District, UC Davis, Putah Creek Council, and riparian landowners.

I n t e g r a t e d R e g i o n a l W a t e r M a n a g e m e n t P l a n
A p r i l 2 0 0 7

The Solano County Water Agency is the lead agency with the responsibility for the overall management of the work performed or to be performed for this integrated project. Partners in the program and stakeholders are noted as follows:

- Partners
 - County of Solano
 - County of Yolo
 - Solano County Water Agency
 - Putah Creek Council
 - City of Winters
 - City of Davis
 - UC Davis
- Stakeholders
 - YCFCWCD
 - Yolo Basin Foundation
 - Riparian landowners
 - Tuleyome

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Prerequisite Tasks

A matrix is presented in **Figure 7-9**, which illustrates the relationship between the respective component actions and the prerequisite studies or investigations that are deemed important to support the orderly development of the integrated action. The majority of the actions require detailed planning and investigative work in order to be advanced.

Brief descriptions of the prerequisite studies or investigations are presented below. A general schedule and time frame and budget for completing the respective studies are presented on **Figure 7-10**.

1. Perform Aquatic and Riparian Habitat Assessments

The LPCCC is currently developing a Lower Putah Creek Watershed Management Action Plan. Phase I of this plan, a resource assessment, has been developed (EDAW 2005). The results of this assessment can be used for an initial resource assessment for project planning, but depending upon the timing and location of the project, additional natural resource surveys and assessments may need to be performed. This assessment should inventory the existing habitat



FIGURE 7-9
YOLO COUNTY IRWMP
PUTAH CREEK INTEGRATED PROJECT
INTERRELATIONSHIP BETWEEN PREREQUISITE TASKS AND COMPONENT ACTIONS

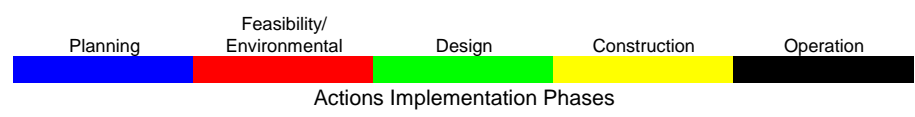
TASKS	COMPONENT ACTIONS																					
	Putah Creek Bank Stabilization Project	Dry Creek Bank Stabilization Project	City of Winters Storm Drainage Diversion to Putah Creek Project	Putah Creek Diversion Dam Removal Project	Mace Boulevard Bridge Improvement Project	Russell Ranch Riparian and Grassland Habitat Restoration Project	Putah Creek Fishes Habitat Enhancement Project	UC Davis Confined Animal Relocation Project	Putah Creek Recreational Facilities Restoration and Expansion Project	Putah Creek and Cache Creek Exotic and Invasive Species Removal Project	Putah Creek Floodplain Habitat Improvement Project	Putah Creek Fish Passage Project	Putah Creek Spawning Grounds Improvement Project	Replace Earthen Crossing of Putah Creek at Route 106A	Removal of Winters Percolation Dam	Increase Width of Riparian Corridor of Lower Putah Creek	South Fork Preserve Riparian and Grassland Restoration Project	Putah Creek Trails Program	Putah Creek Fishing Access Project	Love Public Access Improvements Project	Reroute Willow/University Canal	Geomorphic Restoration of Putah Creek
1. Perform Aquatic and Riparian Habitat Assessments	X	X			X	X			X	X	X	X			X						X	X
2. Conduct Hydraulic Studies and Reconcile Channel Dimensions to Post-Dam Hydrology	X	X	X		X	X			X	X	X	X			X			X	X		X	X
3. Conduct Focused Geomorphic Analyses of Bank Stability, Erosion, and Sedimentation	X	X	X		X	X			X	X	X	X			X						X	X
4. Investigate Fish Habitat Enhancement Opportunities					X	X			X	X	X	X			X			X			X	X
5. Investigate City of Winters Storm Water Drainage Issues			X																			
6. Determine Priority Sites and Feasibility for Floodplain and Riparian Habitat Restoration	X	X	X		X	X			X	X	X	X			X							
7. Design and Implement Putah Creek and Dry Creek Bank Stabilization Projects	X	X	X		X				X													
8. Design and Build an Appropriately-Sized Bridge at Mace Boulevard					X					X												
9. Plan and Design the Restoration of North Fork Putah Creek at the UC Davis Confined Animal Facility									X	X					X				X			
10. Implement the Putah Creek Diversion Dam Vegetation Removal Project					X				X	X					X						X	X
11. Design and Implement Floodplain and Riparian Habitat Restoration Projects	X	X	X		X	X			X	X	X	X			X							
12. Design and Implement Winters Putah Creek Park			X															X				
13. Plan, Design, and Implement Fishing Access Improvements and a Campground									X									X	X			
14. Plan, Design, and Implement Additional Trails Along Putah Creek on Public Lands																		X	X			
15. Plan, Design, and Implement the Rerouting of Willow and University Canals																					X	X
16. Design and Implement a Permanent Creek Crossing at Route 106A	X		X																		X	
17. Design and Implement the Russell Ranch Riparian and Grassland Restoration Project					X																	
18. Plan, Design, and Implement the South Fork Preserve Riparian and Grassland Restoration Project	X	X																				X

FIGURE 7-10
YOLO COUNTY IRWMP
PUTAH CREEK INTEGRATED PROJECT
PREREQUISITE TASKS - SCHEDULE AND BUDGET



Tasks	Budget, \$1000	Years																			
		1				2				3				4				5			
1. Perform Aquatic and Riparian Habitat Assessments	200-500	[Blue]																			
2. Conduct Hydraulic Studies and Reconcile Channel Dimensions to Post-Dam Hydrology	200-500	[Blue]																			
3. Conduct Focused Geomorphic Analyses of Bank Stability, Erosion, and Sedimentation	200-500	[Blue]																			
4. Investigate Fish Habitat Enhancement Opportunities	100-200	[Blue]																			
5. Investigate City of Winters Storm Water Drainage Issues	50-100	[Blue]																			
6. Determine Priority Sites and Feasibility for Floodplain and Riparian Habitat Restoration	100-200	[Blue]		[Red]																	
7. Design and Implement Putah Creek and Dry Creek Bank Stabilization Projects	200-500	[Green]		[Yellow]		[Black]															
8. Design and Build an Appropriately-Sized Bridge at Mace Boulevard	500-1000	[Blue]		[Red]		[Green]		[Yellow]		[Black]											
9. Plan, Design and Implement the Restoration of NF Putah Creek at the UCD Confined Animal Facility	50-200	[Red]		[Green]		[Yellow]		[Black]													
10. Implement the Putah Creek Diversion Dam Vegetation Removal Project	0	[Yellow]	[Black]			[Yellow]	[Black]			[Yellow]	[Black]			[Yellow]	[Black]						
11. Design and Implement Floodplain and Riparian Habitat Restoration Projects*	100-200					[Green]		[Yellow]		[Black]											
12. Design and Implement Winters Putah Creek Park (incl. removal of percolation dam)	50-100	[Green]		[Yellow]		[Black]															
13. Plan, Design and Implement Fishing Access Improvements and a Campground	50-100	[Blue]	[Green]	[Yellow]		[Black]															
14. Plan, Design and Implement Additional Trails along Putah Creek on Public Lands	100-200	[Blue]	[Green]		[Yellow]		[Black]														
15. Plan, Design and Implement the Rerouting of Willow and University Canal	200-500	[Blue]	[Red]	[Green]		[Yellow]		[Black]													
16. Design and Implement a Permanent Creek Crossing at Route 106A	50-100	[Green]		[Yellow]		[Black]															
17. Design and Implement Russell Ranch Riparian and Grassland Restoration Project	50-100	[Green]		[Yellow]		[Black]															
18. Plan, Design and Implement South Fork Preserve Riparian and Grassland Restoration Project	50-100	[Blue]	[Green]		[Yellow]		[Black]														

Note:
 *Schedule and cost per project.
 **Unknown - Depending upon size of project.



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and resources with the intent and purpose of identifying opportunities for enhancement. Special attention should be given to identifying invasive species with consideration of removing or managing them.

2. Conduct Hydraulic Studies and Reconcile Channel Dimensions to Post-Dam Hydrology

The Solano County Water Agency is currently developing a HEC-RAS hydraulic model. Hydraulic modeling using this model would be necessary as part of project feasibility assessment and design for a number of actions. A LiDAR survey of the main channel and major tributaries has been completed (2005) and one-foot contours are available for the entire channel. This data will need to be used for detailed project design.

Recognizing that: (1) the main channel of Putah Creek was formed by peak pre-dam flows that were approximately 10-fold higher than post-dam flows for any given recurrence interval; (2) the channel was further widened and straightened for flood conveyance and deepened by gravel extraction; (3) the current channel dimensions, especially the channel width, is out of balance with current post-dam flows, resulting in loss of natural form and function that, in turn, diminishes ecological function (e.g., natural recruitment of native vegetation) and sustainability of fish and wildlife habitat. Narrowing the channel of Putah Creek in over-widened reaches is essential to achieve a functioning scaled-down morphology in balance with current post-dam flows.

3. Conduct Focused Geomorphic Analyses of Bank Stability, Erosion, and Sedimentation

Site-specific studies need to be carried out to determine how best to remedy erosion and sedimentation problems in Putah Creek and its tributaries. A study of Dry Creek from Putah Creek to Highway 128 is currently underway.

4. Investigate Fish Habitat Enhancement Opportunities

Salmon spawning was limited by available spawning gravels during the winter of 2003/2004 (Small et al. 2004) in Putah Creek. Both the area and thickness of appropriately-sized gravels were insufficient for optimal spawning success. Opportunities should be investigated to determine where spawning gravels can be placed, and how they can be retained (e.g., by small rock berms). It may also be possible to let high flows distribute spawning gravels that have been placed on low bank surfaces, as has been done in numerous rivers (e.g., Merced River). Additional salmonid habitat improvements should also be investigated, including juvenile rearing habitat components, such as shade, overhead and instream cover, appropriate riffle and pool areas and depths, and reduction of predator habitat (e.g., deep pools with large mouth bass). These habitat improvements can be

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implemented as part of bank stabilization, riparian habitat and floodplain restoration projects.

5. Investigate City of Winters Storm Water Drainage Issues

Investigations need to be carried out to determine the storm water drainage system that is required to allow the build out of the City of Winters, envisioned in its General Plan. The U.S. Army Corps of Engineers conducted a study several years ago that should be reevaluated. The Corps study included a diversion of up to 1,000 cfs to Putah Creek during a 100-year storm event.

6. Determine Priority Sites and Feasibility for Floodplain and Riparian Habitat Restoration

The LiDAR survey combined with an existing hydrology survey provides data on channel form and water depth that could be used to identify priority sites for floodplain restoration. In addition, existing vegetation types and the occurrence of invasive plants has been mapped (EDAW 2005). These existing data should be combined with the results of ongoing geomorphic assessments and hydraulic modeling to determine appropriate locations for riparian habitat restoration. These restoration projects should be combined with bank stability and aquatic habitat improvements whenever feasible.

7. Design and Implement Putah Creek and Dry Creek Bank Stabilization Projects

After planning and feasibility studies have been carried out, including hydraulic and geomorphic analyses, bank stabilization projects for severely eroding sites should be designed. These bank protection projects should include biotechnical stabilization methods whenever feasible. These projects should include riparian and aquatic habitat improvements to the largest extent possible, without compromising stability.

8. Design and Build an Appropriately-Sized Bridge at Mace Boulevard

Hydraulic and engineering studies should be conducted to design a new bridge over Putah Creek at Mace Boulevard. This bridge is currently undersized and catches debris during flood events, further reducing its capacity.

9. Plan and Design the Restoration of North Fork Putah Creek at the UC Davis Confined Animal Facility

A study should be conducted to determine the appropriate location of the confined animal facility, and to determine the appropriate riparian restoration concepts for the creek. Permits should be obtained for the site and a stable restored riparian reach should be designed. This planning and design study will require the

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involvement of environmental planners, riparian ecologists, hydraulic and civil engineers and permitting experts.

10. Implement the Putah Creek Diversion Dam Vegetation Removal Project

The reduction of channel capacity by vegetation in the channel below Putah Creek Diversion Dam has been well documented. The vegetation removal can be implemented without conducting prerequisite studies.

11. Design and Implement Floodplain and Riparian Habitat Restoration Projects

Floodplain and riparian habitat restoration projects should be designed. Existing LiDAR survey data and the results of hydraulic and geomorphic analyses should be used. Projects should be designed to include multiple benefits, whenever appropriate, including bank stability, and aquatic habitat, and on public land recreation components.

12. Design and Implement Winters Putah Creek Park

Removing the derelict percolation dam in Winters (funded by a River Parkways grant), Himalayan blackberry, and other invasive plants will create an opportunity to build a trail and floodplain downstream from the dam site. These components of a Winters Putah Creek Park should be designed to enhance aquatic and riparian habitat and recreational opportunities. The park has the potential to become an amenity for the City of Winters, which enhances the connection of the people of Winters to Putah Creek.

13. Plan, Design, and Implement Fishing Access Improvements and a Campground

Fishing access and other recreational amenities, including a campground should be planned and designed at one or more of Yolo County's five fishing access locations in the interdam reach. This would include the design of sanitary facilities and an information kiosk linking the sites to the Putah Creek Discovery Corridor.

14. Plan, Design, and Implement Additional Trails Along Putah Creek on Public Lands

A trail system should be planned on public lands and designed to connect existing trails where feasible. These trails could include both hiking and bicycle trails. This could include a levee top trail system connecting Woodland, the Yolo Wildlife Area, Davis, and UC Davis. The trail system should be planned and designed so that flood management maintenance activities would not be compromised in any way and so trespassing on private property would not be facilitated.

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15. Plan, Design, and Implement the Rerouting of Willow and University Canal

The rerouting of Willow and University Canals should be planned and designed 100 feet north of their current alignment east of Road 95, to enhance security of downstream irrigation water supply and to protect the north bank of Putah Creek from washouts.

16. Design and Implement a Permanent Creek Crossing at Route 106A

A concrete ramp and open box culvert with steel grate should be designed for the crossing of Road 106A to facilitate fish passage and reduce sediment contribution to the creek. This facility should be designed so that no additional bank scour or bed erosion results in the vicinity of the project.

17. Design and Implement the Russell Ranch Riparian and Grassland Restoration Project

The existing funded habitat restoration project that is under way to restore riparian and grassland habitat at Russell Ranch could be expanded, by restoring additional areas.

18. Plan, Design, and Implement the South Fork Preserve Riparian and Grassland Restoration Project

The existing project on Lower Putah Creek to restore riparian and grassland habitat could be expanded, by restoring additional areas.

Summary

Considerable work is required before all components of the PCIP can be implemented. This work will build on the work completed already on Putah Creek by the LPCCC. As shown on **Figure 7-10**, early implementation can and should proceed on certain actions based upon planning and data collections conducted in advance of this IRWMP. At the same time, however, the respective actions should be implemented with full consideration given to incorporation in the overall plan for Putah Creek. The actions are in many cases dependent upon each other, like invasive species removal, bank stabilization, and riparian and aquatic habitat restoration.

It is anticipated that the prerequisite studies will require approximately three years to complete, at which time the integrated project can be defined with the feasibility of the respective component actions determined. This will represent a significant milestone in advancing the PCIP in coordination with ongoing efforts by LPCCC. Accordingly, a detailed work plan should be prepared to provide the direction for activities to be implemented in the subsequent 3-5 year period.

IA7. Yolo Bypass Integrated Project

As described in Section 5, the Yolo Bypass Integrated Project (YBIP) focuses on multiple related improvements, including improvements in water quality, public and private wetlands, aquatic and riparian habitats, education and recreation in the Yolo Bypass, all in the context of maintaining and enhancing the function of the Bypass as a floodway.

Since 1997 the Yolo Bypass Working Group (Working Group), a Bypass-wide stakeholder information sharing entity, has been the primary forum for multiple stakeholders and agencies to share information, receive feedback on proposed actions, and coordinate oversight of projects and studies throughout the Bypass. Yolo Basin Foundation (Foundation) has served to coordinate the efforts of the Working Group through a multi-year grant from CalFed, which expired in December 2006. Currently the Working Group is being supported with funds from the WRA of Yolo County and the consolidated mercury study funded by the State Water Board.

The YBIP includes 12 potential component actions in various stages of project readiness, and an additional seven conceptual-level project ideas that require significant development before they are given further consideration. Many actions have multiple objectives and benefits, including floodway management, water quality, mosquito control, ecosystem enhancements, and recreation. Some of these actions are included in the Draft Yolo Bypass Wildlife Area (Wildlife Area) Land Management Plan (LMP) (EDAW 2006) a CEQA equivalent document, prepared on behalf of DFG, with the support of the Foundation and the Working Group. A two dimensional floodplain hydraulic model was developed recently by the US Army Corps of Engineers (Corps) under a CalFed grant administered by the DWR. The Foundation coordinated a stakeholder group that worked with the Corps in assessing modeling needs and approaches. Some proposed actions may therefore be ready for implementation. Other actions may however require preliminary studies and stakeholder outreach programs prior to implementation.

Lead Agency, Partners, and Stakeholders

Many wetland, fisheries, and riparian habitat enhancement and restoration projects in the Yolo Bypass, on public and private lands have been implemented in recent years, or are in the planning or design stages. Improvements to visitor access and nature education have been progressing at the Wildlife Area. The Yolo Bypass Interagency Working Group prioritized fish habitat improvement projects for the Yolo Bypass and conducted preliminary public outreach in Fall 2006. They made presentations to the Yolo Bypass Working Group and the Lower Putah Creek Coordinating Committee. Development of all future projects plans and potential project implementation will be discussed with the Yolo Bypass Working Group. Future projects and management programs considered for the Wildlife Area will also be consistent with the soon to be completed LMP.

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There is no one lead agency with responsibility for overall management or sponsorship of projects for implementing the Yolo Bypass Integrated Project at this time, although there appears to be a growing need for one. Consideration could be given to creating a Yolo Bypass Foundation patterned to some extent after the Yolo Basin Foundation, which has been successful in planning and implementing programs for the wildlife area. As described in Section 5.0, DWR has recently funded the development of a consensus-seeking IRWMP Subcommittee of the Working Group. The Subcommittee will prioritize and coordinate projects under the YBIP. The Subcommittee is made up of the following participants:

- Yolo Basin Foundation (1 representative)
- DFG -Yolo Bypass Wildlife Area (1 representative)
- DFG Environmental Services / Fisheries Staff (1 representative)
- DWR Division of Environmental Services (1 representative)
- DWR Division of Flood Management (1 representative)
- Local Reclamation District (1 representative)
- Private agricultural landowners (3 representatives)
- Private wetland manager / hunting club landowners (3 representatives)
- California Waterfowl Association (1 representative)
- Ducks Unlimited (1 representative)
- Yolo County (1 representative)

Potential implementation partners and the potentially affected / associated stakeholders related to YBIP concepts include (but are not limited to):

- Implementation Partners
 - Yolo Basin Foundation
 - Yolo Bypass Interagency Working Group
 - DFG -Yolo Bypass Wildlife Area and Regions 2 and 3
 - US Fish and Wildlife Service
 - National Marine Fisheries Service

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Dixon Resource Conservation District

DWR

USACE

RWQCB

CalFed

Sacramento and Yolo Mosquito & Vector Control District

SAFCA

Local Levee and Reclamation Districts

Yolo Bypass private landowners (agricultural and hunting interests)

California Waterfowl Association

Ducks Unlimited

- Affected / Associated Stakeholders

California Waterfowl Association

County of Solano (Putah Sinks & lower Bypass)

County of Yolo

City of Woodland

City of Davis

City of West Sacramento

Ducks Unlimited

UC Davis

LPCCC

Delta Protection Commission

Local Levee and Reclamation Districts

Yolo Basin Foundation

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Bypass agricultural landowners and water districts

Bypass duck clubs

Yolo Audubon

Putah Creek Council

Tuleyome

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Prerequisite Tasks

A number of studies, hydraulic models and investigations have been completed, many of which have continued relevance to components of the YBIP.

Presented in **Table 7-10** is a description of the component actions with an assessment of the project readiness. For most of the actions, planning, feasibility analysis, and design could be completed within the first two years; and implementation can potentially be completed within five years if adequate funding is secured.

Brief descriptions of prerequisite studies and best practice approaches regarding future Bypass actions are presented below. Many of these initial studies and practices would need to take place on private lands and can only be conducted with willing landowners. Pursuit of these studies and practices should be continually communicated with interested and affected stakeholders, preferably through the Yolo Bypass Working Group. The work performed in this regard should be communicated and coordinated with the WRA and the TC.

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1. Map, Survey and Monitor Invasive Plants in the Bypass, and Their Effects on Agriculture, Floodway and Ecosystem Functions

There has not been a comprehensive survey, evaluation, and mapping of the extent and distribution of invasive, non-native plants in the Bypass. These undesirable plants can reduce flood flow capacity, cause local erosion, and displace native plants, fish and wild life. Study results will be used to determine priorities for the eradication or control of the spread of noxious plants, principally false bamboo (Arundo), tamarisk, star thistle, water hyacinth, water primrose, pepperweed (whitetop) and other herbaceous species that harbor mosquito larvae.

2. Perform Aquatic, Wetlands, and Riparian Habitats Assessment

There is a need for a comprehensive survey, ecological evaluation, and mapping of the extent, quality, and distribution of all existing natural habitat types in the Bypass. Study results will be used to determine opportunities for expansion or enhancement of suitable habitat types which are compatible with other Bypass land uses (e.g. agriculture) functions (e.g., flood conveyance), and with statewide

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and regional ecological priorities. Numerous studies have been completed by various agencies and this assessment should use these studies as a starting point.

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Action Program

**Table 7-10 – Yolo Bypass Integrated Project
New Component Actions**

ID	Title	Project Proponents	Geographic Description	Project Readiness
WQ16	Develop Best Management Practices for the Yolo Bypass Regarding Production and Transport of Elemental and Methyl Mercury	CDFG, USGS, YFB	Yolo Bypass	USGS study underway. Additional study proposal is being written for consideration. Other projects may be generated based upon proposal results.
WS22	Colusa Basin Drain Water Supply Project	NCWA, EBMUD, Sacramento County, DU, CUWA, Others	Yolo Bypass, Colusa Basin Drain	Project in conceptual form. Inactive at this time.
FM33	Yolo Bypass Sediment Removal (Note: Title Change)	DWR	Yolo Bypass, Sacramento River	Sediment removal is largely completed. No immediate plans to conduct additional work.
FM39	Yolo Bypass 2-D Hydraulic Model	USACE, DWR, Reclamation Board	Yolo Bypass	Model in production. Expected to be complete soon. No long-term maintenance budget exists.
AR28	Yolo Bypass Fish Habitat Enhancement	DWR, CDFG, USFWS, NMFS	Yolo Bypass from the Fremont Weir to Little Holland Tract	Project ideas in conceptual form.
AR41	Yolo Bypass Wildlife Area Ecosystem Restoration Project	CDFG, DU, CWA, WCB, YBF	Yolo Wildlife Area	CDFG is completing the Wildlife Area Management Plan.
AR47	Yolo Bypass Working Group	YBF	Yolo Bypass	Working Group is funded through the end of 2007 by DWR (Yolo IRWMP) and CDFG (Lower Yolo Bypass Collaborative Process).
R12	Yolo Bypass Wildlife Area Public Access, Outreach, Interpretation Programs	CDFG, Others	Yolo Wildlife Area	CDFG is completing the Wildlife Area Management Plan. Recreation projects will require stakeholder partners to make it happen.
R13	Deep Water Ship Channel Trail Project	DPC, Others	Yolo Bypass, Port of Sacramento Deep Water Ship Channel	Project is in conceptual form.
R31	Davis Wetlands Public Access Improvement Project	City of Davis	Confluence of Willow Slough and Yolo Bypass	Project is in conceptual form.
R32	Levee Public Access Improvements Project	Yolo County	Cache Creek, Yolo Bypass, Putah Creek	Project is in conceptual form.
R33	Public Access Trails Along Existing Storm Water Conveyance Channels Project	City of Davis, Yolo County	Davis	Project is in conceptual form.

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3. Conduct Comprehensive Survey and Needs Assessment of all Recreational Uses Throughout Yolo Bypass

There have been cursory recreational survey efforts of the Yolo Bypass conducted by the Delta Protection Commission and the City of Woodland. The DFG has included extensive recreational opportunities in their draft Land Management Plan for the Yolo Bypass Wildlife Area, the only significant parcel of public lands in the Bypass (with the exception of flood management levees). Beyond those efforts no documentation of the full extent and types of recreational uses, and the extent of public access on publicly owned lands in the Bypass have been conducted. Should additional public lands feasible for public access be identified, this survey would be helpful in the planning and implementation of new, expanded recreational use and facilities. Current use is primarily fishing, waterfowl, pheasant and dove hunting, motorized and non-motorized boating, hiking, bird watching, watchable wildlife programs, and environmental education. However, public access and access facilities are limited, and there is a need to identify potentially suitable access sites and user amenities.

4. Evaluate Causes, Effects, and Management Alternatives of "Nuisance" Flooding in Bypass From Westside Tributaries

The Fremont Weir is overtopped by the Sacramento River on average every 2/3 years, flooding much or all of the Bypass during peak river stages. However, more frequent, smaller, site-specific inundation in the Bypass occurs as a result of high winter flows from Westside tributaries and drainage canals: Knights Landing Ridge Cut, Cache Creek, Willow Slough, and Putah Creek. There is a need to evaluate the causes of nuisance inundation from tributary inflows and the effects of inundation on land in the Bypass to determine if flood flow measures can reduce adverse effects on existing land management.

5. Establish Periodic "State-of-the-Bypass" Summit to Share Information and Assess Bypass Health for all Beneficial Uses

Convene a "State of the Bypass" summit every 3-5 years to share information and assess Bypass uses, ecosystem functions, and resources for all identified beneficial uses. The Working Group could potentially be responsible to convene this effort.

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6. Complete Mercury Methylation Studies of Bypass Management Alternatives; Identify Sources Outside Bypass

The DFG managers of the Yolo Bypass Wildlife Area are cooperating with the Central Valley RWQCB to conduct studies to more fully describe the role of managed wetlands in the methylation of mercury within the 16,000 acre Wildlife Area. The primary sources of mercury in the Sacramento San Joaquin Delta arrives via the Yolo Bypass, originating from mercury-laden sediment in Cache Creek and, to a lesser degree, from the Sacramento River. Study results will be used to begin to develop Best Management Practices (BMPs) to reduce the methylation of mercury in wetlands. There is a large consolidated grant made by the State Water Quality Control Board to the USGS, DFG, and Yolo Basin Foundation to study mercury methylation and demethylation in Yolo Bypass Wildlife Area wetlands and rice fields.

7. Evaluate Feasibility of Regional, Multi-County and Statewide Projects to Modify and Improve Flood Management System

Yolo County, other counties, SAFCA, and other participants have periodically met to consider a range of conceptual alternatives to improve flood management in the greater Sacramento region. Conceptual measures discussed have included modifications to the Bypass system within and upstream of Yolo County, and re-operation of Folsom Dam and the Sacramento Weir. These inter-region collaborations should recommence and continue to develop viable solutions to improve regional flood management.

8. Conduct the Lower Yolo Bypass Collaborative Process

This new stakeholder forum, funded by the DFG and sponsored by the Delta Protection Commission and the Yolo Basin Foundation is focused on specific issues and needs of Bypass lands and Delta Islands at the southern end of the Bypass. The goal of this proposed collaborative process is to develop a consensus based Management Plan for the Lower Yolo Bypass.

9. Evaluate Mosquito Management Needs on a Yolo-Bypass-Wide Scale

Yolo Bypass Wildlife Area and SYMVCD are engaged in an evaluation of specific BMP's to reduce mosquito larvae production within the managed wetlands of the Yolo Bypass Wildlife Area. A similar study and implementation plan has begun for all managed wetlands, drainage networks, idle ground, and agricultural lands in other parts of the low-lying Bypass (e.g., irrigated pasture, rice fields).

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10. Determine Water Quality Suitability Effects on Agriculture and Ecosystem of the Conceptual Proposal to Route Colusa Basin Drain Water Into the Bypass

A concept plan has been raised to consider routing tailwater and flood water from the Colusa Basin Drain as a supplemental water supply within the Bypass. Agricultural tailwater from the Basin may have poor water quality that could be unsuitable for irrigation use in the Bypass. It could also have potentially adverse effects on aquatic and wetlands ecosystems, and could exacerbate mercury methylation processes because of its high mercury content and high levels of suspended organic matter. If the water supply concept advances to a planning feasibility stage, the water quality risks must be evaluated early in the feasibility assessment process. This project was initiated in 2005 but is indefinitely on hold, pending further decisions / prioritization by the project proponents. Subsequent work is expected to be coordinated with and through the Working Group.

Best Practices

1. Coordinate all Public Agency and Private Lands Bypass Projects With the Yolo Bypass Working Group

The Yolo Bypass Working Group has broad stakeholder and agency participation, with credibility and respect established over many years of dialogue and project review. To be successful, future projects and management plans affecting or occurring within the Bypass should be coordinated through meetings of the Working Group. This will ensure that projects and programs are understood and refined in ways that generate public and interagency support, and are more likely to be funded and implemented.

2. Integrate Yolo County HCP/NCCP With Bypass Habitat Enhancements and Bypass Populations of Listed Species

The Yolo County HCP/NCCP emphasizes species conservation dependent on wetland and riparian habitats. These vegetation types are extensive in the Bypass, including both seasonal and perennial wetlands, and there is a potential for expansion of these habitats which support listed species. Integration of the NCCP implementation with the ongoing planning, restoration, and management of ecosystems in the Bypass should continue. This will, ensure that the use of Yolo Bypass lands for NCCP purposes is compatible with other Bypass land uses and functions.

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3. Communicate About the Balance of And Beneficial / Detrimental Impacts of all Land and Water Uses in the Bypass

The Yolo Bypass is a complex system of variously competing or compatible beneficial uses and their associated infrastructures and management procedures. New projects or management programs to benefit one resource may affect the balance of other resource uses, or conflict with the primary function of the Bypass as the floodway routing high flows in the Sacramento River and adjacent tributaries. There is a continual need for transparent, publicly available discussions about this ever changing balance and associated impacts. This function has been and should continue to be fulfilled by the Working Group.

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IA8. Yolo County Sloughs, Canals, and Creeks Integrated Project

An important aspect of this integrated program is the management of storm runoff to minimize adverse impacts, while enhancing storm water quality and wildlife habitat in a manner that is compatible with agricultural practices. It is important to implement this program so that storm runoff is treated in a comprehensive approach throughout Yolo County, with particular attention given to the interface between the agricultural and urban areas.

The waterways that traverse Yolo County are important for conveying storm runoff and irrigation water supply and return flow, as well as providing a habitat corridor for wildlife. A comprehensive assessment of the functional attributes of the various sloughs and waterways is essential to minimize the adverse impacts of storm runoff and maximize the long-term benefits to water quality and wildlife habitat. The sloughs and waterways function as a system and need to be treated accordingly. Sloughs are crossed by federal and state highways, county and private roads, and canals; all of which were designed and constructed at different times with different criteria. Some crossings are clearly impediments to conveying storm runoff and need to be reevaluated.

The regulatory requirements associated with agricultural and urban storm runoff will become increasingly important and the commingling of such water needs to be dealt with in a deliberate and thoughtful manner. The Yolo County HCP/NCCP in preparation at this time can be helpful in facilitating the permitting and environmental review of storm water measures, while improving water quality and wildlife habitat.

Lead Agency, Partners, and Stakeholders

An effective collaborative approach is needed to coordinate and manage the myriad of activities essential for this program to be successfully integrated. As noted under Action FM35, YCFCWCD, Yolo County, and the City of Woodland are interested in pursuing a collaborative effort with respect to storm runoff and flood related activities.

Local agencies or entities involved in implementing the project include the following:

- Yolo County Flood Control & Water Conservation District
- Yolo County (incl. HCP/NCCP coordination)
- City of Davis
- City of Woodland
- City of Winters

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- Yolo County Resource Conservation District
- Natural Resource Conservation District
- Audubon Society
- Landowners adjacent to sloughs, canals, and creeks
- Tulyome

A concerted effort was made by the YCFCWCD in collaboration with environmental, agency, and landowner representatives to address prioritization and integration of the actions within this integrated project. The results of their effort is summarized at the end of this integrated project.

Prerequisite Tasks

There are 26 individual or component actions included in this integrated project. This project covers a wide range of geographic areas throughout the western portion of Yolo County. Due to the size of the geographic area, the project includes a wide variety of physical and hydrologic conditions and waterways, complicating the organization and management of implementation activities. Below are tasks aimed at initiating orderly steps toward implementation. **Figure 7-11** is a matrix showing the relationship between these initial tasks and the component actions. **Figure 7-12** is a general schedule and budget for performing these initial tasks.

1. Establish a Yolo County Watershed Coordinating Committee

Western Yolo County is a complex network of waterways requiring a great deal of coordination among the various agencies, organizations, and landowners. This coordination is essential in effectively addressing the management of storm runoff from the standpoint of flooding, water quality, and wildlife habitat.

2. Update and Develop County-City Drainage Criteria

Currently there is no drainage manual or standards available to provide consistency in the design of facilities to handle storm runoff in Yolo County. Consistency is needed in the criteria and methodology applied within the County and urban areas to address existing problems, and to not adversely impact areas while infrastructure is improved or replaced over time.

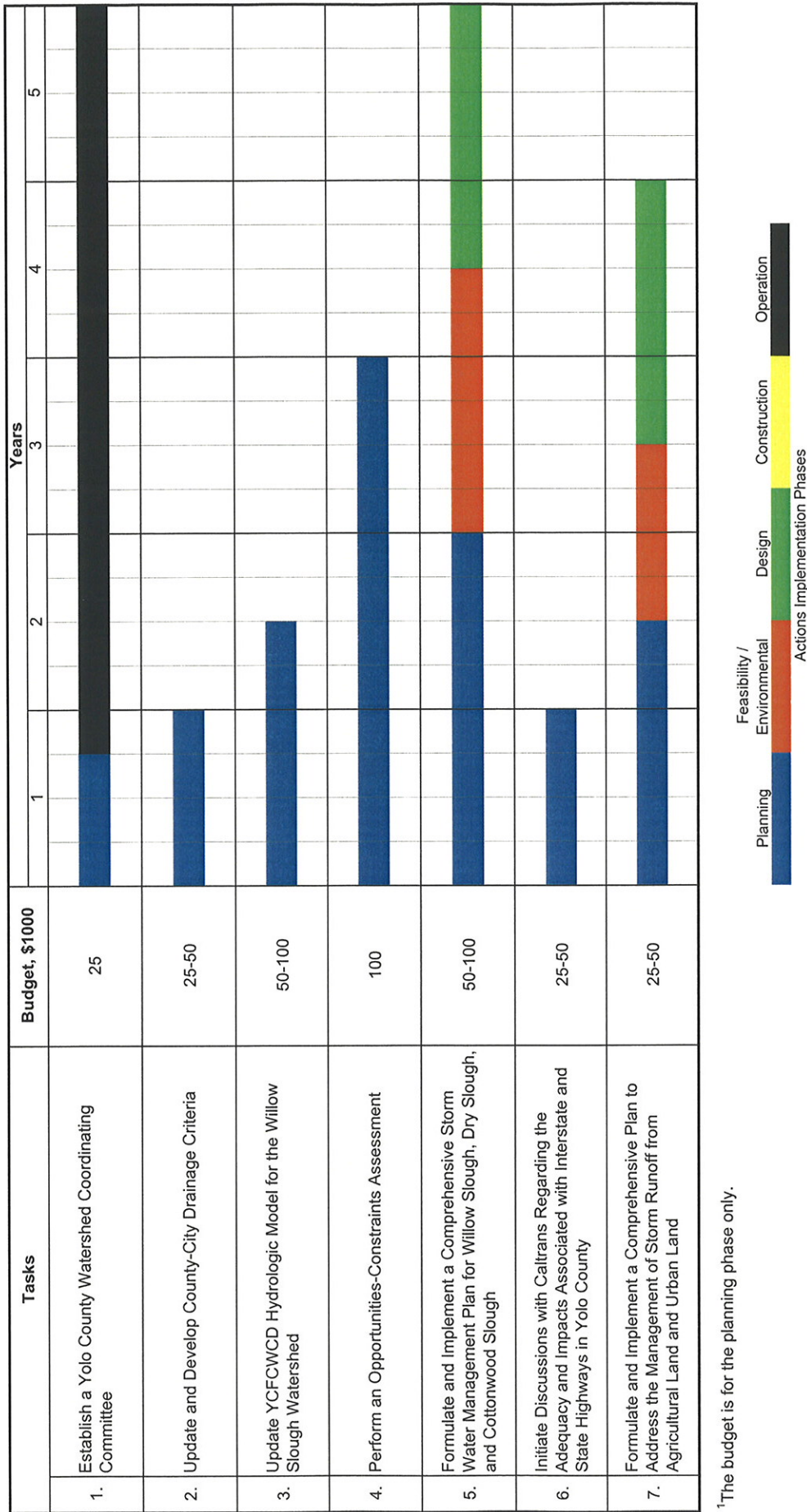


FIGURE 7-11
YOLO COUNTY IRWMP
YOLO COUNTY SLOUGHS, CANALS, AND CREEKS INTEGRATED PROJECT
INTERRELATIONSHIP BETWEEN PREREQUISITE TASKS AND COMPONENT ACTIONS

TASKS	COMPONENT ACTIONS																										
	Regional Irrigation / Tailwater Recovery Systems	YFCWCD Distribution System Canal Extensions	Madison Storm Drainage Flood Management Project	Esparto Storm Drainage Flood Management Project	Caltrans Highways Hydraulic Impact Assessment Project	County Roadways Hydraulic Impact Assessment Program	Cities-County Storm Drainage Update Program	Watershed Management Program	Willow Slough Levee Improvement Project	Creation of Flood Management Division or Entity	Small Sloughs and Creeks Invasive Vegetation Removal Program	Regional Irrigation Tailwater Recovery Systems Program	Agricultural/Urban Storm Runoff Assessment Program	Ag Waiver Program	Willow Slough Bypass Environmental Enhancement Project	Demonstration Farm Project	Environmental Enhancement of Watersheds Project	Sloughs and Waterways Environmental Enhancements Program	Agricultural Prains and Sloughs Riparian Habitat Enhancement Program	South Fork Willow Slough Riparian Restoration and Levee Seiback Project	Willow Slough Habitat Enhancement Program	Chickafominy Slough Riparian Restoration and Levee Seiback Project	Cottonwood Slough Riparian Restoration and Levee Seiback Project	Small Sloughs Revegetation Project	Non-Native Invasive Plant Species Removal Program	Canal Bank Habitat and Maintenance Program	
1. Establish a Yolo County Watershed Coordinating Committee	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2. Update and Develop County-City Drainage Criteria		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3. Update YFCWCD Hydrologic Model for the Willow Slough Watershed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4. Perform an Opportunities-Constraints Assessment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5. Formulate and Implement a Comprehensive Storm Water Management Plan for Willow Slough, Dry Slough, and Cottonwood Slough	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6. Initiate Discussions with Caltrans Regarding the Adequacy and Impacts Associated with Interstate and State Highways in Yolo County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7. Formulate and implement a Comprehensive Plan to Address the Management of Storm Runoff From Agricultural Land and Urban Land	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



FIGURE 7-12
YOLO COUNTY IRWMP
YOLO COUNTY SLOUGHS, CANALS, AND CREEKS INTEGRATED PROJECT
PREREQUISITE TASKS - SCHEDULE AND BUDGET¹



¹The budget is for the planning phase only.

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3. Update the YCFCWCD Hydrologic Model for the Willow Slough Watershed

The YCFCWCD developed a hydrologic model for the Willow Slough watershed in 1993. The model has been utilized by FEMA for performing flood insurance studies and by other entities for a variety of storm drainage studies. This model should be updated with new topographic mapping and updated rainfall data and used as the basis for evaluating and modifying waterways to accommodate storm runoff while enhancing wildlife habitat.

4. Perform an Opportunities-Constraints Assessment

An inventory and assessment of the principal sloughs, canals, and creeks with respect to flooding, water quality, and wildlife habitat is an essential first step. Consideration may be given to first directing this effort to the Willow Slough watershed where some planning has already been performed.

5. Develop Storm Drainage Master Plans for the Unincorporated Communities in the County Including Esparto, Madison, and Knights Landing

On a preliminary basis, it appears the Yolo County General Plan Update may include provision for some additional growth for the respective communities. These communities currently have problems with storm drainage that could be exacerbated with additional growth if not properly planned. It would be beneficial to have completed Task 2 and Task 3 (in relation to Esparto and Madison) at the time such efforts are implemented.

6. Formulate and Implement a Comprehensive Storm Water Management Plan for Willow Slough, Dry Slough, and Cottonwood Slough

The lands through which all sloughs travel are generally in private ownership. Accordingly, it is important that the landowners be engaged early in any effort to modify the water regime, channel capacity, or habitat values. Cooperation of the landowners will be essential to performing an opportunities and constraints assessment that provides basic information from which to formulate a comprehensive plan to manage storm water, irrigation/drainage water, water quality, and enhance wildlife habitat.

It would also be important to have completed Tasks 2 and 3 and obtain improved topographic mapping available from the Foundational Action FA8.

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7. Initiate Discussions With Caltrans Regarding the Adequacy and Impacts Associated With Interstate and State Highways in Yolo County

The hydraulic capacity of the drainage structures constructed for handling cross drainage at interstate and state highways in Yolo County are inadequate and should be addressed as part of a comprehensive review of flooding in the county.

8. Formulate and Implement a Comprehensive Plan to Address the Management of Storm Runoff From Agricultural and Urban Land

The regulations related to water quality are becoming increasingly stringent for both agricultural and urban communities. Measures should be implemented to mitigate the impacts of water from the various landscapes exacerbating the management and regulatory compliance for either or both sectors. This situation should be evaluated for both the cities and unincorporated communities in Yolo County.

Results of Lead Partners / Team Prioritization / Integration Effort

The information presented herein is largely from a memorandum from the YCFCWCD to the WRA dated February 20, 2007, in response to a request from the WRA on November 21, 2006, to address prioritization and integration for this integrated project.

An ad hoc committee was formed comprised of the YCFCWCD and a small group of environmental, resource agency, and landowner representatives. This committee met on several occasions over the last few months to discuss these issues. It should be noted that this group, and specifically the YCFCWCD as the lead implementing agency, considers this work to be only the beginning point of an ongoing collaborative process of prioritization, integration, and implementation as outlined in this IRWMP.

Consolidation of Actions

It became clear to the committee that there was much overlap in description and intent among the potential component actions described in Section 5.4.10. Specifically, the committee felt that the following actions were all essentially trying to accomplish the same thing.

- Environmental Enhancement of Waterways Project (AR6)
- Sloughs and Water ways Environmental Enhancement Program (AR9)
- Agricultural Drains and Sloughs Riparian Habitat Enhancement Program (AR11)
- Small Sloughs Revegetation Project (AR25)
- Canal Bank Habitat and maintenance Program (AR36)

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- Small Sloughs and Creeks Invasive Vegetation Removal Program (FM38), and
- Non-native, Invasive Plant Species Removal Program (AR30)

The committee recommends that the basic intentions of these seven actions be written up as one comprehensive “small waterways” improvement and maintenance action that would describe the different flood control, water conveyance and habitat enhancement values that future activities would attempt to accomplish.

Grouping of Actions and Prioritization

In order to consider an appropriate approach to prioritization, integration and implementation the committee grouped the actions into the three functional categories. These groupings are shown below with their included actions.

Organizational

- Creation of Flood Management Division or Entity (FM35)
- Watershed Management Program (FM20)
- Ag Waiver Program (WQ14)

Foundational & Planning

- Caltrans Highways Hydraulic Impact Assessment Program (FM11)
- County Roads Hydraulic Capacity Assessment Program (FM12)
- Cities-County Storm Drainage Criteria Update Program (FM15)
- Agricultural/Urban Storm Runoff Assessment Program (WQ4)
- Madison Storm Drainage/Flood Management Project (FM9)
- Esparto Storm Drainage/Flood Management Project (FM10)

On-the-Ground

- The small waterways action as described above (Consolidation of Actions)
- Willow Levee Improvement Project (FM26)
- Willow Slough Bypass Environmental Enhancement Project (WQ7)

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- South Fork Willow Slough Riparian Restoration and Levee Setback Project (AR13)
- Chickahominy Slough Riparian Restoration and Levee Setback Project (AR19)
- Cottonwood Slough Riparian Restoration and Levee Setback Project (AR20)
- Willow Slough Habitat Enhancement Program (AR14)
- Regional Irrigation Tailwater Recovery Systems Program (WS17)
- YCFCWCD Distribution System Canal Extensions Project (WS24)

These groupings provided the committee with a logical context within which to discuss prioritization, integration and implementation. For instance, there needs to be an ongoing, sustainable framework to ensure that as projects are proposed for implementation, they are treated in a consistent manner including the input and review of all interested and affected parties. This led the committee to believe that its first priority should be to support a form of organizational structure such as that proposed in FM35 (Creation of Flood Management Division or Entity).

The committee did not consider prioritizing the activities that are grouped under the “foundational and planning” category since it felt that these actions will be developed by various entities that have overlying jurisdiction and interest in seeing them move forward. It is important these foundational and planning actions be coordinated and tracked through the entity or division to be established as part of FM35.

Many of the on-the-ground actions are in various stages of development. In fact, implementation of all of them appears to be worthwhile since they are projects potentially supported by this integrated program and this IRWMP. Actual prioritization and implementation will depend primarily on the “readiness” of each individual project to proceed. This “readiness” in turn depends on a variety of factors including landowner cooperation, design, funding and permitting.

Integration

By their very nature, the waterways (sloughs, canals and creeks) of Yolo County are integrated across multiple factors described in this IRWMP. For instance, they already provide multiple flood, water supply, water quality, environmental and recreational benefits. While most of the actions described in this integrated project could be coupled with other integrated projects that are described in the draft IRWMP, they also stand on their own as a single integrated project

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Monitoring and Measurement

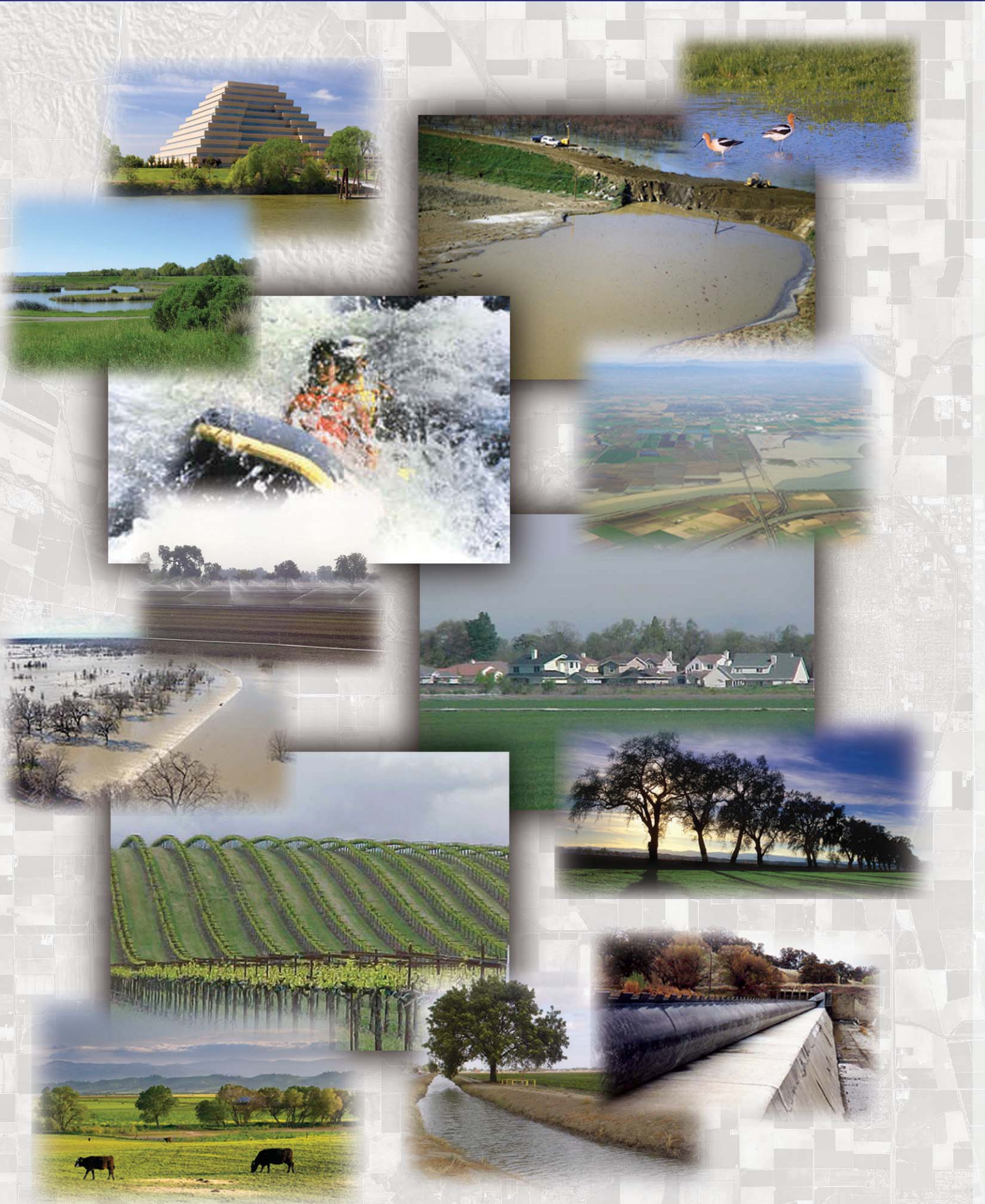
The committee discussed and recommends to the WRA that a monitoring and measurement element be added to the program, and should be required of any project being endorsed by this IRWMP. The committee recognizes that the foundational actions described in the draft IRWMP contain some monitoring components. However, in order to gain maximum knowledge about the appropriateness and efficacy of future actions, the committee recommends that each project contain monitoring, analysis and reporting components.

Implementation

Much work related to the improvement and management of sloughs, canals and creeks is already in progress. Various groups such as the Yolo County Resource Conservation District, Audubon California, Yolo County Department of Public Works and the YCFCWCD are involved in planning and implementation of various projects and programs. The YCFCWCD's role as lead agency for the WRA's IRWMP Sloughs, Canals, and Creeks Integrated Project is seen as limited to the encouragement and coordination of various proposed projects on behalf of various implementing groups. In other words, there is plenty of needed work currently underway, and this IRWMP process should only enhance and integrate, but not hinder, these efforts.

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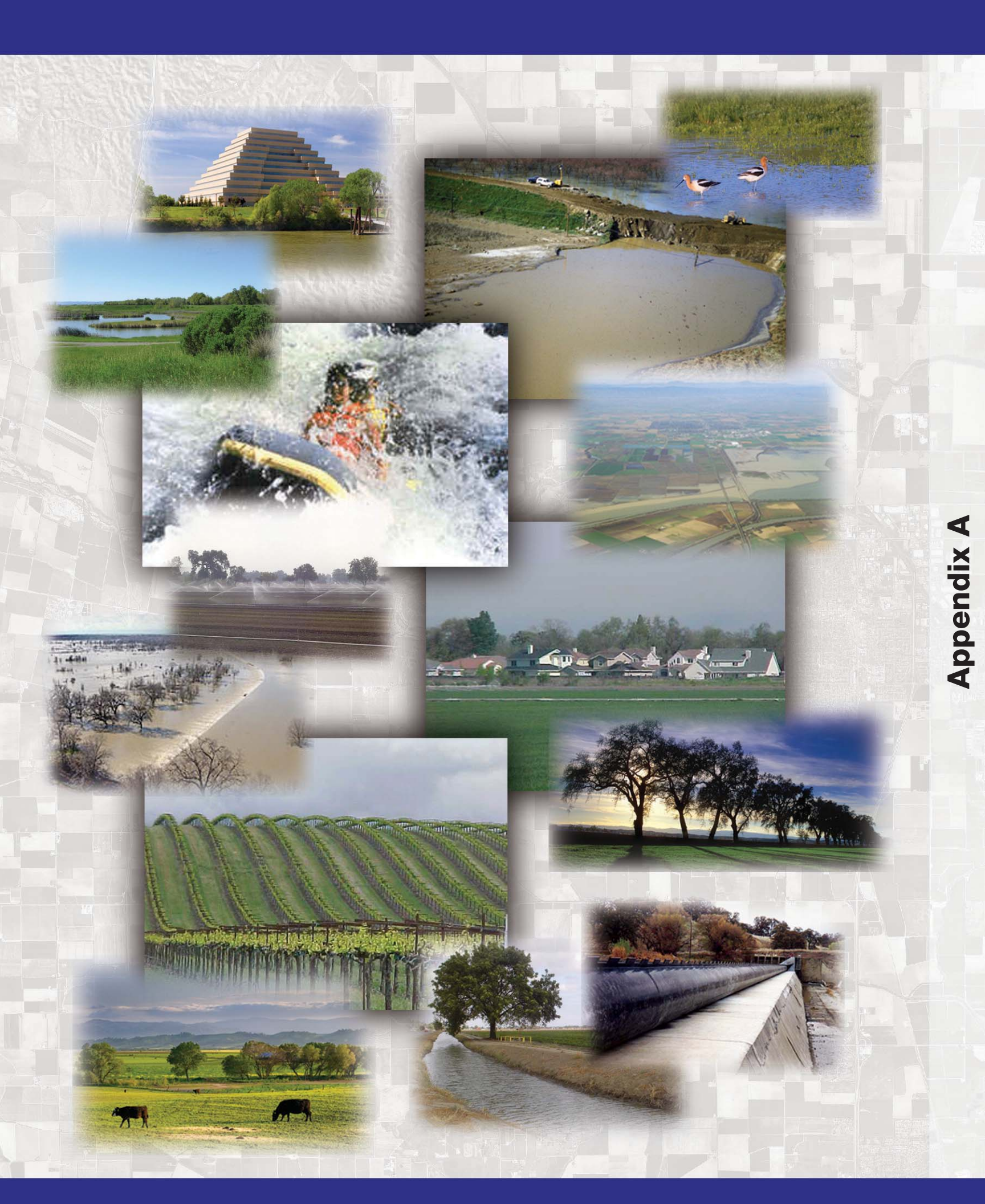
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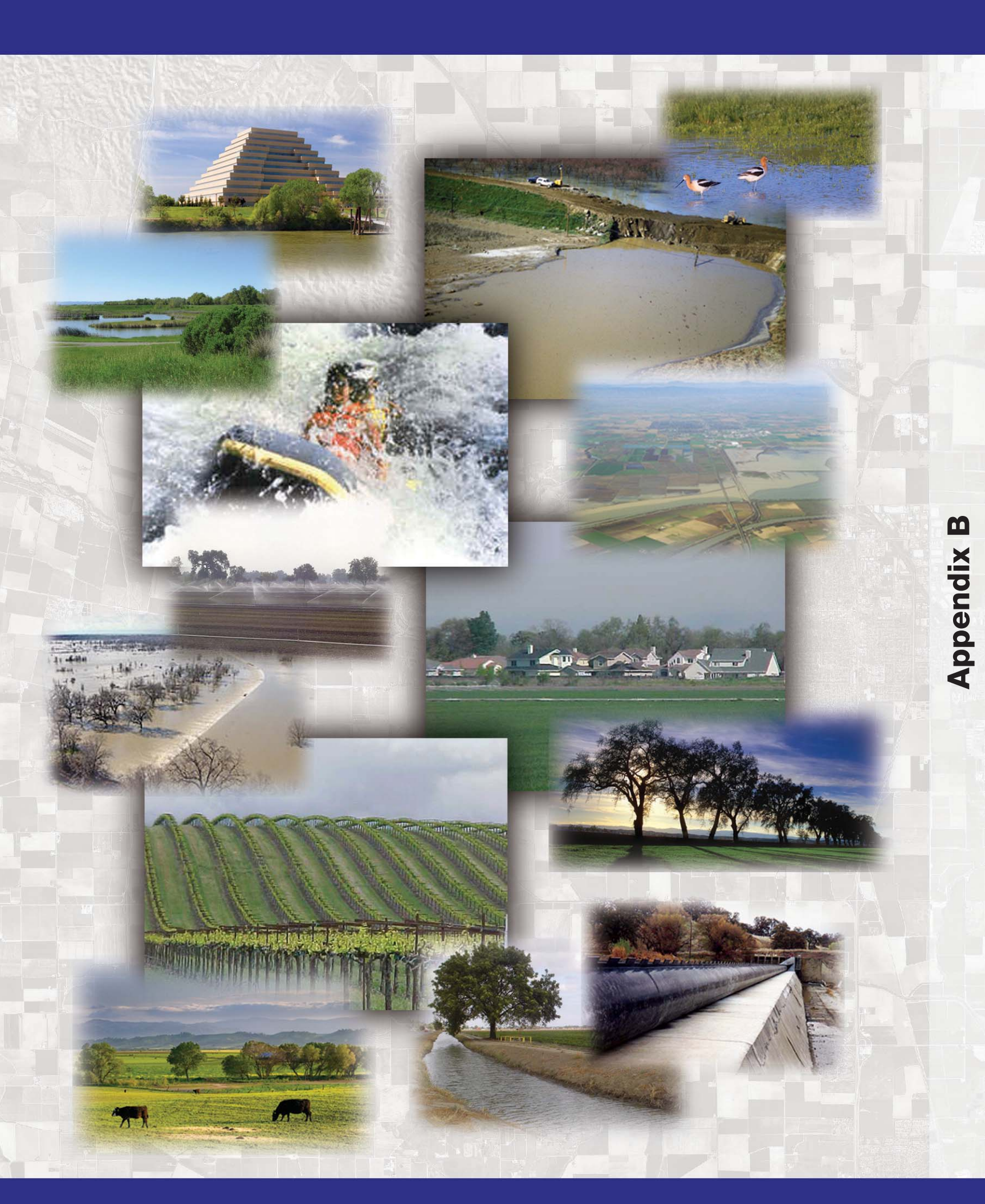
Appendix A

APPENDIX A

Background Data and Information

Available on CD and WRA's Website:

http://www.yolowra.org/irwmp_documents_a.html



Appendix B

Appendix B

Alternate Prioritization Method

The following screening and prioritization method was developed for the Yolo County IRWMP, but was not considered a suitable method, because the actions were not sufficiently developed.

B.1 Screening Method

Step 1. Action Screening

Individual actions are first screened using the following screening criteria that will be applied sequentially:

1. The action is a project, program, or policy.

If the action is *not* a project, program, or policy (e.g., a study or resource model) it should be screened out, incorporated as a prerequisite to or part of a project or program, or rephrased so it will be a project, program, or policy, and then retained.

2. The action addresses one of the water-related issues articulated by the WRA.

If the action does *not* address issues articulated by the WRA it will not be addressed in the IRWMP. (Note: The action has to be technically feasible to meet this criterion. The determination of feasibility may only be possible with additional information. Actions of undetermined feasibility will be noted as such.)

3. The action is an individual action and not an integrated action.

If the action is *not* an individual action, but instead is an integrated action that addresses issues in multiple water resource management areas, the integrated action should be decomposed into individual actions.

4. The action is a regulatory mandate.

WRA member agencies have a regulatory mandate to implement the action (i.e., implementation is non-discretionary under federal, state, or local laws, regulations, or policies).

All listed actions which have been retained under the screening criteria will move to Step 2.

Step 1 Work Product – An *unranked* list and matrix of individual actions, each with a brief description, indicating the issue or issues being addressed within one or more resource management categories. The list will also highlight those actions which are non-discretionary.

B.2 Prioritization Method

Step 2. Prioritize Individual Actions

Each action remaining after Step 1 will be evaluated, scored, and ranked numerically in relative order using each of the **priority criterion** described below. Numerical ranking would be assigned under each criterion. Scores range from four points for the greatest assumed benefit to one point for the least benefit, except for the first criterion which is numerically greater because of its importance in the decision-making process.

The methodology for scoring is tentatively assumed to be initiated by the consultant team (in consultation with other team professionals), and then presented for the consideration and refinement by the WRA TC members. Each team leader will initially score all the actions based on their personal understanding of action benefits and consequences. Next, an expanded team meeting will be held to compare and contrast each team leader's scoring results. Based on the discussion, a consensus score will be arrived at and applied to actions under each criterion. The results will next be presented to a special working meeting of the WRA TC.

1. Responsiveness to issues.

Definition: The degree by which the action addresses issues identified by the WRA.

Score (This criteria is weighted at twice the numerical value of other criteria.):

- 8– Has an exceptional response toward resolving the issues.
- 6– Has a potential direct, positive effect toward resolving the issues.
- 4– Has a somewhat positive effect toward resolving the issues.
- 2– Responds poorly, or is neutral to the issues.

2. Public and agency support.

Definition: The level of anticipated or known public support for the action. Public support of individual actions may change as more information becomes available, and where an action is combined under integrated action scenarios. (The application of this criterion could be deferred to Step 5.)

Score:

- 4– The action has or likely will have broad public support.
- 3– The action has or likely will have moderate public support.
- 2– The action has or likely will have narrow public support.
- 1– The action has or likely will not have public support.

3. Efficiency.

Definition: The anticipated level of effect in addressing issues relative to the predicted level of required resources to reach that effect (i.e., the amount of resource “bang for the buck”).

Score:

- 4– The action is highly efficient in addressing the issues.
- 3– The action is moderately efficient in addressing the issues.
- 2– The action has some efficiency in addressing the issues, or there is currently no basis to form a judgment about efficiency.
- 1– The action is inefficient in addressing the issues. (The implication is that resources may be wasted by implementing the action.)

4. Conflict resolution.

Definition: The level to which the action will likely contribute to resolving water resource allocation and management conflicts. Some individual actions may rank lower in this category unless the action is combined into integrated actions, or follows a prerequisite action.

Score:

- 4– The action makes good progress toward resolving conflicts.
- 3– The action makes some progress toward resolving conflicts.
- 2– The action has no influence on conflicts.
- 1– The action has the potential to create conflicts.

5. Potential for adverse environmental consequences.

Definition: The potential to create adverse environmental consequences, and the relative magnitude of anticipated or potential adverse consequences.

Score:

- 4– The action has no adverse environmental consequences or is beneficial.
- 3– The action has minor environmental consequences and benefits.
- 2– The action has moderate adverse environmental consequences that can be mitigated.
- 1– The action has substantial adverse environmental effects that cannot be mitigated.

Once individual actions have been ranked according to the above five priority criteria, they will be evaluated in Step 3 for their potential to be combined with other individual actions across all five water resource management categories.

Step 2 Work Product – A *ranked* list and matrix of individual actions and the issues under each resource management category(s) the action benefits. Ranking, based upon the five criteria described above, will be presented in two ways:

- A list of actions indicating the numerical *ranking within each of the five criteria*.
- A *composite ranking order* based upon the numerical total of all six ranking results of individual actions. Each criterion will be applied equally, with the exception of the criterion ‘Responsiveness to Issues’ which is weighted at double the value of other criteria.

Step 3. Prioritize Integrated Actions

Actions addressing issues from two or more water resource management categories will be combined to create integrated actions. Similarly, actions within a single resource management category may be combined to create an integrated action. Integrated actions are mutually compatible packages of actions where one or more high-priority actions define or dominate the primary objectives of a packaged set of actions, along with other compatible individual actions. However, some individual actions may have compelling reasons to remain as stand-alone projects, and not be integrated with other actions

One or more of several criteria may be used to combine individual actions into multi-objective integrated actions, including the following:

1. Geographic Relatedness – Actions that would be implemented in the same area, in close proximity to each other, or in some other spatially related way, e.g., along the same water way).
2. Complementary – Actions that would more likely address WRA articulated issues in combination than individually.
3. Increase in Public and Agency Support – Actions that in combination would result in greater public support than individually, e.g., individual actions may each be supported by different segments of the public.
4. Efficiency – Actions that would use fewer resources when implemented in combination than individually (this criterion can be related to the first two).
5. Reduction of Conflict – Actions that in combination would result in less conflict than each individually, e.g., individual actions may each benefit opposing interests.
6. Reduction of Adverse Impacts – Actions that would in combination have fewer or smaller adverse impacts than individually, e.g., one action may compensate for the impacts of another, or result in a net benefit.

7. Higher Likelihood of Funding – Actions that in combination would have a higher likelihood to be funded than individually, e.g., the integrated action may fit the selection criteria for Proposition 50 or other grant programs better than the component individual actions.
8. Complexity – An integrated suite of actions could become unwieldy, or trigger a complex and time-consuming web of regulatory compliance, if too many actions define a single project or program.

Integrated actions will be prioritized by comparing their relative merits using the following five considerations. Note that the last four considerations listed below for prioritizing integrated actions are defined under Step 2 where they are used as numerical ranking criteria applied to individual actions.

1. Responsiveness to objectives for water management in Yolo County.

Definition: The degree by which an integrated action package addresses the objectives for water management identified for the Yolo County IRWMP (may include overlap with other planned or existing integrated actions). This consideration also includes the degree to which integrated actions magnify the effect or likely success of individual actions.

2. Public and agency support.

Public and agency support may be elevated for effective combinations of integrated actions, such that some individual actions with little visibility or relatively low ranking may receive greater support.

3. Efficiency.

An integrated action, when integrated with several compatible and symbiotic actions, may enhance the overall effectiveness of the entire suite of projects, programs, or policies.

4. Conflict resolution.

Integrated actions may be more successful at resolving resource conflicts associated with a low level of support for some individual actions proposed in isolation from more desirable or palatable integrated actions.

5. Potential for adverse environmental consequences.

Integrated actions may substantially reduce the potential of one or more individual actions, if implemented alone, to cause adverse environmental consequences.

Other factors may influence the judgment of the WRA Technical Committee to determine a final draft list of action priorities to be presented to the public in Step 4. Factors influencing draft priority rankings, in addition to the five most important considerations described above, may include the timeliness of an action, or the inclusion of one or more non-discretionary actions with a near-term completion mandate under federal, state, or local regulations.

Step 3 Work Product – *A prioritized list and descriptions of integrated actions.* A draft report suitable for public dissemination will be prepared, including:

- Summary descriptions of each proposed integrated action, using a standardized format in one to three pages.
- A prioritized list and matrix of the integrated actions, indicating the issues under each resource management category the integrated action benefits.
- A summary description of the methodology and rationale for the steps (Steps 1-3) used to rank and prioritize individual and integrated actions.

Step 4. Public and Agency Review of Actions and Priority Criteria

The results of Steps 1-3 above will represent a thoughtful, defensible set of draft recommendations for the region and provide a description of the actions, determine action priority rankings, and a list of integrated actions. Step 4 (approximately March 2006) will be the first opportunity for the general public and other interested agencies to review the recommendations from the WRA Technical Committee, and to provide comments. Public participation in Step 4 will include one or more informational workshops, notification and electronic version of the draft document on WRA and member agency websites, announcements in local publications of how to acquire a copy of the draft report, and e-mail distribution to other interested and permitting agencies. A suitable span of time and deadline for submitting written comments will be announced. Results of public and agency comments and suggested changes will be summarized in a report format.

Step 4 Work Product(s) – *A summary report of the results of public and agency input and participation during the Step 4 process.*

Step 5. Re-evaluation of Integrated Actions and Priority Criteria

The consultant team will, as needed, prepare a revised set of priority and ranking criteria and other methodology, a revised list and descriptions of individual and integrated actions, and incorporate any appropriate new actions from the public and agency comments. The WRA Technical Committee will consider and revise the consultants' recommendations, and refine the priority ranking and descriptions of integrated action packages for inclusion in the IRWMP document.

Step 5 Work Product – *A revised version of the report work product listed under Step 3.*

Step 6. Select Actions for Investigation

Step 6 represents a point in the IRWMP planning process where the WRA Technical Committee would allocate a part of the planning budget to investigate selected actions with the purpose of developing a detailed definition of the action, its accomplishments, cost, implementing agency(s), and implementation plan. To assist the Technical Committee in making this determination, both individual and integrated actions would be assigned to a time frame for potential implementation. Time frames fall under three categories:

- Near-Term: Implementation within 1-3 years.
- Mid-Term: Implementation within 4-6 years.
- Longer-Term: Implementation likely beyond 6 years.

The basis for assigning relative time frames will consider these questions:

1. Does an action satisfy essential public safety needs?
2. Are funding sources already identified and likely to be acquired?
3. What are the level of complexity and time requirements for environmental documentation, public comment, and permit approvals?
4. Does the action entail partnerships and formal inter-agency agreements that require a due process that controls the schedule for implementation?
5. What is the level of urgency to implement non-discretionary, mandated actions?
6. Is the likelihood of success or practicality of an action affected by how soon the action can be implemented?
7. Is the action understood and supported by a significant component of the general public and key stakeholders?

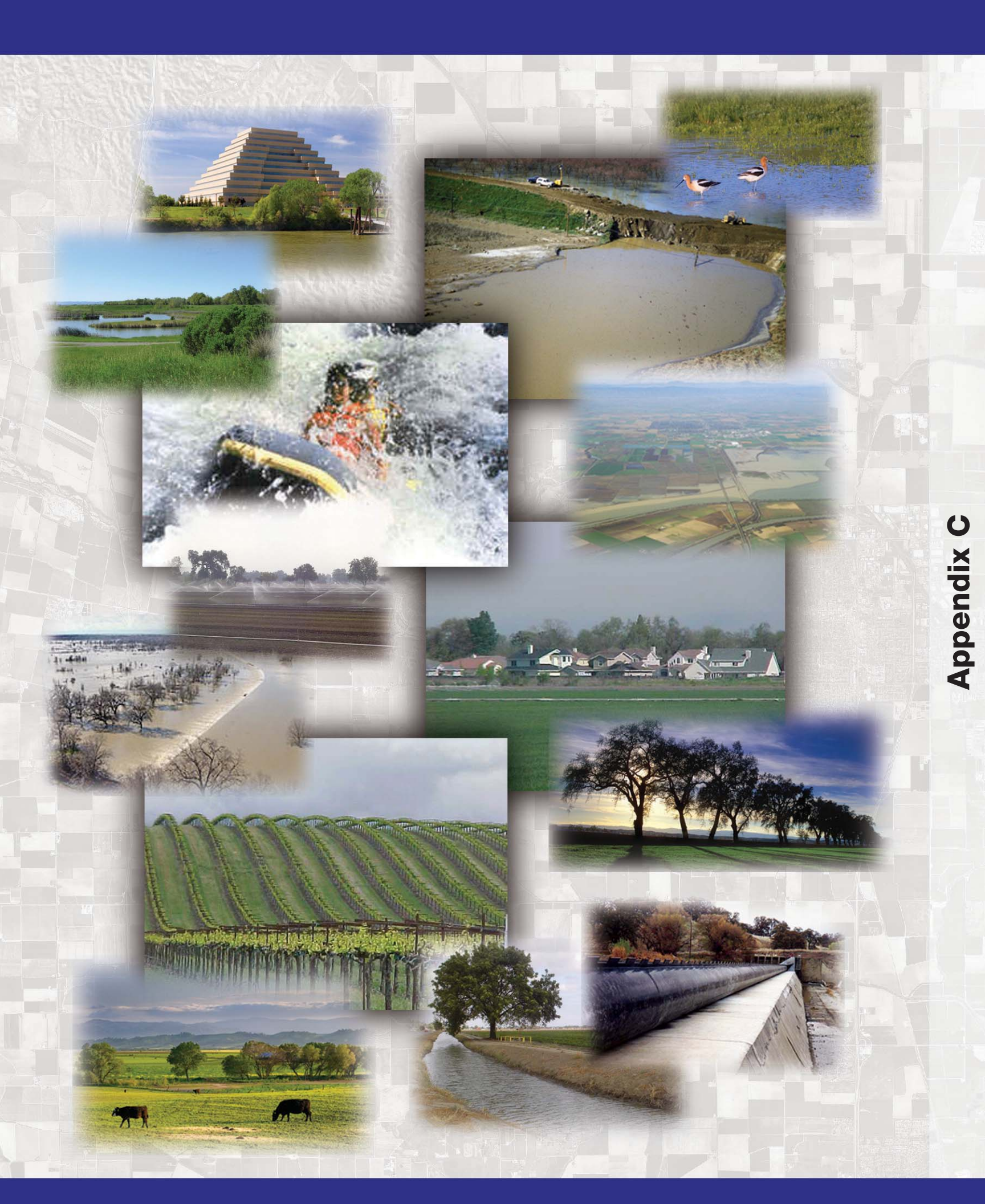
The option exists for an agency acting alone, or in partnership with other agencies, to augment the funding available through the IRWMP planning grant to advance the development of a particular action or actions to improve the prospects for earlier funding through various grant programs.

Step 6 Work Product – A report in electronic form with the following contents:

- *Lists of individual and/or integrated actions proposed under each of the time frames* and the basic rationale for how the recommended timeframe was determined.

- Recommendations for *sponsoring and participating supporting agencies* for each individual and integrated action.
- List of the actions with the best *prospects for funding under existing funding programs*.

These work products constitute the nucleus of an implementation strategy for integrated actions under the overall watershed plan.



Appendix C

APPENDIX C

Model Policies for Water Resources for the Yolo County General Plan

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Fall 2006

This document provides model water-related policies designed for consideration as part of Yolo County's General Plan Update. The Water Resources Association of Yolo County (WRA) will include these policies as recommendations in the Yolo County Integrated Regional Water Management Plan (IRWMP). The model policies are designed to address key water issues in Yolo County, although they are also potentially applicable to the cities and their interests. The WRA identified these water issues as part of the IRWMP, which the WRA will complete in late 2006.

These policies are working suggestions for further consideration. The WRA Board will be asked to review and comment on them, and any changes or additions will be incorporated into the policies as recommendations in the IRWMP. The policies will also be forwarded to Yolo County and their General Plan consultants for consideration as part of Yolo County's General Plan Update process; which will involve considerable citizen review and input. Yolo County is under no obligation to accept the model recommendations, but the WRA hopes they will consider them seriously.

The Yolo County General Plan Update scope of work calls for clearly articulated goals that the County is attempting to attain, objectives to guide county actions, policies and actions (or implementation guidelines) that the county will implement to achieve its objectives. The number of actions will be limited to reflect available staff resources. This draft document does contain goals, objectives and policies formatted in such a way as to be readily incorporated into the draft General Plan. But, it does not call out specific implementation measures or actions for each policy. The WRA can develop detailed implementation measures once Yolo County has decided which policies they will use and which might be changed or discarded.

The policies are categorized into the following topics that the Water Resources Association is using for the IRWMP: water supply and drought preparedness, water quality, flood hazard reduction and storm drainage, aquatic and riparian ecosystem enhancement, and water-related recreation. It is assumed that the WRA will coordinate implementation of any policies that include multiple agencies.

These policies may find their way into either the Conservation Element of the General Plan or other elements as appropriate (such as Land Use, Public Facilities, or Community Safety). The County has chosen not to do a separate Water Element, but that is also an option. Some

of these policies might also end up in supporting documents like the IRWMP, Facilities Master Plans, or other planning documents.

WATER SUPPLY AND DROUGHT PREPAREDNESS

Findings

WS-F-1: Urban areas, agriculture, and the environment in Yolo County depend on a reliable water supply, a combination of both groundwater and surface water.

WS-F-2: Surface water sources in Yolo County include the Sacramento River, Colusa Basin Drain, Putah Creek, Cache Creek, Yolo Bypass, Tule Canal, Willow Slough, and other small sloughs and waterways.

WS-F-3: All urban water users, except West Sacramento, rely on groundwater as their primary source of water supply. Farmers rely on groundwater for approximately 40% of their supply in a normal year, but rely more heavily on groundwater during drought years.

WS-F-4: Future urban population growth will increase water supply needs and demands from cities, unincorporated communities, and UC Davis. Agricultural water demand is expected to remain fairly stable, but may decline slightly depending on the impact of land conservation and conversion.

Issues

WS-I-1: Increasingly stringent water quality regulations (see water quality section)

WS-I-2: Availability of adequate water supplies during severe drought conditions

WS-I-3: Subsidence problems as a result of groundwater overdraft

WS-I-4: Cost of providing water and wastewater service is increasing and expected to continue

WS-I-5: Regulatory compliance is increasingly complex and expensive

Goals

- To provide a reliable, sustainable and high quality water supply for the county to support existing and planned beneficial uses including urban, agricultural, environmental, recreational and other appropriate uses.

Objectives

- To provide reliable and sustainable surface water from a variety of sources sufficient to serve urban, agricultural, environmental and recreational uses (as planned by the county's water purveyors and consistent with the IRWMP) in normal, above normal and prolonged drought periods, that is protective of natural resources and surface water flows.

- To manage the county's ground water resources on a sustainable yield basis that provides water purveyors and individual users with reliable, high quality ground water to serve urban, agricultural, environmental and other uses during normal, above normal and prolonged drought periods.
- To develop conjunctive use and ground water protection programs within the next ten years, consistent with the IRWMP and the needs of water purveyors, that maximizes the efficiency and value of the county's surface and ground waters.
- To work with the area's water purveyors within the next five years to develop state-of-the-art urban and agricultural water use efficiency programs that meet statewide guidelines and provide substantial and measurable water use reductions throughout the county.

Policies

Water Supply Reliability

WS-P-1: For residential development of five houses or more or non-residential development of comparable water demand, Yolo County shall make a finding, based on information from water purveyors that a long-term, reliable water supply for planned, new and existing users, including normal, above normal and drought conditions.

WS-P-2: Through the WRA, collect and maintain data on water supplies and water quality to support urban, environmental, and agricultural uses.

WS-P-3: Encourage the integration of land use planning and water resources planning. Work cooperatively with all water suppliers in the County and with other land use planning agencies to share data on water supply availability, land use, and population projections. Ensure that each water purveyor's urban water management plan is in the possession of relevant land use agencies. Ensure that the land use map and relevant general plan elements of the County and cities are in the possession of water purveyors. Encourage all land use jurisdictions to keep an up to date record of proposed, pending, and approved development activity for use in CEQA cumulative analyses and water supply assessments.

WS-P-4: Through the WRA, work with the various water purveyors in the County to ensure adequate drought protection and contingency plans for single and multiple dry years to improve water supply reliability. examine the drought planning of each purveyor, and explore ways to collaborate and share sources of water during extended droughts.

WS-P-5: Consistent with Yolo County's groundwater ordinance, ensure that new proposals for surface or groundwater exports to locations outside Yolo County do not jeopardize a high quality water supply for current and planned water users and the environment.

WS-P-6: Yolo County should encourage new development and redevelopment to use reclaimed wastewater, where available, to augment water supplies and to conserve potable water for domestic purposes.

Groundwater

WS-P-7: Consistent with the Yolo County Groundwater Management Plan, require public water suppliers and other water users which use or rely upon groundwater sources to monitor and report groundwater levels and yields, where appropriate, to manage long term overdraft, water quality degradation, land subsidence and other potential ground water problems. Provide incentives to assist water suppliers and water users with this effort.

WS-P-8: In areas where ground water use is not sustainable (either for supply or quality reasons), work with public and private water purveyors to consider substituting surface water sources for ground water where this can be done economically, and without environmental damage.

WS-P-9: Support educational programs to inform agencies and stakeholders about groundwater best management practices in the areas of efficient water use, water conservation, ground water quality, recharge, well abandonment and replacement.

WS-P-10: Ensure environmental and project review procedures demonstrate adequate long-term and sustainable groundwater supplies for discretionary projects. Require findings backed up with substantial data that the groundwater supplies and surface flow will not be adversely impacted, without appropriate mitigation, by the project and groundwater overdraft, land subsidence or water quality degradation will not occur. Procedures should be flexible to consider the expense of such studies in relation to size and scale of the proposed project.

WS-P-11: Maintain agricultural zoning (or natural area or open space zoning), and existing agricultural or habitat/recreational uses, in primary aquifer recharge areas identified as having a moderate to very high recharge capability. Applications for rezoning or general plan amendment to uses other than agricultural or open space/habitat within or near ground water recharge capability boundaries shall supply hydrologic data pertinent to recharge capability before the rezone application shall be considered complete.

WS-P-12: Working in concert with partners such as Public Works, Planning, Environmental Resources, Environmental Health, California Department of Health Services, the Yolo County Flood Control and Water Conservation District, the RCD, the Farm Bureau, landowners and others, develop a well head protection and abandonment program. This program may include County and city land use regulations or other actions needed to maintain quality standards. Identify abandoned wells and map them using the County's GIS system. Develop an ordinance that requires adequate identification, notification and capping of abandoned wells. Work with all of the affected partners to provide the necessary education about the ordinance and requirements to ensure implementation.

Water Use Efficiency: Conservation and Recycling

WS-P-13: Maintain and enforce Yolo County's existing water conservation ordinance requiring water conserving landscaping for discretionary development projects. If state legislation modifies the requirements for water conserving landscape ordinances, upgrade and update existing requirements accordingly and implement the ordinance fully.

WS-P-14: Landscape plans for discretionary development in the unincorporated area shall include water conservation measures as prescribed by the County' ordinance, including use of hydro-zoning, mulching, low water use landscape plants (emphasizing natives), computer-controlled irrigation systems, low water use plumbing fixtures, leak detection and correction, and related technologies. Encourage use of storm water for irrigation through use of cisterns, bio-swales, rain gardens and related features. Require these landscape standards for all developer installed landscapes including single family front yards.

WS-P-15: Work with cities to implement feasible water conservation measures in urban water management plans.

WS-P-16: Provide homeowners and business owners with information on maintenance and up keep of water conserving landscaping and irrigation systems.

WS-P-17: County landscaping (such as parks, office landscapes, etc.) should adopt the same water conserving landscape principles as noted above as demonstrations for the community.

WS-P-18: Use water efficiently and reduce consumptive urban and rural residential water demand by:

- Requiring water conserving fixtures and design in all new construction and redevelopment.
- Encourage water conserving landscaping and other conservation measures.
- Encouraging retrofitting with water conserving devices.
- Design wastewater treatment systems to minimize inflow and infiltration to the extent economically feasible.

WS-P-19: Encourage water purveyors to adopt conservation pricing strategies for existing and new development.

WS-P-20: Require projects, where feasible, to retain storm water for on-site use which offsets the use of other water. Implementation could include standards for runoff retention and storage, impervious surfaces, vegetation removal, landscaping, and preservation of wetlands and riparian areas.

WS-P-21: Where applicable, allow for gray water systems, roof catchments of rainwater and other methods of reusing water and minimizing the need to use groundwater.

WS-P-22: Continue to expand the public-information program for citizens on water-conserving practices, including landscaping.

WS-P-23: Support water purveyors in the implementation and continued refining of the "Memorandum of Understanding Regarding Urban Water Conservation in California" in those areas where water suppliers are party to the MOU.

WS-P-24: Participate in existing programs that encourage irrigation districts and major agricultural water consumers in the County to conserve water and develop efficient water management practices. Develop incentives to encourage agricultural water conservation.

WATER QUALITY

Findings

WQ-F-1: Important to protect the quality of groundwater and surface water for the benefit of urban areas, agriculture, and the environment

WQ-F-2: Urban areas can significantly improve drinking water quality through treatment processes

WQ-F-3: Groundwater and surface water quality are both critical for ecosystem health

WQ-F-4: Drinking water quality and wastewater discharge standards are tightening

WQ-F-5: Deteriorating ground water quality may increasingly have an impact on agricultural production

WQ-F-6: Water quality varies with location and depth of groundwater. Intermediate and deep aquifers are more important to protect than shallow aquifers.

Issues

WQ-I-1: High nitrate levels in the drinking water wells of both cities and unincorporated communities that potentially present a risk to human health

WQ-I-2: High salinity levels from wastewater treatment plant discharges into waterways that exceed permit requirements

WQ-I-3: Potential for high salinity levels in groundwater if agricultural irrigation slowly concentrates salts in shallow groundwater aquifers, but more monitoring necessary to determine if it is an issue

WQ-I-4: Levels of arsenic and chromium VI, naturally occurring constituents in deep groundwater aquifers, which approach human health standards and may cause a risk to human health

WQ-I-5: High levels of boron in shallow groundwater aquifers that reduce crop yields or destroy young, perennial crops

WQ-I-6: Trace levels of flame retardant chemicals that do not yet present a risk to human health, but may present a risk in the future.

WQ-I-7: Well head neglect and abandonment, creating possible conduits for pollution to enter groundwater aquifers

WQ-I-8: Low levels of pesticides, nitrates or other harmful constituents in surface water that are not known to exceed human health standards, but additional monitoring is required to ensure that the water is safe

WQ-I-9: Some surface water sources have high levels of suspended sediment that can negatively affect aquatic life

WQ-I-10: High levels of mercury in Cache Creek and the Yolo Bypass may present a risk to humans who consume large quantities of fish and fish-eating wildlife.

WQ-I-11: Storm water drainage may result in spikes of pollutants of concern that could exceed human health standards and negatively affect wildlife.

WQ-I-12: Agricultural runoff can contain contaminants that affect urban storm water quality and impact the urban storm water drainage systems.

Goals

- To ensure high quality surface water and ground water resources throughout the County on a sustainable basis to serve the needs of all beneficial uses including urban, agricultural, environmental and recreational.

Objectives

- To meet State and federal standards for water quality protection in all surface and ground water resources working closely with water purveyors, land owners and businesses, citizens, and State, federal and local agencies and non-profits.
- To develop sustainable monitoring, management and protection programs and institutional capacity to ensure that water quality continues to meet standards for surface and ground water sources.
- To work in a collaborative manner with State and federal agencies and both public and private water dischargers to ensure a fair and open process of achieving long-term County-wide and regional water quality protection standards for point source and non-point source pollutants.

Policies

WQ-P-1: Continue to work with the Central Valley Regional Water Quality Control Board and interested parties to develop and implement effective water quality regulations, best management practices, and guidelines.

WQ-P-2: Work with local and regional partners to educate the public about practices and programs to minimize water pollution.

WQ-P-3: Work with local partners to provide educational and technical assistance to farmers to reduce sedimentation, provide on-site retention of irrigation water and flow attenuation, as well as detention of storm water flows.

WQ-P-4: Support the Yolo County Flood Control and Water Conservation District's efforts to develop a countywide groundwater monitoring program.

WQ-P-5: Work with the Yolo County Flood Control and Water Conservation District and other water purveyors in the unincorporated areas to inform the public about practices and programs to minimize water pollution.

WQ-P-6: Develop a County grading ordinance, which includes measures to limit soil erosion and sedimentation, as well as runoff contaminants from construction sites, developed land uses, and agricultural operations.

WQ-P-7: Working with the Yolo County Resource Conservation District the Natural Resources Conservation Service, and the Yolo County Flood Control and Water Conservation District, develop and implement educational and technical assistance programs for water quality management for agricultural activities. Encourage programs to disseminate information on the benefits of on-site retention and recharge of storm waters, tail water ponds, erosion control technologies and related programs.

WQ-P-8: Working with the Yolo County Environmental Health Department and California Department of Health Services, consider development or expansion of community or package wastewater treatment systems in areas with widespread septic system problems which are a health concern and cannot be addressed by on-site maintenance and management programs.

WQ-P-9: Actively enforce the abatement of ailing septic systems that have been demonstrated as causing a health and safety hazard.

WQ-P-10: Locate septic systems outside of primary ground water recharge areas, or if that is not possible, require the use of shallow leaching systems for disposal of septic effluent.

WQ-P-11: Work with the Yolo County Environmental Health Department to review all rural-residential and large lot subdivisions and parcel maps to ensure that nitrates and other pollutants of concern entering the ground water from septic disposal systems will not impair ground water quality. Maintain adequate distances between septic systems and wells, either active or abandoned. Review and revise septic system standards to reduce nitrate and other pollutants in groundwater.

WQ-P-12: Prohibit installation of septic systems or leach fields within at least 100 feet of all natural waterways, including perennial or intermittent streams, seasonal water channels and natural bodies of standing water. An exception may be made for the repair of existing systems, if the buffer cannot be maintained, and adequate provisions are made for water quality protection.

WQ-P-13: Support efforts to reduce the accumulation of methyl mercury in fish tissue in Cache Creek and the Delta and the consumption of fish with high levels of methyl mercury.

WQ-P-14: Work with the Central Valley Regional Water Quality Control Board and other state and federal agencies to develop and implement mercury Total Maximum Daily Loads for Cache Creek, the Delta, and any other Yolo County waterways subject to mercury regulations.

FLOOD HAZARD REDUCATION STORM DRAINAGE

Findings

FC-F-1: Much of Yolo County is in a natural floodplain

FC-F-2: Yolo County has three primary geographic regions with the potential for flooding: 1) Cache Creek Basin/Woodland; 2) the Sacramento River corridor (including Clarksburg and Knights Landing), and the (3) western Yolo County floodplain (Madison, Esparto, Airport Slough, etc.)

FH-F-3: Each region has unique circumstances related to flood potential, but all three share common issues. Issues include inadequate funding for levee maintenance and improvement and problems with levee geotechnical instability.

FH-F-4: Yolo County, 13 reclamation districts, one levee district, one drainage district, and the California Department of Water Resources have responsibility for maintaining Yolo County's 215 miles of Sacramento River Flood Control Project levees, including levees in the Yolo Bypass, and levees along Putah Creek which are considered part of the Sacramento system.

FH-F-5: Yolo County's Sacramento River levees provide flood protection to West Sacramento, Knights Landing, Clarksburg, and important agricultural lands. In addition, the Yolo Bypass, the Sacramento Weir, and the Fremont Weir help protect Sacramento and other urban communities in the region from Sacramento River flooding.

FH-F-6: Additional development in Yolo County's floodplain, without work to improve levees, would put additional citizens at risk of flooding. As a result of rapid population growth and escalating housing costs in the past ten years, there has been increasing pressure in the Central Valley to build homes and other structures in natural floodplains. Yolo County has historically restricted growth in the floodplain in the unincorporated area, but some cities in the region continue to build residential, industrial, and residential structures in the floodplain.

FH-F-7: Urban development increases the amount of impervious surface and, as a result, increases surface water runoff, accelerates the timing of peak runoff flows, and results in increased erosion, sedimentation and water quality problems in surface runoff, as well as hydro-modification to streams and creeks.

FH-F-8: There is an increasingly large body of information and technology available to ensure low impact solutions for storm drainage from new development and redevelopment; these techniques can often be applied in a way that provides for multiple benefits such as flood control, water quality management, recreational or esthetic benefit and constructed habitat.

Issues

FH-I-1: Yolo County's Sacramento River levees protecting Clarksburg, Knights Landing, and important agricultural lands may not meet federal standards for 100-year flood protection, including standards for freeboard, erosion, and geotechnical stability (i.e., through-seepage and under-seepage).

FH-I-2: Expensive geotechnical studies are necessary to determine whether Sacramento River levees meet federal standards for 100-year flood protection. It is likely that the studies will reveal that expensive levee improvements are needed to achieve these standards.

FH-I-3: As a rural county that deliberately did not develop in its floodplain, Yolo County does not have the resources it needs to provide adequate flood protection to flood-prone small communities and agricultural lands protected by Sacramento River levees.

FH-I-4: Additional public outreach is needed to communicate the potential risk of flooding to residents and property owners in Yolo County.

FH-I-5: Additional funding is needed to improve emergency preparedness in the event of levee failure.

FH-I-6: Yolo County is not adequately recognized, or compensated, for the flood protection it provides to Sacramento and other urban communities in the region.

FH-I-7: Parts of the City of Woodland and the unincorporated area of Yolo County in the vicinity of Cache Creek (including the town of Yolo) are protected by levees that only provide a 10-year level of flood protection. Work is ongoing to seek a solution to provide a 100-year or a 200-year level of protection and better understand the risk of flooding.

FH-I-8: The portion of lower Cache Creek that provides a 10-year level of flood protection is inadequately maintained as a result of a lack of resources and uncertainty as to maintenance responsibility. Maintenance needs include erosion repair and removal of non-native, invasive vegetation that increases channel roughness and impedes capacity.

FH-I-9: The western Yolo County floodplain, including Madison, Esparto, and the Yolo County airport, is not adequately protected from flooding resulting from winter flows in sloughs, canals, and other waterways.

FH-I-10: To satisfy water quality and related needs, storm drainage requirements for urban and rural development will become increasingly more stringent and require use of best management practices to reduce runoff, non-point source pollutants and related environmental damage.

Goals

- To ensure reliable and effective flood protection for all uses in the County at levels that are appropriate for the end use, available funds and environmental resources.
- To provide for efficient, cost-effective, and sustainable solutions to storm water drainage for all new development, redevelopment, and where applicable, established developed areas.

Objectives

- To meet agreed upon standards for flood protection in all areas of the County within 10 years in a way that does not compromise ecological resources and can be accomplished in a cost effective manner.
- To become a model area for flood protection and management approaches that incorporate environmental protection and restoration efforts while serving flood management needs.
- To develop innovative storm water management requirements, guidelines and best practices within 5 years that enable the county to meet state and federal permit requirements, as well as improving storm water runoff quality and reducing impacts to surface water resources.

Policies

Flood Risk Reduction

FH-P-1: Enhance habitat and improve recreational opportunities as part of the design of necessary flood hazards reduction projects. Efforts to implement this policy should be consistent with the Sacramento River Corridor Floodway Management Plan, as appropriate.

FH-P-2: If feasible and appropriate, compensate landowners for measurable adverse impacts of flood hazard reduction projects.

FH-P-3: Require extensive public outreach as part of efforts to identify flood hazard reduction improvements.

FH-P-4: Require proponents of projects in the Sacramento River floodway corridor to ensure plans are consistent with the Sacramento River Corridor Floodway Management Plan.

FH-P-5: Support efforts to provide at least 100-year flood protection for Yolo County residents. Strive for 200-year flood protection.

FH-P-6: Assist levee maintenance districts with efforts to secure state and federal funding for geotechnical studies of levees and associated improvements.

FH-P-7: Work with levee maintenance districts to ensure that levee maintenance is consistent with efforts to enhance habitat and provide recreational opportunities.

Storm Drainage

SD-P-1: Design storm water drainage and detention facilities to maximize recreational, habitat and aesthetic benefits, as well as flood control. Develop consistent planning and engineering standards for developers to follow and conduct educational workshops to ensure implementation.

SD-P-2: Where applicable, coordinate and integrate development of storm water features (e.g., ponds, swales, channels) with surrounding storm water improvements to maximize the connectivity of recreational, habitat and aesthetic benefits.

SD-P-3: All new development shall include on-site drainage facilities (or landscape treatments) that are designed to infiltrate or convey peak flows from the 10-year storm event. New development shall be designed with detention capacity so that post-development storm water discharge does not exceed pre-development discharge in events up to the 100-year storm. Drainage will be routed to regional storm water detention, retention or flood storage facilities where feasible.

SD-P-4: Consistent with the Planning, Resources, and Public Work's Department urban runoff management program, community plans, area plans, and specific plans shall specify urban runoff control strategies and requirements for development in newly urbanizing areas. The plans also shall identify sites where retention and treatment are warranted consistent with discharge permit requirements and county-wide runoff measures.

SD-P-5: Where conditions are appropriate, ensure that development projects minimize pollution of storm water, receiving water bodies and groundwater, and maximize ground water recharge potential. Where technically and economically feasible, utilize development standards that maximize the retention and infiltration of surface water runoff to reduce the volume of water and pollutant loads going directly to receiving surface waters (streams, channels, sloughs, wetlands, reservoirs, etc.).

- Consider planning and engineering design standards that use low impact development techniques and approaches to maintain and mimic the natural hydrologic regime.
- Require all major subdivisions and urban development projects to utilize these "infiltration" style low impact development technologies when designing and constructing urban development projects, where feasible.
- Coordinate between Public Works, Planning, Building and Environmental Resources to ensure that storm water best management practices are

followed during and after construction in accordance with relevant State-required storm water permits.

SD-P-6: The costs for operating and maintaining storm drainage facilities shall be provided by establishing the appropriate funding entity and fees to ensure that the costs are borne by those receiving benefit.

SD-P-7: New non-agricultural parcel maps and subdivision maps shall not be approved in 100-year flood zones as mapped by FEMA unless the new development provides the infrastructure and improvements needed to take the land to be developed out of the designated floodplain.

AQUATIC AND RIPARIAN ECOSYSTEM ENHANCEMENT

Findings

AR-F-1: The aquatic and riparian ecosystems of six major waterways in Yolo County, including associated tributaries, small sloughs and waterways have been significantly degraded as a result of anthropogenic activities over the last 150 years. The six major waterways are: Cache Creek, Putah Creek, the Colusa Basin Drain/Knights Landing Ridge Cut Canal, Sacramento River, Willow Slough, and the Yolo Bypass.

AR-F-2: Many of Yolo County's aquatic and riparian ecosystems are considered of statewide importance for protection and enhancement of native plants, fish and wildlife (including endangered species), and for recreational and ecosystem service (e.g., orchard pollination).

AR-F-3: Maintaining Yolo County's diverse agriculture is important for native plants, fish, and wildlife.

AR-F-4: Changing agricultural practices to better support native plants and fish and wildlife populations will play an increasingly major role in maintaining and enhancing Yolo County's native biota.

Issues

AR-I-1: The loss of native plants and the increase of invasive plants lead to an increased rate of erosion in some areas, as well as a loss of high-quality riparian habitat. Non-native vegetation often crowds out native vegetation and may offer much lower wildlife habitat value than the multi-tiered native riparian canopy. Non-native vegetation also may use more water than native riparian vegetation.

AR-I-2: Loss of native fish habitat, including rearing areas and spawning grounds

AR-I-3: Barriers to fish passage prevent anadromous fish from reaching some spawning grounds.

AR-I-4: Loss of floodplain habitat with superior food availability for juvenile fish and better protection from predators than open waterway.

AR-I-5: Loss of habitat for terrestrial species, including endangered species, leading to a decline in some populations. Of particular concern are:

- Nesting and foraging habitat for neo-tropical migrant birds.
- Nesting and foraging habitat for Swainson's Hawk and other raptors.
- Winter habitat for migratory waterfowl.
- Riparian habitat for native mammals (gray fox, otter, etc.)
- Riparian habitat for native insect pollinators, especially native bees.
- Habitats for endangered invertebrates (e.g., longhorn elderberry beetle).
- Seasonal habitat for the tule elk.

AR-I-6: Increasing presence of invasive aquatic species, especially plants, fish, and invertebrates.

AR-I-7: Methyl-mercury is present at high levels in some Cache Creek and Delta fish. Methyl-mercury can cause neurological and reproductive disorders in humans and fish-eating wildlife.

AR-I-8: Populations of non-native and native mammals that burrow into levees and threaten levee integrity (muskrat, beaver, and ground squirrels).

AR-I-9: Decline of yellow-billed magpies and other native birds due to West Nile Virus.

Goals

- To enhance, improve and maintain aquatic and riparian ecosystems and aquatic biodiversity throughout the county.

Objectives

- Consistent with the emerging Yolo County NCCP/HCP, to establish priority aquatic habitat areas for protection and restoration within 5 years; and establish the necessary management and funding responses to meet NCCP/HCP restoration and protection goals.
- To become a model area for integrating agricultural production and habitat conservation through the use of sustainable agricultural practices and habitat enhancement incentives that are compatible with agricultural production.
- Within 20 years, working with state and federal agencies, land owners and non-profit organizations, to reduce barriers to fish passage by 50%; reduce invasive species populations by 50%, protect 50% of the county's remaining intact riparian habitat, and achieve NCCP/HCP restoration goals for that period.
- To utilize a variety of tools (such as the land development and permitting process, State and federal grants, and university resources) to achieve a sustainable and

effective monitoring, management and reporting process for priority aquatic and riparian habitats in the county within 10 years.

Policies

AR-P-1: Encourage countywide efforts to remove non-native, invasive vegetation in and around waterways and efforts to revegetate the areas with native plants, including planning efforts to ensure removal efforts are coordinated.

AR-P-2: Consistent with the Yolo County Integrated Regional Water Management Plan and the Yolo County HCP/NCCP, encourage and coordinate efforts to enhance aquatic and riparian ecosystems for fish and wildlife. Work with private landowners, local conservation organizations, state/federal agencies, and other interested stakeholders to implement aquatic and riparian ecosystem enhancement priorities.

AR-P-3: Consistent with the Yolo County Integrated Regional Water Management Plan, support efforts to address fish passage issues in Yolo County. Require extensive public outreach as a necessary component of any efforts to address fish passage issues, and ensure proposed projects minimize impacts on agriculture, wetlands restoration, and flood control activities.

AR-P-4: Ensure that aquatic and riparian ecosystem enhancement efforts are consistent with flood management objectives.

AR-P-5: Evaluate the need for additional water to support future aquatic and riparian ecosystem enhancement efforts, including the benefits of conjunctive management of groundwater and surface water resources.

AR-P-6: Protect and preserve water resources for the maintenance, enhancement, and restoration of environmental resources.

AR-P-7: Consistent with the Yolo County Integrated Regional Water Management Plan and the Yolo County HCP/NCCP, maintain healthy, well-managed marsh and riparian woodlands along the county's waterways and channels.

AR-P-8: Consistent with the Yolo County HCP/NCCP, marshland and riparian areas of special significance shall be designated as habitat preserves.

AR-P-9: Ensure no net loss of ecological values from wetlands, marshes, sloughs, vernal pools and riparian woodlands as a result of urban, public, and agricultural development.

AR-P-10: Community plans, area plans, and specific plans shall include a complete inventory of streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools. As part of the land planning and community design, these features should be protected or enhanced as part of the community design.

AR-P-11: Consistent with the Yolo County Integrated Regional Water Management Plan and the Yolo County HCP/NCCP, review projects for potential to restore marsh/riparian

woodlands, considering effects on vernal pools, ground water, flooding, and proposed fill or removal of marsh and riparian habitat.

AR-P-12: Consistent with the Yolo County HCP/NCCP, preserve and enhance high-quality, self-sustaining vernal pool habitats that encompass all vernal pool types. Base vernal pool preservation decisions on the following evaluation criteria: representativeness, habitat quality, watershed integrity, defensibility, buffer, preserve size, plant species variety, and presence of special status species.

AR-P-13: Consistent with the Yolo County HCP/NCCP, ensure that vernal pool preserves are large enough to protect vernal pool watersheds, provide an adequate buffer, and have sufficient number and extent of pools to support adequate species populations and a range of vernal pool classes.

AR-P-14: Consistent with the Yolo County HCP/NCCP, strive to encourage the creation of contiguous natural preserves to limit habitat fragmentation.

AR-P-15: Coordinate local project approval with state and federal regulatory agencies (e.g., Army Corps of Engineers, California Fish and Game, U.S. Fish and Wildlife, Regional Water Quality Control Board, etc.) to ensure stream-lined and cost-effective processing of wetland, stream alteration and other water-related permits

AR-P-16: Roads and road-related structures (bridges, culverts, retaining walls, abutments, etc.) shall be located, designed, built and landscaped so as to minimize impact to significant natural resources, reduce erosion during and after construction, and accommodate flood flows.

AR-P-17: Roads and related structures shall be designed to minimize grading on slopes above 20 percent.

AR-P-18: Best management practices, such as erosion protection measures and on-site ponding, shall be required for all borrow pits and surface mining operations. Best management practices for these activities are provided in the Cache Creek Resource Management Plan, and may have applicability to other areas.

AR-P-19: When approving development (anything larger than a single family home), require a buffer zone on each side of any perennial stream, wetland or slough. The width of the buffer can vary from 50-150 feet, and will depend on the water feature and the project size and potential impact. The buffer should be designed to allow for fire and flood protection, a natural riparian corridor (or wetland vegetation), a planned recreational trail where applicable, and vegetated landscape for storm water to pass through before it enters the water body.

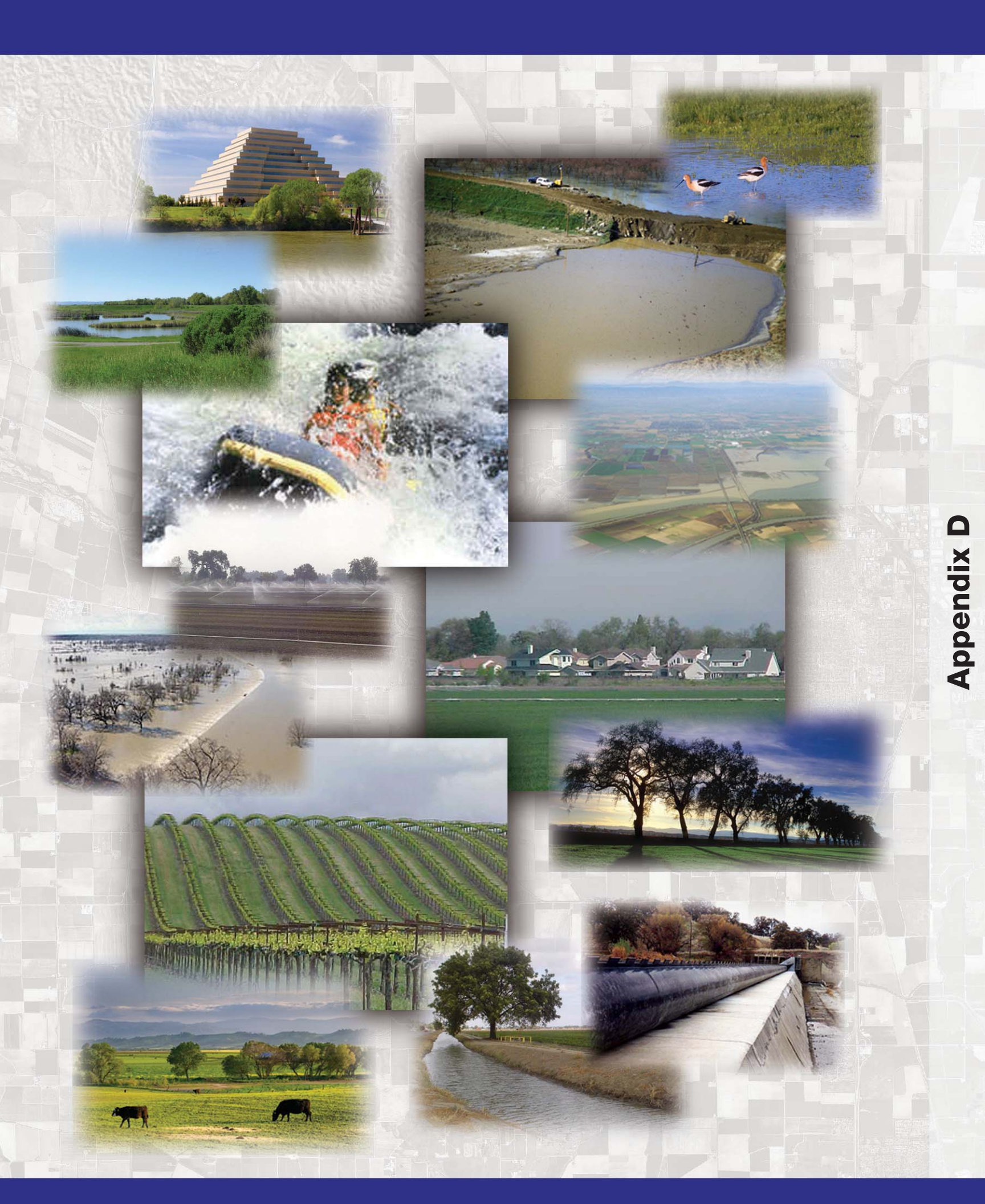
AR-P-20: Preserve, protect and restore riparian corridors and wetlands for the protection of wildlife and aquatic habitat, water quality, erosion control, open space, aesthetic and recreational values and the conveyance and storage of flood waters.

AR-P-21: Require development to be a distance of at least 50 feet to 100 feet from of all wetlands.

AR-P-22: Ensure that aquatic and ecosystem enhancement efforts on Cache Creek are consistent with, and do not negatively affect, implementation of the Cache Creek Resources Management Plan.

AR-P-23: Ensure that mosquito abatement efforts are compatible with protecting fish and wildlife, including native insect pollinators.

AR-P-24: Provide incentives to farmers and other landowners to adopt practices and implement projects that are compatible with fish and wildlife habitat.



APPENDIX D

Community Workshop – November 30, 2005
Public Workshop Meeting Recap – November 30, 2005

Community Workshop – May 8, 2006
Public Workshop Meeting Summary – May 8, 2006

Community Workshop – October 25, 2006
Public Workshop Meeting Summary – October 25, 2006



WATER RESOURCES ASSOCIATION

O F Y O L O C O U N T Y

Integrated Regional Water Management Plan

Davis, City of
Dunnigan Water District
Reclamation District 2035
University of California, Davis
West Sacramento, City of
Winters, City of
Woodland, City of
Yolo County
Yolo County Flood Control &
Water Conservation District



Cache Creek, Capay Valley

Help plan for the future of your water resources!

The Water Resources Association of Yolo County (WRA) is a group of local entities working together to provide a water-planning forum.

Currently, the WRA is developing Yolo County's first Integrated Regional Water Management Plan (IRWMP). The IRWMP will serve as a planning document to help guide water issues and projects within Yolo County. IRWMP issues and projects will be divided into five key areas:

- water supply and drought preparedness
- water quality
- flood control and storm drainage
- recreation
- riparian and aquatic ecosystem enhancement

The WRA is off to a solid start developing the IRWMP. Recently, the WRA was selected as one of the top ranking entities likely to receive a \$500,000 Proposition 50 planning grant for IRWMP development. While the funding would help, there is still much work to conduct between now and the December 2006 deadline.

The WRA will ultimately prioritize the water-related programs and projects that will be included in the IRWMP, but **we need public input to help guide the choices**. Insight from interested parties — people like you — is one of the critical steps to developing a comprehensive and solution-oriented IRWMP for Yolo County.

In addition to **gathering input about programs, policies and projects** to consider, we need help deciding **how the programs, policies and projects should be prioritized**. The WRA will develop draft prioritization criteria to help decide what water resource actions should be addressed first. Public input will be considered before finalizing the criteria.

The first IRWMP community workshop is Wednesday, November 30, at the Woodland Public Library. First session is 4-5:30 p.m. and will be repeated 6-7:30 p.m.

It is important to note that the topic of flood control and storm drainage, though one of the five topic areas being addressed at the workshop, is not specific to Cache Creek flood management issues. Nor will it be the sole topic of discussion at the workshop.

Stay informed about the IRWMP, and give your input!

- Watch for periodic newsletters about IRWMP developments.
- Attend two additional community workshops in the future.
- Visit the project Web site, www.yolowra.org, to get information on project specifics and process status. There also is a form for public feedback. Just click on the "Comments" page.

If you wish to speak to someone directly about the IRWMP or to get on the mailing list, please contact David Scheuring, Chair for the WRA, or Donna Gentile, Administrative Coordinator, at (530) 666-2733 or by e-mail at info@yolowra.org.

Proposition 50

Proposition 50, the Water Security, Clean Drinking Water, Coastal and Beach Protection Act, was passed by California voters in 2002. The proposition allowed for the sale of \$3.4 billion of general obligation bonds to finance a variety of water projects throughout the state including coastal protection, water use efficiency, safe drinking water, water quality and integrated regional water management. Grant funding from Proposition 50 provides the WRA with the opportunity to continue its Yolo County IRWMP planning efforts. Proposition 50 could help fund priority actions identified in the Yolo County IRWMP.

Water Resources Association
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Water Resources
Association
of Yolo County
P.O. Box 8624
Woodland, CA 95776

FIRST COMMUNITY WORKSHOP FUTURE OF WATER RESOURCES IN YOLO COUNTY

Your Opinion Matters!

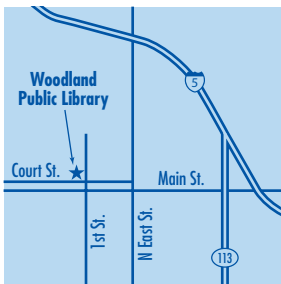


Cache Creek, Capay Valley

Help improve water resources in your area! Share your ideas or suggestions about potential water-related projects in Yolo County! Attend the first community workshop on November 30 at the Woodland Public Library.

In an effort to accommodate as many residents as possible, two meetings are being held back-to-back. The first will run from 4–5:30 p.m., while the second will be from 6–7:30 p.m.

Directions to the Community Workshop



The first community workshop is scheduled for Wednesday, November 30 from 4-5:30 p.m. and from 6-7:30 p.m. It will be held in the Leake Community Room at the Woodland Public Library, 250 First St., Woodland. In an effort to accommodate as many residents as possible, two meetings are being held back-to-back.

DIRECTIONS TO WOODLAND PUBLIC LIBRARY

From Davis/West Sacramento: Take Highway 113 toward Woodland. Take the Woodland, Main St. exit. Turn left at the light at the end of the off-ramp on to Main Street. Continue on Main St. and stay in the left lane. Turn right on First Street. Woodland Public Library, 250 First St., will be on your left after you cross Court St.

From Sacramento: Take I-5 North toward Redding/Woodland. Take the Woodland, Main St. exit. Turn left at the light at the end of the off-ramp on to Main Street. Continue on Main St. and stay in the left lane. Turn right on First Street. Woodland Public Library, 250 First St., will be on your left after you cross Court St.

The Leake Room: From the library parking lot, the Leake Room is accessed through a doorway on the north side of the library building. Meeting signs will be posted for your convenience. Walk through an outside walkway toward a courtyard area, and turn right down a small ramp before the courtyard. The Leake Community Room is just inside.

Water Resources Association of Yolo County

Public Workshop – November 30, 2005

Meeting Recap

Public Attendees

Approximately 104 interested persons attended the two Integrated Regional Water Management Plan (IRWMP) community workshops on November 30, 2005 in the city of Woodland at the Woodland Public Library.

All members of the Water Resources Association of Yolo County (WRA) Technical Committee were present as were many members of the Board of Directors.

WRA Technical Committee Member Attendees:

- ◆ Jacques DeBra, City of Davis Public Works and WRA Board
- ◆ Sid England, University of California, Davis and WRA Board
- ◆ Gary Wegener, City of Woodland
- ◆ Doug Baxter, City of Woodland
- ◆ Donita Hendrix, Dunnigan Water District
- ◆ Max Stevenson, Yolo County Flood Control & Water Conservation District
- ◆ Tim O'Halloran, Yolo County Flood Control & Water Conservation District
- ◆ Petrea Marchand, Yolo County Planning & Public Works
- ◆ Bill Brewster, Department of Water Resources
- ◆ Tasmin Eusuff, Department of Water Resources

WRA Board of Directors Attendees:

- ◆ David Scheuring, Yolo County Flood Control & Water Conservation District
- ◆ Duane Chamberlain, Yolo County Board of Supervisors and WRA Board
- ◆ Sue Greenwald, City of Davis
- ◆ Kurt Balasek, City of Winters
- ◆ William Cotter, Dunnigan Water District

Local Electeds Attendees:

- ◆ Frank Siefertman, Jr., Yolo County Board of Supervisors
- ◆ Matt Rexroad, City of Woodland and WRA Board
- ◆ Elly Fairclough, Representative for Congressman Mike Thompson

Consultant Team Attendees:

- ◆ Fran Borcalli, Wood Rodgers, Inc.
- ◆ Grant Davids, Davids Engineering, Inc.
- ◆ Rob Beggs, Brown & Caldwell
- ◆ Steve Chainey, MIG
- ◆ Gerrit Platenkamp, MIG
- ◆ Dave Anderson, West Yost & Associates
- ◆ Lucy Eidam, Lucy & Company
- ◆ Josh Newcom, Lucy & Company

- ◆ Nicole Angeloni, Lucy & Company

Media Attendees:

- ◆ Ben Antonius, Woodland Daily Democrat
- ◆ Beth Curda, Davis Enterprise
- ◆ Justin Malvin, California Aggie

Welcome/Introductions

Lucy Eidam, meeting facilitator, welcomed everyone and introduced the project team. She explained that the meeting would serve as an introductory and informational platform for the IRWMP and that the goal was to obtain public feedback on the five topics involved in the process: flood control and storm drainage; water quality; recreation; riparian and aquatic ecosystem enhancement; and water supply and drought preparedness. Eidam then outlined simple ground rules for meeting conduct.

Presentation Summary and Overview

The public workshops were held the evening of November 30, 2005- the first from 4:00 to 5:30 p.m. and the second from 6:00 to 7:30 p.m. The workshop consisted of a brief background and informational presentation by David Scheuring, WRA chair, including an overview of the Water Resources Association of Yolo County (WRA), its members and the WRA Board of Directors.

Scheuring turned the presentation over to Jacques DeBra, City of Davis Public Works. DeBra provided a brief overview of the IRWMP, reiterating the importance of communicating with interested parties in Yolo County in an effort to better understand their perspectives and needs throughout the IRWMP process. The IRWMP was explained as a comprehensive planning effort aimed at identifying and prioritizing county-wide water resource policies, projects and programs. DeBra concluded his portion of the presentation by asking the group if there were any initial questions.

Tim O'Halloran, general manager for the Yolo County Flood Control and Water Conservation District, continued the presentation by discussing the role the prioritization criteria would play in the IRWMP development. The prioritization criteria were defined as a method for ranking the importance of alternative actions. O'Halloran said the overall purpose was to provide a method for the systematic selection of policies, projects and programs and to help agencies determine what actions could be implemented first and potentially receive Prop 50 or other funding. Although the criteria have not yet been developed, some examples were provided to the public for a reference purpose, such as affordability, cost efficiency, risk management, environmental impacts and fundability. O'Halloran asked if there were any questions. A list of potential prioritization criteria was provided for attendees to rank and turn in before they left¹. He then turned the presentation back over to Eidam to describe the break-out sessions.

Break-Out Sessions

Eidam explained the importance of gaining public input on each of the five topics. She divided the room into five sections, and directed the groups to five distinct topic tables. From there, individuals could walk around to any and all of the tables in which they were interested in providing input and feedback. Questions were posted at each of the stations to get attendees thinking about the issues

¹ See end of recap for summary of prioritization criteria comments.

related to that topic. Each table also had numerous notepads and pens for people to write down their comments and concerns. Various maps highlighting water resources of the county were placed at each station for reference. Attendees placed their notes on the wall next to the question in which they were answering to demonstrate areas of interest. There was at least one representative at each station who answered interested parties' questions.

Closing

Prior to breaking-out, Eidam outlined that the group would not be reconvening following the sessions. After attendees provided input in all intended areas, they were free to leave. Information on how to stay updated on the IRWMP process and provide public input throughout this process was highlighted. Meeting participants were reminded about the tools available for providing input include: the Web site, being added to the stakeholder database for mailings, and the times and dates of upcoming WRA Technical Committee and Board meetings. All of the attendees were thanked for coming and providing their input.

Break-Out Sessions Topics of Interest

The following are some consistent themes derived from each of the topic stations at the workshops. For a complete list of all comments, please see appendix at the end of this document.

Flood Control & Storm Drainage: Represented by Tim O'Halloran (During the first workshop, there was a great deal of interest in this station)

Questions:

- What are the geographic areas of concern?
- How much do we know about each of these areas of concern?
- What processes are already in place to deal with each of the areas?
- How confident are we in what we know?
- Are the issues the same in each area (i.e. is public safety an issue in all of them?)

Consistent themes:

- ◆ Develop a flood control program that to alleviate the FEMA flood plain designation
- ◆ Focus on projects that minimize run-off, especially for the city of Woodland and Cache Creek
- ◆ Develop multi-tiered solutions to flood control that incorporate vegetation control in water channels and levee improvements
- ◆ Conduct new modeling studies to identify flood-prone areas
- ◆ Separate Woodland's floodplain into areas of minor and major impacts from flooding, particularly in areas where there is a public safety issue
- ◆ Begin projects and prioritize based on the flood areas that have the most impact on the largest number of people
- ◆ Address sedimentation, particularly in Cache Creek and the Yolo Bypass, to prevent flooding
- ◆ Develop evacuation plans
- ◆ Collaborate with surrounding areas, like Lake County, to ensure involvement in the process
- ◆ Consider a political entity to address storm drainage in Yolo County
- ◆ Develop dual purpose projects that address both water supply issues and flood control issues such as reservoirs along Upper Cache Creek
- ◆ Have gravel companies help maintain levees and increase flood flow capacity in Cache Creek where it is the most vulnerable
- ◆ Flood control should be a regional approach including the Sacramento River levees and flooding of Esparto, Madison and east and west of I-505.

Water Quality: Represented by Max Stevenson

Questions:

- Do you have concerns about the water quality at your home, such as hardness, taste, odors, etc?
- Do these concerns change your habits, such as using bottled water or a water filter?
- What are the most important water quality problems in the County?
- Are you worried about the aquifer?
- Do you eat fish out of local waters?
- If you practice water contract recreation sports in Yolo County, such as swimming, boating or fishing, do you worry about water quality?

Consistent themes:

- ◆ Concerns county-wide about high mineral content in groundwater, including salts, boron, nutrient loading/nitrates/pesticides and other constituents
- ◆ Improve stormwater run-off containment, both non-point source and point source pollution (using bioswale retention was mentioned as was using BMPs or cover crops)
- ◆ Greater study of the groundwater basin pertaining to yield/recharge/subsidence
- ◆ Concerns over water quality stemming from the Colusa Basin Drain
- ◆ Encourage organic farming
- ◆ Understand and plan for long-term water quality trends
- ◆ Improve overall water quality by buying or importing water from Sacramento River water districts

Recreation: Represented by Sid England**Questions:**

- Are there adequate water-related recreational opportunities available to Yolo County residents?
- If no, what kinds of opportunities would you most like to see increased in Yolo County?
- Where would you like to see these opportunities located in Yolo County?
- Are there existing water-related recreational opportunities in Yolo County that you believe should be modified?

Consistent themes:

- ◆ Increase access to waterways including Cache Creek, Putah Creek and Lake Berryessa
- ◆ Develop recreational infrastructure such as hiking, horseback and biking trails along waterways (comparison to American River Parkway was mentioned several times), new camping/picnic sites/maintain current sites, like Camp Haswell and more canoe/kayak/boating put-ins and fishing/hunting/birding access
- ◆ Create clean boating and marina programs
- ◆ Ensure Cache Creek rafting and other recreational activities continue
- ◆ Protect private land rights and not encroach into agricultural areas without engaging willing landowners for partnerships

Riparian & Aquatic Ecosystem Enhancement: Represented by Petrea Marchand**Questions:**

- Where in Yolo County do you think the aquatic and riparian habitats are functioning best to support important key animals and plant species? Please be specific and point to areas on the map if possible.
- Why do you believe these areas are the best? Could they be improved?
- Where in Yolo County do you think the aquatic and riparian habitats are functioning most poorly to support important or key animal and plant species? Please be specific and point to areas on the map if possible.
- Why do you believe these areas are functioning poorly? Could they (should they) be improved?
- Which areas of aquatic and riparian habitats do you think should have the highest priority for restoration?

Consistent themes:

- ◆ Identify landowner opportunities for leasing and cost-sharing arrangements to bolster riparian and aquatic habitat
- ◆ Identify and place a high priority on enhancing endemic and special species and removal of exotic and non-native species, including tamarisk and arundo. Cache Creek, Putah Creek and parts of Willow Slough were all mentioned as areas to target.
- ◆ Enhance anadromous fish passage and conditions, particularly between the Yolo Bypass and Cache Creek and at Fremont Weir, as well as develop new fisheries and maintain current fisheries
- ◆ Collaborate with flood control, and other topic areas, to best benefit all aspects involved
- ◆ Improve and monitor/research riparian habitat along major waterways including Sacramento River, Putah Creek (more trees) and Cache Creek (more trees), but with increased attention paid to Buckeye Creek (mentioned several times including streambank stabilization), Little Buckeye Creek, Cache Creek, Oat Creek, South Fork Creek, Willow, Chickahominy (too narrow and choked with weeds), Cottonwood and Union School sloughs and Willow Sough Bypass.
- ◆ Enhance levees and streambanks to incorporate more habitat components, such as planting native grasses, and removal of non-native species that decrease bank stability and increase erosion/water turbidity.
- ◆ Focus on areas where the greatest number of species can be helped.
- ◆ Continue support of the Yolo Bypass Wildlife Area, which is a good model of a multi-benefit project that serves flood control, agriculture and habitat purposes.

Water Supply & Drought Preparedness: Represented by Jacques DeBra**Questions:**

- During extended periods of drought, is more groundwater or surface water utilized in Yolo County?
- Do water users in Yolo County utilize more groundwater or surface water during normal hydrologic conditions?
- Do urban water users in Yolo County rely more on groundwater or surface water for their supplies?
- Do urban and agricultural water users provide environmental benefits?

Consistent themes:

- ◆ Address groundwater overdraft issue, increase study of aquifer
- ◆ Ensure adequate water supply for future supply needs and during drought periods (develop an adequate and pro-active drought plan)
- ◆ Increase surface water supplies for groundwater recharge, direct treatment and use, water recycling, water metering, water transfers/marketing, conjunctive use and other methods
- ◆ Support storage opportunities from regional, county and state perspectives
- ◆ Agricultural water use provides environmental benefits such as habitat enhancements.

Prioritization Criteria Input

The following is a list of the prioritization criteria and the attendees' comments and rankings. Twenty-six sheets were turned in, but most attendees did not comment on each criterion. The below criteria are listed in order of most respondents to least respondents.

- ◆ Environmental benefits (15 respondents)
 - Nine indicated as important
 - “This is very important to be included/considered in all projects.”
- ◆ Potential to address multiple issues (13 respondents)
 - Nine indicated as important
 - One indicated as secondary
 - “Would be great, but should not cloud priority goals.”
 - “Big one! Focus on solutions and actions that provide market value to farmers, ranchers for flood plain/watershed protection and combine with incentive for incidental or related benefits such as habitat and groundwater recharge.”
- ◆ Has broad public support (12 respondents)
 - Five indicated as important
 - One noted as secondary
 - “Important, but good leadership should/can change it.”
 - “This needs to be awakened to the potential benefits and generate political will to move forward with planning.”
- ◆ Agricultural benefits (12 respondents)
 - Six indicated as important
 - One noted as secondary
 - “We need to keep agricultural water viable.”
 - “A plus, but should not exceed environmental benefits.”
- ◆ Affordability (11 respondents)
 - Five indicated as important
 - One noted as third ranking
 - “Flood control is very expensive.”
 - “Think large and long-term regardless of cost.”
- ◆ Citizen benefits (11 respondents)
 - Five indicated as important
 - “Regional beneficiaries across county lines.”
 - “Broad population benefits are more important than specific population benefits.”
- ◆ Responsiveness to strategic issue (Eight respondents)
 - Four indicated as important
 - One did not understand
 - “Consistency with priorities of related region plans and plans of other regions.”
- ◆ Risk management (Seven respondents)
 - All seven ranked as important
 - “Public and property safety is number one.”
- ◆ Foundational for other projects (Seven respondents)
 - Five indicated as important
 - “Data and models are very important.”
- ◆ “Doable” (Seven respondents)

- Mixed responses
- “Why else attempt?”
- “Could redefine as ‘ready to go.’ Projects that are already designed and permitted should have some priority.”
- ◆ “Low hanging fruit” (Six respondents)
 - Two indicated as important
 - “Should it be an intention itself, since the low hanging fruit will show through the prioritization process?”
- ◆ Cost effective (Six respondents)
 - Three indicated important
 - “Consider long-term sustainability.”
- ◆ Resolves conflicts and controversy (Six respondents)
 - Three indicated as important
 - One noted as secondary
 - “Nice, but not necessary.”
 - “There is more than one solution to any conflict.”
- ◆ Demonstrated leadership/innovation (Six respondents)
 - Three indicated as important
 - “Remove this criterion.”
 - “This would be important for future funding opportunities.”
- ◆ Non-discretionary (Five respondents)
 - Two indicated as important
 - One did not understand meaning
 - “If people don’t mind getting wet, flood control is discretionary.”
- ◆ Goodwill and/or visibility (Four respondents)
 - None indicated as important
 - “Is visibility necessary? The process or the project?”
- ◆ Fundable (Four respondents)
 - Three indicated as important
 - “Outside funding should hold a lot of weight.”
- ◆ Additional criteria suggested:
 - “Close the loop- include a water recycling component.”
 - “Progressive and forward thinking.”
 - “Consider immediate versus long-term benefits.”
 - “Regional benefits.”
 - “Educational benefits.”
 - “Health benefits.”

APPENDIX

Verbatim comments from workshop

Water Supply & Drought Preparedness

Questions:

- 1) During extended periods of drought, is more groundwater or surface water utilized in Yolo County?
- 2) Do water users in Yolo County utilize more groundwater or surface water during normal hydrologic conditions?
- 3) Do urban water users in Yolo County rely more on groundwater or surface water for their supplies?
- 4) Do urban and agricultural water uses provide environmental benefits?

Comments:

1. Use of surface water for increasing reliability and security of urban water uses should be an objective. Use of surface water should be considered either for groundwater recharge or for direct treatment and use of both.
2. Groundwater Recharge: Do we have enough capacity to carryover 2-3-4 year drought? Do we have enough storage to capture winter run off and prevent flooding?
3. Water Supply - very important to ensure adequate supply for future - surface water must be considered more - i.e. proposed water from Sac for cities. Ag water must be protected - need to support more water development & storage opportunities from regional & state & county perspective
4. No new subdivisions should be allowed unless they can show a firm water supply throughout extended drought without taking it from agriculture
5. What benefit do we see in water conservation/reduced urban demand - with metering of urban use i.e. meter installation on all customers. Is that up to us?
6. I am interested in generating interest in extending the Tehama Colusa Canal to serve areas in Yolo County beyond Dunnigan Water District. Also in encouraging the political will to accomplish this. This would be water for M & I use as well as agriculture.
7. How much wastewater flows from major sources in Yolo County? How difficult is it to clean and reuse this water for different needs?
8. With the premise that drought (extended yrs) can equate economic disaster - "the Plan" should address comprehensible storage systems for future and/or drought years usage. With water wars at an all time high throughout CA we should plan on keeping our water more local or we may end up purchasing it elsewhere.
9. How much winter-run water flows through Yolo County and is lost to the sea? In a typical year, drought year, flood year.
10. Our County needs to address water needs outside of the county. Surface water transfers, conjunctive use, groundwater substitution
11. Are there any mandates to insure water in Cache Creek downstream of the inflatable dam at Capay all year?
12. We need to look into the off stream storage and water diversions that are available to us after Wild & Scenic. We need to look at YCFC&WCD system in its entirety to see how it can be improved for drought preparedness. Ground water recharge.
13. What typical urban usage rates would be necessary (how much conservation?) to get to same appropriate "load" on aquifer as ag? Should that be a goal?
14. Given the interdependencies of water issues the County, there was no input as to response to an offer to purchase significant quantities of water by MWD to be exported to So. CA

15. I am concerned about groundwater overdraft, primarily associated with out-of-county water sales. I am secondly interested in the county developing a comprehensive conjunctive use plan to improve groundwater reliability and to reduce demands on surface system in drought. Groundwater monitoring/ regulation should be on the table.
16. What about looking at ways to reduce demand?
17. Are we using all the potential surface water sources wisely? Putah, Cache, River
18. Including a water reuse/recycling component to future water supply
19. We have more people in CA already than we have water for in an extended drought.
20. Question #3: Urban relies directly on groundwater, but indirectly on surface (groundwater recharge & conjunctive use)
21. Question #4: Ag water users definitely provide environmental benefits, do the pluses exceed the minuses? A farmed field is better than asphalt, issues with water diversions & runoff.
22. There needs to be an adequate and pro-active drought plan equivalent to the attention paid to a flood plan. Find people for hosing off their driveways! Need more water conservation programs.
23. Question #2: During normal years less water is used in ag than in drought years.
24. More surface water under "normal" conditions - under drought more ground. Subsidence is a main concern in Zamora region. Water quality along Ridge Cut.
25. I am concerned about aquifer overdraft in Dunnigan & bring in a more reliable supply to meet urban growth projections. Dunnigan Water District needs to be involved in any urban water issues as well as ag.
26. We need more storage - Auburn Dam, Sites Reservoir. Drought preparedness depends on storage. More storage.
27. It would be beneficial if surface water was more widely available in the County to reduce the demand on our aquifer. The area from Woodland going northwest to Zamora then east to Knights Landing has basically no surface water available.
28. Groundwater recharge opportunities should be identified and implemented as a priority. Utilization of winter run-off as shown in YCFC&WCD recharge plan for Cache Creek is an obvious win-win. Take whatever monitoring efforts necessary to begin at least a pilot program to implement ASAP.
29. The ag land use in RD2035 supports abundant wildlife (esp. birds). Developing this land to an urban land use would degrade environmental benefits. Ag also provides more natural flood control.
30. Question #1: These questions are too general. West Sac uses surface water. The rest of the cities pump from wells - so groundwater. Ag uses surface water when available because it is cheaper. In extreme drought it's not available so they use groundwater. Question #2: Who knows. Question #3: groundwater. Question #4: Ag provide numerous environmental benefits all year. Urban water use isn't as easy to find examples of.
31. Question #1: More water is used until limits are set and enforced by water providers.
32. I am concerned that the groundwater will be controlled in a way to prevent my crops from being irrigated in favor of a more recreational or environmental enhancement rather than taking care of the basic needs first. Enhancement and pleasure is fine but lets put it down the list of priorities.
33. Ag water users do help to keep water going down sloughs and waterways through field runoff. However, with water saving, higher efficient irrigation systems (buried drip) this source could be reduced.
34. Depends on water quality i.e. metals, EC, pH! Using the water to supplement water (word not legible) and habitat can be a benefit in urban areas. Backwater/tailwater ponds can

provide wetland habitat for resident water fowl/shore birds. Flooded rice has benefit for sure albeit temporary and seasonal.

35. What do we really know about “the aquifer”? How it behaves? What its’ capacity is? How quick it recharges? If we don’t use it - does it flow down gradient?
36. Ag provides environmental benefits, i.e. rice provides habitat enhancement, food and cover for wildlife and improved water quality.
37. Is there a current water supply profile developed for Yolo County?

Flood control & storm drainage

Questions:

- 1) What are the geographic areas of concern?
- 2) How much do we know about each of these areas of concern?
- 3) What processes are already in place to deal with each of the areas?
- 4) How confident are we in what we know?
- 5) Are the issues the same in each area (i.e. is public safety an issue in all of them)?

Comments:

1. Flood control - remember that all of Yolo County has not been mapped by FEMA for 100 yr definition. Be cognizant of these areas that are prone flooding also.
2. Buckeye Creek at I-5 will flood the I-5 and 99 Highways. No channel capacity left here!
3. The FEMA flood plain designation is an economic brake on Woodland that needs alleviation. There are many suggested solutions. There are political forces in play, but a flood control program must be started to alleviate the FEMA flood plain designation. Flood plain designation hurts everyone in Woodland and is this a large problem in the county.
4. Geographic area: Woodland, Cache Creek - How much do we know? Studies exist, enough - FEMA is what FEMA does. Public safety is an issue. Woodland needs a solution to the FEMA flood plain designation. There are several solutions offered. Something must be started, now. Politics aside, some kind of flood control must be started.
5. Flood control upper watershed land use & practices greatly affect magnitude of flooding. We need programs to minimize run-off.
6. Model Yolo County waterways to identify high risk areas and areas with enough “extra” capacity to support alternative management that is environmentally friendly (provides habitat). Consider purchasing setbacks for flood control and environmental enhancement.
7. Where do I get foundation information on issues I am interested in (studies, empirical data, proposed solutions etc). Particularly Cache Creek/Woodland flood issue
8. Lots of the rural areas have nuisance flooding (i.e. lower Willow Slough watershed) that is the result of land-leveling and inadequate maintenance of private drainage ditches.
9. Need to make sure that integrated plan advances the most important issues, not just (word not legible) that can get state funding. Also, need to make sure that if the integrated plan does not solve an important problem, it moves Yolo County toward the real, long-term solution
10. We need a focused effort on Woodland flood issues. Can plan help quantify impacts of not having flood protection in Woodland?
11. Yolo Bypass - What is going to be done with the sedimentation to keep Cache Creek or Bypass from further elevation to prevent flooding?
12. Words are important - it is a lower Cache Creek problem which impacts north and south of Cache Creek including parts of Woodland
13. Flood solutions for one area (such as Woodland) cannot disadvantage other areas such as Yolo or Knights Landing

14. Remember that 67% of Woodlanders voted for a regional flood solution - and earlier rejected funding a Woodland only flood solution
15. This issue is very tied to the drought and water supply component. Water saved is water that won't damage through flooding
16. Lois Wolk is talking about flood control legislation - is her staff involved in this process?
17. Can we ignore expert opinion that levees fail - look at Jones Tract, New Orleans etc. Don't we need to look at financial incentives such as requiring all who are protected by levees to buy flood insurance?
18. Plan should develop & implement a sub-group to better solve problems of Yolo County and Cache Creek. Not just as a City of Woodland issue.
19. Concern: Fish & Game and Fish & Wildlife - purchasing and managing bypass (Yolo & Sutter) areas and jeopardizing flood management
20. Both the Woodland mayor and the Woodland Chamber representative said that Woodlanders want some study other than the FEMA map to convince them that the flood threat from Cache Creek is real. WRA ought to commission such a study.
21. Flooding & Water Storage: marry the two needs and concern. Need more storage - throughout Northern CA - water supply and flood control minimization. Perhaps many smaller reservoirs to provide the above and environmental enhancement
22. Concern: sedimentation build-up in Cache Creek settling area & bypass area - minimization of buildup
23. Plan should emphasize in-stream, environmentally sound actions in Cache Creek to increase high water capacity, such as vegetation control and levee improvements (another wrote Yes)
24. Who can afford to put levees up for ag land? Who can afford that? Do farmers pay the cost or do they get cities to protect their land so it can be developed?
25. Include in the IRWMP the Colusa Basin Drainage District IR plan for northern Yolo County, Colusa & Glenn County. Some valuable data has been generated which could be gleaned for this plan covering the same topics.
26. Yolo Bypass and tributaries. Lower-lying areas that are being developed. Areas protected by levees instead of elevation relative to likely sources(s) of flooding.
27. Health & safety needs to be a very high prioritization item
28. Control flood problems by keeping development out of flood plains.
29. What is the cost of levee improvements to provide flood insurance relief for the most amount of people? If providing flood relief in the most populated areas.
30. Focus on the flood control area that has the most impact on the most people and risk to life and property
31. 100-year protection is inadequate - poor public policy!
32. Can the PowerPoint presentation be used? Evacuation plan for Clarksburg. Levee management. Time considerations. Where are the weak areas in the Sacramento River? Flood control by island. Post maps to website.
33. Possibility of legislation to modify environmental requirements in levee cleaning and maintenance. Since state may be liable for flood damage caused by failure to maintain levees, can political leverage be increased?
34. Since the gravel companies are responsible for the increased channel capacity that can carry big flood flows past the Plainfield Ridge, they should donate equipment hours to maintain levees north of Woodland and/or help build a floodwall north of town. The Floodwall should not connect with the settling basin, but should just let the water go around Woodland. (drew a little map)
35. We need to make sure Lake County is in the process (early)

36. Cache Creek needs to be upgraded to provide at least 100 yr protection to both sides - north south / town of Yolo & Woodland (entire watershed). A combination approach to increasing protection (off stream water storage, cleaning out shrubs & debris, raising & improving levees) needs to be evaluated & studied.
37. Note that a large area of Woodland has only “nuisance flooding” as Tim defined it. Have to look at the flood elevation certificates that engineers have done. Is one remedy not allowing further development in the flood plain? Would it not be helpful to really break apart Woodland’s floodplain into minor (no public safety issues) and areas where there is a public safety issue? Would help to have a real economic look at solutions and cost of alternatives - one of which is doing nothing.
38. Do we know planning cumulative impacts of upstream land use changes on Yolo flooding?
39. My concern is that there is an overall plan that includes all three (plus?) areas that are suspected flooding problems. My concern is also we are ensuring an adequate water supply for our region. Development of the settling basin so that it is functional.
40. Storm drainage: Low impact development. Look at city ordinance codes etc and mandate implementation of WD management measures. The emphasis is on retaining the hydrograph and not moving the water offsite.
41. Yolo County could create a set of maps like the Sac Bee flood series.
42. Think about actions that both assist with flood control and the environment (e.g. ponds, wetlands, hill “reservoirs”)
43. I am not sure how you feel a yelling break-out session and 5x7 post-it notes will provide true public input and provide answers that people really wish.
44. Sacramento River Flood Control Project. Yolo Bypass and its extreme importance not only to Yolo Co. but the entire lower Sac Valley from the Sutter Buttes to Rio Vista
45. Flood plain management that combines protection of flood plain and ag land, habitat open space and urban edge protection via conservation easements and compensating payments to growers for the scale of benefits provided
46. The Sac River Westside Levee District is very willing and able to help you understand the issues along to Sacramento River system regarding flood control. Contact: Tom Ellis or Lewis Bair, Mgr Sac River Westside Levee District or Fritz Durst
47. Flood Control Areas: Sac River, Colusa Basin Drain, Hungry Hollow (north of Esparto)
48. Flood Control: Within “the plan” address a regional plan to protect residents and agricultural interests fairly and equally to protect future development of each. Address weak levee system and/or inadequate levee systems or non-existing levees in low-lying areas w/history of overflow. Design “water overflow” in wet years to capture and store water resources for drought year usage.
49. Consider a political entity to address storm drainage in the County, i.e. the rural undeveloped areas.
50. Can we assist Sacramento flood problems by diverting high Sac River flows into Yolo County storage?
51. Attempt flood actions that are multi-benefit and are the least environmentally degrading (e.g. major earth movement, concrete etc.
52. Biggest area of concern Sac River levees and Yolo Bypass. They are mostly below standard and SAFCA is going to be an important factor to consider.
53. Development of reservoirs along upper Cache Creek as well as the use of reclaimed mining areas along the lower stretches could prove to be extremely beneficial for flood control, storm drainage, water recharge and help to expand surface irrigation.
54. An integrated approach involving: 1) rangeland improvement > convert annual grassland to perennial for greatly increased infiltration rates. 2) hill ponds, in some areas of the foothills

there are redundant reservoir sites, capable of collecting over 50% of run-off and having tremendous wildlife benefits.3) no more building in flood plains

55. What would happen to Davis if Monticello Dam broke? How quick? How deep?
56. For Woodland and (word not legible), It's already too late again, but why haven't the gravel companies been asked to increase the flood flow capacity of Cache Creek where it is the shallowest? The County could use the money from the sale of the aggregate. Is the office of Emergency Services still subject to flooding?
57. What is the worst case scenario for City of Davis? How deep? How long?
58. Woodland flood issues should be addressed separately and ASAP. It is critical to both residential and commercial development due to the flood plain map showing various levels (depths) of flooding at different elevations, potentially one lot adjacent to another would not meet requirements for development; this leaving vacant lots throughout the areas of the community
59. What is potential worst case impact to Yolo County of flood events such as: Sac River massive levee breaks, Folsom Dam breach, major rain event and subsequent flooding of all local rivers. Plan should include maps of projected impacts.
60. How much storage would need to be built on Cache Creek to protect Woodland from a 100 year flood?
61. Need to look at all the areas of Yolo Co. as a regional approach to flooding: levees of Cache Creek, Sacramento River levee system. Need to look at possible small retention dams to reduce the flood plain flooding problems. Also would help Cache Creek flooding. The fourth area to address is the Colusa Basin in northern Yolo Co.
62. Risk of Berryessa failure? Evacuation plans?
63. Process: avoid recycling old out-of-date information. Avoid project or project components that preclude other valuable projects of future project components (must weigh benefits objectively). Use objective science-based process and information to support plan formulation and prioritization process. Must factor in maintenance for all physical projects.
64. Can we do flood control projects that have multiple benefits, e.g. habitat re-vegetation, weed control, flood plain restoration. Storm water drainage and new development and water quality is a concern.
65. There is and has been a need to solve the flooding of Esparto, Madison, east & west of I-505. While Woodland is worrying about a 100 yr. storm, western Yolo floods every wet winter. The most recent flooding was 2004. A plan to dump floodwater - Willow Slough & Lamb Valley - into Cache Creek was killed. Since Cache Creek is now a wild river, will we ever be able to reactivate this plan?

Recreation

Questions:

- 1) Are there adequate water-related recreational opportunities available to Yolo County residents?
- 2) If no, what kinds of opportunities would you most like to see increased in Yolo County?
- 3) Where would you like to see these opportunities located in Yolo County?
- 4) Are there existing water-related recreational opportunities in Yolo County that you believe should be modified?

Comments:

1. Connect American River trail to Cache Creek new trail
2. Protect private property and limit access
3. Like to see horseback riding trails along riparian areas

4. Clean boating and marina programs; Abandoned vessel removal; Trail access for aquatic uses; Consistency with other recreation parks - DPC, State parks
5. Legal access along Cache Creek near Woodland
6. Increased access to Lake Berryessa
7. Get Off Highway Vehicles (OHV) out of Cache Creek (another person agreed)
8. Develop OHV Park?
9. Even though recreation is a major impact to the County, but priority of recreation should be last in priority. The recreation plan should enhance agricultural and public use. Let's not forget recreation is the fun part of life and should not take precedence over basic needs. (Another person wrote - "completely disagree")
10. Access to waterways i.e. trails, access points in private areas
11. As part of "the plan": ensure Cache Creek rafting & other recreational activities continue; Yolo Wildlife Basin enhance educational tours & opportunities to Yolo residents and those interested from outside areas
12. Water trails along Sacramento River, Cache Creek and Putah Creek
13. Would like to see more public/private recreational opportunities that benefit farmers/ranchers
14. Needs to be adequate water for winter waterfowl for hunting
15. More hiking, picnicking, fishing, please! Recreational access to wild lands increases public willingness to support money for protection of these area
16. Canoe/kayak access to Ridge Cut
17. YBWA: 1) recognize importance to wildlife, recreation & tourism; 2) preserve & enhance; 3) Expand concept to other parts of County; 4) Recognize for multi-purpose use - recreation, hunting, farming, birding, education + + +
18. Water projects should be multi-use, multi-benefit for recreation
19. Could Colusa Drain project include recreational improvements for Knights Landing?
20. Public access should be included in all/any water project
21. More access to Cache & Putah Creek. Fix up Camp Haswell, please!
22. Currently water-related recreation is available along the Sacramento River (boating, skiing, fishing), on upper Cache Creek (rafting, fishing) and Putah Creek. If reservoirs were developed along Cache Creek they would benefit recreation uses, water storage capacity, flood control & potential ground water recharge.
23. Consider recreational needs carefully to protect land rights and not encroach unduly in agricultural production areas. Engage willing landowners for partners.
24. #3 Question- where? Don't open up access where it would be hard to control and would cause problems for neighbors.
25. Concern should be placed on the needs of adjacent landowners: trespass, vandalism, liability for injury
26. Bird life in RD 2035 is abundant. Public access for bird watching would be great.
27. Need to do more about getting OHV's out of Cache Creek
28. More hiking opportunities close to urban areas; e.g. trails along Willow Slough, lower Cache Creek
29. I believe that the WRA should start planning for a major long-term recreation project along Cache Creek, one that would serve very large numbers of people. It is a stream-side trail for biking, foot traffic, and horseback riding - essentially a Yolo County equivalent of Sacramento's American River Parkway. There would be a lot of objections to be overcome before any such project could be built. For starters, the stream-side land is privately-owned. Could the land-owners be convinced to accept such a trail? How about if the County reduced or eliminated its property taxes on the stream-side land, or if it bought easements at

a good price? The land-owners and other neighbors would be worried about law-enforcement problems and trash being left on or by their property. So the county would need to make a major financial commitment to maintaining and patrolling the trail. While the objections may seem more compelling than the idea of having such a trail, help would almost certainly be available from the state and we shouldn't wait until there are 500,000 people in Yolo County before we begin to plan for their recreational needs.

Riparian & Aquatic Ecosystem Enhancement

Questions:

- 1) Where in Yolo County do you think the aquatic and riparian habitats are functioning *best* to support important or key animal and plant species? Please be specific, and point to areas on the map if possible.
- 2) Why do you believe these areas are the best? Could they be improved?
- 3) Where in Yolo County do you think the aquatic and riparian habitats are functioning *most poorly* to support important or key animal and plant species? Please be specific, and point to areas on the map if possible.
- 4) Why do you believe these areas are functioning poorly? Could they (should they) be improved?
- 5) Which areas of aquatic and riparian habitats do you think should have the highest priority for restoration?

Comments:

1. Those areas where marginal ag lands can provide incidental income for growers who restore riparian and wetland habitat
2. Please focus on removal of exotic & invasive species in Cache & Putah Creek
3. Place high priority where endemic and special status species are affected
4. Places where the greatest cooperation between landowners (adjacent) is possible so that corridors can be achieved
5. GIS mapping to identify species; conservation easement opportunities; invasive species removal; consistency with DPC management plan
6. Anadromous fish passage should be provided to connect fish from the Yolo Bypass with Cache Creek. It looks like a single obstacle prevents access to abundant spawning gravel that could support an intermittent run
7. Intact natural areas (exotic control); Sloughs & drainage-grant potential; Irrigation canals- not all but +/- 20% potential demonstration at Hedgerow Farms would link many (word not legible) corridors
8. There is a need for managing parts of the Yolo Bypass for fish as well as waterfowl
9. Areas/places where greatest impact to downstream neighbors (e.g. top of watershed)
10. Please consider whole rivers or corridors for riparian restoration. Starting in rangelands but still include lowlands/croplands
11. Buckeye Creek and Little Buckeye Creek are eroding, have riparian habitats that are in decline
12. Along small creeks and drainages that have been straightened, narrowed and are inappropriately maintained. Improving small drainages and ponds could improve habitat, water quality & flood control. Lower Cache Creek - the section most in need of help and least helped by Wolk's Wild & Scenic bill.
13. Tree canopy needs to be re-established along portions of Cache Creek
14. High priority should be given to areas that also function as flood buffers or "water filters"

15. Levees should try to incorporate habitat components. Native grasses would provide numerous benefits: reduced erosion, improved habitat, control of invasive weeds. Pilot projects with monitoring should be considered.
16. Protect, enhance, restore the biological resources of the sloughs throughout Yolo County
17. South Fork of Putah Creek (lower) (could be in response to Question #3)
18. Willow Slough and Willow Slough bypass corridors could be enhanced
19. Cache Creek from I-505 on down. Willow Slough further down, below Road 87, same with Chickahominy, Cottonwood and Union School (another agreed). Buckeye Creek in No. Yolo and Oat Creek
20. More monitoring could help identify priority areas for habitat - monitoring Putah Creek radically changed perceptions about its importance for birds
21. Recommendations/Priorities: canal re-vegetation projects; creating or increasing flood plains in sloughs/waterways that have habitat flood control benefits; create monitoring/research related to habitat/riparian projects to measure success as well as test assumptions; do above in cooperation with landowners; focus on riparian system rather than species
22. Places where the greatest impact to numbers of species can be reached- aquatic, avian, mammals, plants etc.
23. Buckeye Creek needs some attention. Huge flood events and tremendous sediment loads.
24. RCD and Audubon CA are doing a great job of riparian restoration with cooperating landowners, if more funding is available sent it to these guys
25. Capay Valley reach of Cache Creek is a good place for native fish etc., but needs a wider riparian corridor and plans to improve aquatic habitat
26. While Putah Creek and Cache Creek are “big ticket” items - all of the smaller tributaries (including canals) have a huge ability to add major miles of enhanced habitat
27. Needs: studies on reintroduction of salmon and steelhead a need on Cache Creek; all projects must protect, restore, enhance riparian habitat; work on (word not legible- Fremont?) all year water flows to enhance fisheries, (word not legible - prevent stranding?); implement shallow water fisheries project in the bypass (another agreed)
28. Sometimes flood management activities may negatively impact riparian and aquatic ecosystem unnecessarily. I'd like to see more win-win solutions for flood control & habitat provision
29. Best riparian habitats: county line to Capay Dam, because more vegetation, less development; Capay Dam to I-505 need some help, because industrial disturbance; I-505 to settling basin has good habitats but need erosion control & increased carrying capacity
30. Buckeye Creek needs more streambank stabilization. Farming practices along the drainage need to be addressed
31. Cache Creek below the Capay Diversion Dam functions poorly as aquatic habitat - not enough water, poorly defined channel, no access for migration fish
32. Fish passage past Fremont Weir needs to be improved for salmon and sturgeon (another agreed)
33. Remove tamarisk, arundo, and other weeds from Cache Creek in Capay Valley; generally good riparian habitat - but threatened by invasive species and substantial erosion; erosion = sediment in water= turbidity/pollution; improve by less weeds and more bank stabilization where appropriate
34. Riparian health depends upon the flow of the waterway. Cache Creek in many places needs to be managed to reduce erosion - large vegetation in stream should not be allowed

35. Within “the plan”: continue to identify ecological benefits to specific areas of needed development - enhance current areas, develop new areas, protect natural habitat. [These 3 items] in a mutually benefit comprehensive plan that address major safety issues first and educational and recreational issues as well.
36. Ecosystem enhancement - removal of invasive species on Cache Creek and habitat restoration
37. Water quality could be improved along Ridge Cut by buying or importing water from Sac River water districts
38. Some is because of existing ag practices - “fenceline to fenceline” farming, removal of vegetation, runoff etc. Other is due to major disturbance like gravel mining. Other is due to massive invasive arundo and tamarisk.
39. They are the most undisturbed or they have excellent land steward (usually private) who really care - of course always room for improvement
40. Improvement: how on private land - cost-sharing funding, incentives etc., to help landowners keep up their work or continue enhancement because it is expensive and labor intensive and needs technical skills
41. The Yolo Bypass Wildlife Area provides a great opportunity to support agriculture, birds, fish and other wildlife. I want there to be balance between habitats provided in the Wildlife area. (Question #2)
42. General comments: need to take pragmatic, scientific approach to balancing need for ecosystem, ag and urban interfacing.
43. South Fork Creek needs some TLC but has great potential and possible partnership with agencies and landowners
44. Ag drainage and canals are (word not legible - clear farmed?) or are dominated by exotics. 20% or more of the 200 miles of canals could be functioning riparian systems without impacting ag and even helping ag. Canals and sloughs can provide important corridors between large natural areas.
45. I would like to see the WRA form a committee of fisheries people, engineers, and YCFCWCD representatives to see if it is feasible to make Cache Creek into a salmon fishery with acceptable costs of money and irrigation water and without causing undesirable changes in stream biology.
46. Yolo Bypass serves multiple purposes of flood control, agriculture and riparian and seasonal floodplain habitat
47. Putah Creek is functioning as a good riparian habitat corridor and Lower Putah Creek Coordinating Committee and UC Davis are working to make it even better
48. Yolo Bypass is a good model for multi-benefit flood control, agriculture and habitat provision. Bypasses along other waterways, such as Colusa Basin Drain should be considered.
49. Areas in good shape for habitat - Yolo Bypass. Good for wildlife, waterfowl, recreation. Areas that need help - fish passage through Yolo Bypass, need more trees on lower Putah Creek and especially on Cache Creek
50. NRCS Wetlands Reserve Program helping to improve riparian and wetland habitat along RD 2047 - 3,500 AC
51. RD 2035 (Conaway Ranch) supports habitat for much birdlife. The population appears to be quite diverse. The current agriculture use supports this habitat. Plans to develop this land would eliminate this bird habitat
52. Putah Creek between Monticello and PC Diversion Dam functions well for a trout stream. Excellent fish and riparian habitat below the diversion dam. Needed: Wider

- riparian habitats needed and ways to decrease down cutting of channel and improvements of spawning habitat for salmon.
53. Best Areas: portions of Cache & Putah Creek, Willow & Union School Sloughs where extensive weed removal and restoration has taken place. Yolo Bypass too. Most Poorly: bare canals or sloughs that have been narrowed, sloughs choked with weeds (esp. arundo) Chickahominy along 128 by DQ University is an example
 54. Parts of Putah Creek, Upper Cache, parts of Willow Slough, some small tributaries especially in the hills
 55. Along Sac River and Ridge Cut Drain. Water birds along Ridge Cut, beaver, others and fish along Sac River
 56. On Cache Creek areas visible to the public should be improve to help promote support for enhancement of less accessible areas. Areas where both water and better soils are readily available are easiest and most cost effective but emphasis should be on terra form which will support natural re-uses.
 57. Arundo/ invasive species removal/control (Question #1)
 58. (Question #1): Putah Creek upper and lower because of the (word not legible - habitat?) offered to anadromous fisher. Also, historic and newly developing riparian vegetation serves to support Swainson's Hawk and a long list of migratory and resident birds, reptiles, amphibians, mammals. Yolo Basin SNC/Wildlife area key to migratory waterfowl, SWHA and salmon movement.
 59. Thanks to all those responsible for bringing salmon back to Putah Creek! Now let's get exotic weeds out!
 60. Rice fields support incredible biodiversity summer and winter
 61. Putah & Cache Creek, Willow Slough probably best but all are negatively impacted esp. in famed areas. Main impacts are exotics. Canals and Union School Slough on Hedgerow Farms very functional and demonstrate the potential of restoring riparian function to our canals
 62. Resource Conservation District Willows Slough Watershed Plan has prioritized sloughs as to their restoration potential - high, medium, low. Call Paul Robins or Phil Hogan
 63. Conaway Ranch Conservation Reserve Enhancement Program (CREP) lands
 64. Must develop more water resources! Stop trying to manage water that we have when more straws are sucking from a set number of gallons. More water means more possible uses.
 65. The Sac River provides a lot of habitat with its riparian growth (large trees included)
 66. Do riparian habitat where you have cooperating landowners

Water Quality

Questions:

- 1) Do you have concerns about the water quality at your home, such as hardness, taste, odors, etc?
- 2) Do these concerns change your habits, such as using bottled water or a water filter?
- 3) What are the most important water quality problems in the County?
- 4) Are you worried about the aquifer?
- 5) Do you each fish out of local waters?
- 6) If you practice water contact recreation sports in Yolo County, such as swimming, boating or fishing, do you worry about water quality?

Comments:

1. Urban non-point storm water pollution prevention. Groundwater high in salt. Wastewater treatment going to be given constraints on salts, which will cause significant costs to control.
2. Thank you for planning water use/flooding holistically! It is so rare for a County to do this.
3. Water quality needs continuous monitoring in Putah & Cache Creek - its ability to support diverse fish & fisheries. Dilution of Ag return water may be important for Cache Creek.
4. No way would I eat fish caught anywhere in the Sac/San Joaquin valleys!
5. Yes, City of Davis water is very hard. It is unfortunate to not be able to drink tap water. Although Sacramento River water use seems to be a lengthy process and I'm not sure if that will come to fruition.
6. Improving the quality of Putah Creek should be an objective or action included in the IRWMP. This overlaps with aquatic ecosystem enhancement and recreation (addresses multiple issue areas).
7. Implement better storm water run off containment. We know good ways to filter and contain storm water run off, but don't do a good job of requiring new developments to implement these, e.g. grass swales in parking lots; trees, trees, trees; bioswale detention basins
8. Understanding long-term water quality trends, i.e., aquifer specific monitoring to understand influence of hydrologic stresses on future water quality (esp. groundwater)
9. Policy at County level for well construction protective of long-term beneficial use by private well owners.
10. Extension of the Tehama-Colusa Canal beyond Dunnigan Water District to Oak Creek Reservoir and beyond to Noonan Reservoir would bring high quality upper Sacramento River water for us in M & I areas of Woodland, Davis, Winters, & Vacaville. The TC Canal Authority will be available with a PowerPoint presentation on this subject in early 2006.
11. Summary & publicize water quality issues more. Promote multi-purpose in-stream flow/riparian & aquatic habitat projects
12. Public health & safety criteria. Salinity. Opportunities to utilize dredge spoils for levee maintenance in Delta. Fisheries (social aspects & impacts to many communities, etc.). Programs to develop environmentally sound boating and marinas
13. At future IRWMP meetings, consider informing public about water quality issues as well as asking public opinion
14. Concerns/Questions: Will water quality, esp. mercury, affect future habitat restoration? Don't eat fish but do fish have concerns regarding water quality and fish populations? Do have concerns regarding drinking water . Ag waiver & NPS & changes by regional board and the ag waiver coalition seems onerous to landowners. Groundwater: what is the state of the aquifer and amount of water/recharge? Increased development causing runoff, increase & impact to agriculture & habitat
15. Groundwater supply general: containments- hydrocarbons, ag run off, mercury, boron, nitrates. Storm water Ag/construction. Wastewater Discharge - water quality arriving in Yolo County from upstream discharge (municipal & ag)
16. Protection of drinking water quality should be a high priority. Clean up of superfund sites (e.g. Frontier Fertilizer) that threaten drinking water supplies should be priority actions. Addressing mercury in Cache Creek should also be a priority.
17. Water Quality Concerns: plan must address protection of beneficial uses per the Basin Plan; priority load reduction; reduce pesticide/nutrient/sediment contamination of water
18. Yes, I only swim in Sac River & Cache Creek
19. I like to swim in Putah Creek and I do worry about water quality.

20. Yes, we have taken our groundwater for granted for far too long. As a farmer, I try to use pesticides and fertilizers wisely, but not everyone does as I do. I am concerned with excessive nitrates in my drinking water.
21. Surface ag water that damages the crops applied to. Rice irrigated from Colusa Basin Drain injures the crops.
22. Within “the plan”, address storm water run off issues by practicing local and regional BMPs (best management practices) for such. Water quality is important: to the ecosystem, to recreation, to water recharge, to water quality, to the region.
23. Water quality Issues: mercury in Cache Creek, nitrate contamination of drinking water, salinity build-up countywide. Criteria: long-term trend effects, ease of meeting standards
24. How does a city deal with the run off from the ag fields - affecting the city run off quality entering the Sac River?
25. Yes, taste and smell are very important to me. Hardness less so
26. Question #1: Yes, our water quality is diminishing. Question #2: I’m worried that county ordinances might prohibit the exercising of our aquifer. We will never know what our safe yield is unless we pump
27. Monitoring - Can we coordinate water quality monitoring with all the various entities doing work along Cache Creek?
28. Don’t forget about the Colusa Drain which empties into the Sac River at Knights Landing or into the Yolo Bypass. There is a study currently going on to put more water in the bypass (clean up the river). Effects on flood control, effects on agriculture, effects on the City of Woodland, effects on drainage?
29. Yes, I’m worried about irreversible subsidence in the Yolo County aquifers.
30. Heavy metals in the system - this will be a major problem in the future. Has stopped or hindered positive projects that need to be done, i.e. removing sediment from bypass, removing sediment from settling basin
31. As we all know the water quality in Woodland area is terrible. Boron levels in the upper water stratus is so high that it limits what crops can be grown without tapping into deeper zones. Domestically this water is extremely hard on plumbing and appliances.
32. Include in the project database the reconnaissance study on the Knights Landing Ridge Cut addressing improved water quality through the bypass prior to flowing into the Sacramento River.
33. We need surface water supplies for the cities so we don’t have to depend on salty groundwater.
34. The County should encourage organic farming in Capay Valley to improve water quality & bring more ag/tourism and increase riparian habitat.
35. Have we struck right balance on EC limits on waters (effluent, groundwater pumping, etc) discharged to waters of US? Seems we are overly restrictive (Regional Board Issue). Don’t know how much farmers care.
36. Need more cover crops planted during winter to minimize run off and improve what water that does run off.
37. Concern regarding direction/needs/requirement of Regional Water Quality Board & staff regarding ag water discharge. How is ag going to comply with regulations, economically - storm run off etc.
38. I don’t drink my well water because I haven’t had it tested and not sure how deep it is or water quality.
39. Eventually cities & unincorporated communities will need surface water both for quantity and quality concerns. It is time to start & continue working on this.

40. Yes, overdraft. Wells go deeper and deeper to avoid salts & minerals.
41. Rural residential groundwater quality. Domestic wells tapping shallow aquifer.
42. Cache Creek - No. Colusa Basin - No. Sac River - Yes. Putah Creek upper - Yes.
43. Long-term water quality protection, protection of recharge areas; source control of contaminants and salts.
44. Hard water in Davis leading to use of water softeners. EC in effluent problems for ag and pollution treatment and habitat use.
45. Question #1: Yes, hard water in Davis.
46. Question #2: Yes, I have a water softener.
47. Question #3: Mercury in Cache Creek. Nitrates in groundwater.
48. Yes, just installed a reverse osmosis water treatment in my home. Woodland water used to be drinkable, now not so.
49. Question #4: Yes
50. Question #5: No
51. Question #6: No, don't drink the water.



WATER RESOURCES ASSOCIATION

O F Y O L O C O U N T Y

Integrated Regional Water Management Plan

Davis, City of
Dunnigan Water District
Reclamation District 2035
University of California, Davis
West Sacramento, City of
Winters, City of
Woodland, City of
Yolo County
Yolo County Flood Control &
Water Conservation District

Help plan for the future of your water resources

The Water Resources Association of Yolo County (WRA) is a group of local entities working together to provide a water-planning forum.

Currently, the WRA is developing Yolo County's first Integrated Regional Water Management Plan (IRWMP). The IRWMP will serve as a planning document to help guide water **actions** (programs, policies and projects) within Yolo County and be updated into the future. The actions will be divided into five areas:

- water supply and drought preparedness
- water quality
- flood and storm water management
- recreation
- riparian and aquatic ecosystem enhancement

While flood control for the city of Woodland will be included during development of the IRWMP and addressed at the May 8 community workshop, it should be noted that a **separate** public process will take place regarding this issue in the near future. Please contact info@yolowra.org for more information.

Efforts to date

The WRA's first community workshop on November 30, 2005 was well-attended

The first workshop included:

- 104 attendees
- Overview of the IRWMP purpose and process
- Role of prioritization criteria
- Topic area break-out sessions for public comment

and the project team gathered insightful **input about issues and actions** within the five key areas. Input also was received about the **prioritization criteria** — the guidelines that will help decide what water resource actions should be addressed first.

Since the first workshop, the WRA Technical Committee has:

- developed draft prioritization criteria (using input received at the workshop).
- identified a list of individual (within one of the five areas) and integrated (encompassing more than one of the five areas) actions.
- drafted some key elements of the IRWMP including a report outline, a list of findings and issues for the five key areas and a report glossary.

The second IRWMP community workshop is Monday, May 8, at the Heidrick Ag History Center from 4:30 to 7 p.m.

We need continued public input to develop the IRWMP! Insight from interested parties — people like you — is one of the critical steps to developing a comprehensive IRWMP for Yolo County.

The upcoming May 8 public meeting will focus on:

- describing individual and integrated actions for the public and obtaining public input about the actions.
- providing an overview of the prioritization criteria and how they will be used with the priority actions.

Please visit the WRA Web site at www.yolowra.org/irwmp_documents.html to review the draft prioritization criteria, a potential action list, an IRWMP outline and other IRWMP-related documents.

Next steps

The WRA Technical Committee will prioritize the IRWMP actions (a list of potential actions is available on the Web site). This will allow the WRA to highlight priority actions within the IRWMP and, in addition to serving as a guide for the future of Yolo County water resources, increase opportunities for obtaining outside funding.

The WRA obtained a \$500,000 planning grant for the Yolo County IRWMP under Prop 50 (the 2002 general obligation bond passed by California voters for improving a variety of water projects throughout the state). The IRWMP will also be used to seek additional outside funding to help implement IRWMP actions. **The goal is to adopt a completed IRWMP by January 2007.**

Stay informed about the IRWMP and give your input!

- Attend the May 8 workshop.
- Watch for periodic newsletters about IRWMP developments.
- Attend additional future community workshops.
- Visit the project Web site, www.yolowra.org, to get information.

If you wish to speak to someone about the IRWMP or be added to the mailing list, please contact David Scheuring, WRA chair, or Donna Gentile, administrative coordinator, at (530) 666-2733 or info@yolowra.org.

Water Resources Association
of Yolo County

P.O. Box 8624
Woodland, CA 95776

(530) 666-2733

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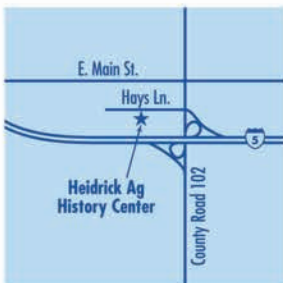
COMMUNITY WORKSHOP MAY 8 FUTURE OF WATER RESOURCES IN YOLO COUNTY

PRESORT
FIRST CLASS

Your Opinion Matters!



Help improve water resources management in your area. Share your ideas or suggestions about potential water-related actions in Yolo County. Attend the second community workshop on Monday, May 8 from 4:30 to 7 p.m. at the Heidrick Ag History Center in Woodland (www.aghistory.org)



COMMUNITY WORKSHOP
Monday, May 8 from 4:30 to 7 p.m.
Heidrick Ag History Center
1962 Hays Lane, Woodland

DIRECTIONS TO THE COMMUNITY WORKSHOP

Approaching Woodland from the South

on I-5: Exit on County Road 102. At the top of the ramp (signal light), drive straight ahead into Hays Lane. The history center is located at 1962 Hays Lane, on the left, approximately two-tenths of a mile.

Approaching Woodland from the North

on I-5: Exit on County Road 102. Turn left at the top of the ramp, crossing over I-5. Take the first left (Hays Lane) and proceed to the museum.

Key IRWMP Milestones

- May** Second public workshop
- June–Aug.** Review public input; continue investigating and developing priority actions, developing draft IRWMP
- September** Draft IRWMP available
- Oct.–Nov.** Finalize IRWMP
- December** Adopt IRWMP
- Next public workshop:** Late summer/fall '06

Water Resources Association of Yolo County Public Workshop Meeting Summary – May 8, 2006

Public Attendees

Approximately 70 interested persons attended the Integrated Regional Water Management Plan (IRWMP) community workshop on May 8, 2006 at Heidrick Ag History Center in Woodland.

All members of the Water Resources Association of Yolo County (WRA) Technical Committee were present as were many members of the Board of Directors.

WRA Technical Committee Member Attendees:

- ◆ Jacques DeBra, City of Davis Public Works and WRA Board
- ◆ Sid England, University of California, Davis and WRA Board
- ◆ Gary Wegener, City of Woodland
- ◆ Doug Baxter, City of Woodland
- ◆ Mark Cocke, City of Woodland
- ◆ Donita Hendrix, Dunnigan Water District
- ◆ Charlie Simpson, City of Winters
- ◆ Max Stevenson, Yolo County Flood Control & Water Conservation District
- ◆ Tim O'Halloran, Yolo County Flood Control & Water Conservation District
- ◆ Petrea Marchand, Yolo County Planning, Resources & Public Works
- ◆ Bill Brewster, Department of Water Resources
- ◆ Tasmin Eusuff, Department of Water Resources

WRA Board of Directors Attendees:

- ◆ David Scheuring, Yolo County Flood Control & Water Conservation District
- ◆ Kurt Balasek, City of Winters

Local Electeds Attendees:

- ◆ Matt Rexroad, City of Woodland and WRA Board
- ◆ Duane Chamberlain, Yolo County Board of Supervisors and WRA Board

Consultant Team Attendees:

- ◆ Fran Borcalli, Wood Rodgers, Inc.
- ◆ Rob Beggs, Brown & Caldwell
- ◆ Steve Chainey, MIG
- ◆ Gerrit Platenkamp, MIG
- ◆ Dave Anderson, West Yost & Associates
- ◆ Lucy Eidam, Lucy & Company
- ◆ Josh Newcom, Lucy & Company

Media Attendees:

- ◆ Ben Antonius, Woodland Daily Democrat

Welcome/Introductions

Lucy Eidam, meeting facilitator, welcomed everyone and introduced the project team. She explained that the purpose of the meeting would be to provide information and answer questions about the IRWMP process and expected outcome. The WRA is requesting public input on the potential action list, the prioritization approach and other ideas to improve the plan. All input will be considered during the development of the IRWMP. Eidam then outlined simple ground rules for meeting conduct.

Presentation Summary and Overview

One public workshop was held from 4:30 to 7 p.m. on May 8, 2006. The workshop consisted of a brief project introduction by David Scheuring, WRA chair, including an overview of the Water Resources Association of Yolo County (WRA), its members and the WRA Board of Directors.

Scheuring turned the presentation over to Jacques DeBra, City of Davis Public Works. DeBra provided a brief overview of the IRWMP, reiterating that developing an IRWMP is an important step toward inclusive, collective and improved management of Yolo County's water resources. Through the process of developing the IRWMP, issues and actions will be identified in five main areas: water supply and drought preparedness, water quality, flood control and storm drainage, riparian and aquatic ecosystem enhancement, and recreation. The plan will continue to include input from community workshops, individual stakeholder meetings, the WRA Board/Technical Committee and the WRA's website. A potential action list has been developed and distributed today for input. An IRWMP Action is defined as a program, policy or project. The next steps are to prioritize the actions, develop an implementation strategy and pursue funding when feasible. The purposes of Yolo County's IRWMP are to update past planning efforts from 1984 and 1992; provide a comprehensive resource planning effort; provide a regional blueprint that includes priority actions and good ideas requiring further study; and position the region for relevant funding opportunities. The IRWMP is being developed with the assistance of a \$500,000 planning grant from Proposition 50 and local matching funds. A project timeline illustrated the scheduled adoption of the completed plan by January 2007. The plan should be updated every 5-10 years. DeBra concluded his portion of the presentation by asking the group if there were any questions.

Tim O'Halloran, general manager for the Yolo County Flood Control and Water Conservation District, continued the presentation by discussing how the list of actions was generated through WRA member agencies, public and stakeholder input. Initially actions have been organized by identifying: foundational actions, high priority/highly developed actions, and actions that need further development. Prioritization of the actions needs to allow for flexibility to reflect real world challenges and funding availability. Tim gave an overview of a typical action process from concept development to construction. Many of the actions in the IRWMP are in the concept/scoping or early feasibility stage. The current approach is to keep identified actions in the IRWMP and address through integration in implementation strategy.

Examples of foundational actions are Groundwater, Surface Water, Subsidence, or Environmental Monitoring Programs; and Ground and Surface Water Modeling Programs. A list of Draft Integrated Actions was handed out with descriptions that included:

- Davis-Woodland Water Supply Project
- RD 2035 Sac. River Diversion & Conveyance Project
- Cache Creek Flood Management Integrated Project
- Cache Creek Water Management Integrated Project

- Dunnigan Integrated Project
- Putah Creek Integrated Project
- Yolo Bypass Integrated Project
- Sacramento River Integrated Project
- Sloughs, Canals and Creeks Management Program

The initial steps in the IRWMP process are: identify issues/topic areas to establish plan framework; seek public/stakeholder outreach effort throughout; compile a potential action inventory/list; a prioritize actions by type – foundational, highly developed, integrated. The WRA Board of Directors will finalize IRWMP actions and priorities and a draft plan for public and agency review will in early fall 2006. The plan is scheduled for final adoption by WRA Board by January 2007 and submittal to state per the Proposition 50 grant agreement. Then an implementation strategy will be initiated.

O'Halloran concluded that the IRWMP Process is pliable, work in progress; always open for review/input; priorities will change/evolve over time; and is a blueprint for today, providing direction for future updates. He then turned the presentation back over to Eidam to describe the break-out sessions.

Breakout Sessions

Eidam explained the importance of gaining public input on the potential integrated and individual actions in each of the geographic areas. She directed the group to four distinct geographic area tables: Putah Creek/Yolo Bypass, Cache Creek, Sacramento River (inc. Dunnigan, Knight's Landing and Clarksburg), and Sloughs, Canals & Creeks. Individuals were encouraged to visit station(s) that most closely met their area of interest (referring to list of actions) and if possible, try and visit all of the stations. Members of the WRA Technical Committee were on hand to provide an overview and answer questions. Each table had numerous notepads and pens for people to write down their comments and concerns. Various maps highlighting actions throughout Yolo County were placed at each station for reference. Attendees placed their notes on the appropriate map. The break-out sessions lasted approximately 80 minutes.

Closing

Prior to breaking-out, Eidam outlined that the group would not be reconvening following the sessions. After attendees provided input in all intended areas, they were free to leave. Information on how to stay updated on the IRWMP process and provide public input throughout this process was highlighted. Meeting participants were reminded about the tools available for providing input includes: WRA's website, being added to the stakeholder database for mailings, and the times and dates of upcoming WRA Technical Committee and Board meetings. One additional public meeting will be held for public input later this year. All of the attendees were thanked for coming and providing their input.

APPENDIX - BREAKOUT SESSIONS

Verbatim comments from May 8, 2006 IRWMP Public Workshop

Sloughs, Creeks & Canals

- Integration – Two Types: 1) physical flood control & habitat; 2) Laws & regulations
- Flood control position – how to integrate with HCP
- Governance questions – How do you decide what's next? You need infrastructure to continue
- Prioritization integrates the projects that will be done no matter what. If you had no IRWMP what projects would happen? Prioritize and integrate those.
- Land owner interest driven projects should be a prioritization criteria
- June-July 2006 HCP public input process timeline
- Addressing landowner concerns when taking public money
- Federal 566 program – localized flood control, we want on-the-ground projects
- Hunt-Wesson development mitigation could be to widen Willow Slough
- HCP - preserve design could be integrated into flood control projects
- “Tree people” integrated planning mode in LA, this is a good example
- Prioritize the prioritization process – develop the capacity for cost/ benefit analysis
- Develop laws or standards for slough management
- WM6 & WM 14 – Chad Roberts – How to fund? Sustainability of funding
- Groundwater recharge from tailwater in sloughs – IGSM Model can quantify this in the future- add this recharge to benefit list
- Another project to add to your list of 170+
 - SW of intersection of Rd. 102 – Rd. 27: there are sustained flooding/drainage problems
 - Dig pond further past (near landfill) with soil going to landfill. Pond can receive drainage from the properties with a problem via putting a drain canal back where it was at Rd 103 & ~Rd. 28 going West to East
- Projects to improve water or resource use or condition are expensive. We all need outside funds to accomplish our goal & install projects.
- State or federal money comes with strings attached – mainly private landowners' very livelihood is exposed (through acceptance of public money) and they could be fined or sued or stopped from farming because of information about their farming being released. Their FEARS MUST be addressed & alleviated!
- Need to include a component to encourage or promote vegetation in the upper watersheds to increase water infiltration, reduce rain drop impact and erosive forces and slow down the flow down to the valley (more than in FM20)
- Regarding the 2-year experiment of doing storm/flood management within the flood control district: an assessment to support that effort seems appropriate, but NOT just the FARMERS. The people in the municipalities benefit from flood management too, so should also be included in the assessment.
- Demo Farm Project: Can this be done on actual farms? Use the UCD farmland or farm on Putah Creek (Audubon/Center for Land-Based Learning & farm & nature center)?
- Create storage by widening the sloughs and creating floodplains in other spots besides Willow Slough north of Davis (Willow Slough bypass)
- Rangelands also need more consideration possible to include hill ponds, riparian restoration, grassland restoration?
- Great to have all major sloughs for habitat enhancement, but potential actions include portions of the sloughs only. If these are to help with multiple problems (e.g. wildlife, flooding, water delivery/drainage etc.) need to consider how to do projects from top of watershed to end. Also need to consider how to widen restrictive points, especially road overpasses, for reducing flooding.
- What type of research/monitoring will take place in conjunction with implementation of actions?

- Probably an appetite for assessment to do drainage improvement, but need to make it clear what people are getting for their money.
- Yolo needs to develop a governance network that links together the regulations, agencies, funding streams, so you can identify and link opportunities.
- For streams, creeks & sloughs you need to integrate: 1) projects (flood control, wildlife enhancement, water quality) and you need to integrate 2) the various government effects – regulations, funding streams, agencies. Yolo needs to develop the capacity to aggregate the problems/ benefits.
- Add: Center for Land-Based Learning to agencies involved.
- Can we start in the upper watershed? More “off-channel” storage with ponds, small structures. This will have a huge effect on everything below.
 - Multiple methods
 - Assessments of landowners
 - Plus, habitat & water quality are improved too
- Integrate with HCP/NCCP plan – especially for permitting
- Change: agencies involved – it’s Natural Resource Conservation Service (NRCS)
- Priorities: I would pick one slough – Willow Slough – and get in all of the components that you want to make a complete program: flood control/drainage, habitat, water supply, recreation, water quality. I wouldn’t try to work in so many locations until you have the process, the regulations, the facilitation, permitting, etc.
- We need to build storage, storage, storage. 1) takes pressure off levees; 2) controls flooding; 3) elec. Generation; 4) water sales; 5) recreation; 6) drought control
- Napa River example of parkway development along Cache Creek where gravel extraction sites will be modified in some ways. A classic, more urban example is the Brush Creek Project in Kansas City – supported by grants from US Army Corps of Engrs. & local funding. This has enabled dramatic waterscapes in another hot, dry summer area. Low water dams can provide short-term storage and decrease flash run off. Lowering flood impacts down stream.
- Caution on clearing the sloughs too well. As water “backs-up” in sloughs, it is being retained for hours and days so all rainfall is not “flash” runoff to the rivers.
- Conservation strategies should be coordinated with the developing HCP/NCCP to take advantage of concurrent planning and to create close relationships going forward through implementation.

Putah Creek/Yolo Bypass

- Could oak woodland habitat restoration be a funding source for some projects?
- Please create an additional AR action item for a riparian corridor along YB waterways (Toe Drain) that could also protect levees from wind/wave erosion.
- Request a presentation to Yolo Bypass Working Group
- Put more emphasis on mercury concerns. WQ1 should include Yolo Bypass in its geographic area. The problem is larger than Cache Creek. Mercury should be mentioned in the Cache Creek & Yolo Bypass integrated actions.
- Add to prerequisite investigations list:
 - effects on mosquito production
 - effects on farming and grazing activity
 - effects on methylation of mercury
- Yolo Bypass Working Group is The stakeholder group for the bypass & must be included in the process as early as possible.
- Add: Yolo Bypass Wildlife Area Mgt. Plan as a potential component action.
- Previous aquatic ecosystem restoration tech meetings (2005) defined bypass projects as fish passage projects only, yet these projects are now described with phrases like “andromous fish nursery area”. What was the purpose of the 2005 meetings?

- Include Frontier Fertilizer groundwater remediation project as a water quality action (in city of Davis)
- Yolo Wildlife Area description is inaccurate; I would like to re-write this paragraph.
- The IRWM does not adequately address low impact development practices that retain storm water on site (bioswales, pervious pavement etc.). Storm water represents one of the highest transports of pollutants to the bypass. The plan needs to address retaining the natural hydrograph of the landscape.
- Include additional information on each item (potential action list):
 - Sponsor (LPCCC, City, etc)
 - Status – conceptual to implementation
 - Grants – applied for? Granted?
 - Contact person(s)
- Include process to add projects during development of IRWMP. More importantly after completed IRWMP.
- Clear process for groups to upload information to WRA on status of projects & new projects (as described in bullet above).

Sacramento River (Dunnigan, Clarksburg, Knights Landing)

- FM8 change “from” the Knights Landing RC to “into”. Also check into who benefits – not sure Knights Landing benefits.
- High priority for Dunnigan – maximizing? Understanding of groundwater resources. What potentials for recharge? Some broader testing for toxics spectrum testing of water quality at infrequent multi-year (multi-seasonal?) tests of few randomly selected county wells – something at Dunnigan. Was there old, possibly problematic, upstream dumping? Slow release?
- Dunnigan Area – water level and water quality data in the Dunnigan area is limited. Groundwater monitoring efforts in the Dunnigan area needs to be enhanced.
- Habitat friendly levee program is a great idea. Possible to figure this out in a manner compatible with flood control and measure results as it’s implemented?
- No habitat that will undermine flood capacity and movement of flood waters within bypasses.
- FM5 – Add Knights Landing Ridge Drainage District to list
- Fremont Weir: removal of sediment needs to be followed to make sure it happens
- Tisdale Weir is NOT in Yolo County
- FM5 – very important
- WS22 – Colusa Drain Mutual Water Co. is the entity that controls/sells water in Colusa Drain – certain months – irrigation season
- Dunnigan Integrated Project - Obviously, water projects are needed if 7,000 to 10,000 new housing units are built in Dunnigan. But it seems like the ultimate of dumb growth to make a city there, far from jobs and on agricultural land. If the driving force for such growth is developer pressure or land speculation, it should be resisted at the county government level. If it is that we residents of Davis, Woodland, West Sacramento and Winters are anti-growth, as most of us are, we at least need to have it made clear to us that this is a consequence of our being anti-growth. And maybe we need to be coerced into accepting more growth than we would prefer in our own cities, so as to avoid this expansion of Dunnigan.
- Comments for Dunnigan:
 - If a “new town” is planned, the use of water and relocating a waterscape to landscaping
 - With improvements and using recycled waste water, the ephemeral creeks such as Bird Creek and others could be reshaped and renewed to provide a pleasing scenic ambience when normally dry and flood flow could be increased during winter spring
 - Brush Creek Parkway next to the Plaza area of Kansas City is an extremely attractive example achieved with aid of grants from the US Army Corps of Engrs. Reshaping allows for greater volume of flood flows. Low water dams create beautiful reflection pools

- Low Step wise falls are very attractive during the hot dry summer season. The waterscapes provide opportunity for recreation. Recycled water is used in fountains that augment the re-supply of water
- A small system called “the Living Machine” (info on the Internet) converts sewage to clean water at an environmental education center near the Plaza at Kansas City
- Also on the Internet, the Brush Creek Parkway describing the development of that example

Cache Creek/Yolo Bypass

- WS – the town of Yolo seems to have been forgotten – you’ve included Esparto & Madison but not Yolo.
- Please include mention/linkage with ongoing and potential landowner stakeholder/ neighborhood/ small watershed group efforts
- Yolo red tamarisk/ arundo program in Capay Valley starts this summer (2006)
- How does the plan address NP storm runoff?
- “On-site” retention. Keeping the natural hydrograph. Low impact solutions, i.e. “permeable concrete” bioswales
- Reference city of Portland and Seattle low impact development landscape technique
- FM24 – Clear Lake Operations Evaluation Program – This could provide a significant amount of protection to Woodland at minimal cost – it seems like the smartest of the proposed flood management measures. Whoever would be implementing it should, right away, start assembling political allies and planning legal strategies.
- R3 – Cache Creek Trail Nodes Program – For those of us who think that a long, streamside trail would be a great recreational asset to the county; this “trail nodes” approach is probably the best that we can realistically hope for, as a start. The initial trails should be designed as *potential* links in an eventual long, streamside trail. (“Only over my dead body” landowners should not be given veto power over planning the initial trails.)
- R1 – American River Parkway-Cache Creek Connection Project – Base on the attitude of whoever did the draft write-up for R3, it will be a very long time before there will be any trails along Cache Creek to connect with.
- R16 – Sacramento River-Barge Canal Park Project – Good for the West Sacramento people! They obviously have some vision!
- AR8 & WM13 – Cache Creek Anadromous Fish Reintroduction/Introduction Study – This deserves a high priority, staffed by fisheries, biologists, engineers, and representatives of the farmers who use the creek water for irrigation. It would be great to develop a salmon run in Cache Creek, regardless of the past history or endangered species status.
- AR10 – Yolo Bypass and Fremont Weir Fish Passage Project – This is an obvious high priority yes.
- AR11 – Agricultural Drains and Sloughs Riparian Habitat Enhancement Program – Developing sloughs as vegetation corridors for wildlife will require that at least some water flows during every summer, especially the driest ones. Will the farmers who need water for irrigation be willing to go along with this? Also, will the vegetation interfere with rapid drainage of winter floodwaters that farmers would prefer?
- FM16, FM17, FM18: There obviously is pressure on the WRA to take a fresh look at protecting Woodland from Cache Creek flooding. And it appears from your draft documents that you are hoping to assemble a collection of several projects to do the job rather than one cure-all project. But to ignore the work done by the Army Corps of Engineers, as described in their 1994 publication “Reconnaissance Report Westside Tributaries to Yolo Bypass, California” and to repeat studies on which they have good expertise would be a waste of the public’s money and might delay implementation of whatever is finally decided on.

Specifically:

FM16: The Corps did cost estimates for detention dams on Bear Creek that would temporarily capture all of either the 100-year or 200-year flood (Appendix C, Detention Storage Costs, pages C1-C4). The costs, in 1993 dollars, were \$96,330,000 and \$107,460,000. In each case, the dam would reduce the flow at Yolo by about 9% (Appendix C, pages 32 and 33). So it would take several times this amount of detention to bring the flows at Yolo down to the level for which the present levees were designed. In the same publication, the estimated cost in 1993 dollars of setback levees on the lower creek that would, by themselves, give Woodland 100-year and 200-year protection were \$53,000,000 and \$58,400,000. And you didn't even bother to mention the setback levees in your draft documents. Could the Corps possibly be so far off in their cost estimates that setback levees wouldn't immediately be preferable to a much more expensive set of alternatives?

FM17: It would take a substantial dam to span any part of Long Valley except the very upper end. Plus, there is a lot of recent and ongoing development on the floor of the lower and middle valley. The people who have built there wouldn't likely accept a dam just downstream of them.

FM18: According to the Corps' 1994 publication, if off-stream diversions of water were to be the *sole* flood control measure, it would require temporary storage of water equivalent to an area of 5.9 square miles at a depth of 20 feet (a total of 75,000 acre feet) in order to bring the flow at Yolo down to the designed capacity of the levees on the lower creek (chapter 4, page 30). It might be hard to find even a small fraction of the required area.



October 2006



Cache Creek Nature Preserve

Davis, City of
Dunnigan Water District
Reclamation District 2035
University of California, Davis
West Sacramento, City of
Winters, City of
Woodland, City of
Yolo County
Yolo County Flood Control &
Water Conservation District

Now Is the Time to Provide Your Input About Yolo County's Water Plan!

The Water Resources Association of Yolo County (WRA) is a group of local entities working together to provide a water-planning forum and develop an implementation strategy for accomplishing important resource actions in Yolo County.

The WRA has developed Yolo County's first draft Integrated Regional Water Management Plan (IRWMP). The IRWMP will serve as a planning document to help guide the implementation of water **actions** (programs, policies and projects) within Yolo County. The actions in the IRWMP were originally collected and organized into five key areas:

- water supply and drought preparedness
- water quality
- flood management and storm drainage
- aquatic and riparian ecosystem enhancement
- recreation

What's Happened to Date

The second workshop included:

- 70 attendees
- Review of IRWMP purpose and process
- Overview of actions (integrated/individual/foundational)
- Geographic area break-out sessions for public comment/discussion

The WRA held community workshops November 30, 2005 and May 8, 2006. Both were well-attended. The second workshop focused on obtaining public input about the **foundational, integrated and**

individual actions under consideration for the draft IRWMP. The actions are grouped into projects geographically and include:

1. Davis-Woodland Water Supply Project
2. Reclamation District No. 2035 Sacramento River Diversion and Conveyance Project
3. Cache Creek Integrated Project
4. Dunnigan Integrated Project
5. Putah Creek Integrated Project
6. Yolo Bypass Integrated Project
7. Sacramento River (West Bank) Integrated Project (including Knights Landing and Clarksburg)
8. Yolo County Sloughs, Canals, and Creeks Management Program

Visit the WRA Web site at www.yolowra.org to obtain meeting recaps and other documents about the community workshops already conducted, including a complete list of actions.

The third IRWMP community workshop is Wed., October 25, 2006, at the Heidrick Ag History Center from 4:30 to 7 p.m.

We need continued public input to complete the IRWMP! After nearly a two-year process, we are close to finishing; however, we are still very interested in gathering your insight and comments about the draft IRWMP document. This is critical to developing a comprehensive and implementation-oriented resource plan for Yolo County.

The upcoming October 25 public meeting will focus on:

- **presenting the draft IRWMP and detailing how actions will be implemented.**
- **obtaining public input about the draft document.**
- **providing another opportunity to ask questions and engage member agencies about the IRWMP.**

Since the second workshop, the WRA Technical Committee has:

- refined/prioritized the list of actions into integrated, stand-alone and foundational categories.
- developed an IRWMP implementation strategy and identified lead partner(s) to move each of the integrated actions forward over the next five years.
- allocated grant funding to further develop the work plans and priorities for the Cache Creek Integrated Action.
- developed a draft IRWMP for public review, adoption by member agencies by December 2006, and adoption by the WRA Board scheduled for January 2007.

Visit the WRA Web site at www.yolowra.org/irwmp_documents.html to review the draft IRWMP.

IRWMP Review/Adoption Timeline

- | | |
|-----------------------|---|
| Oct. 6, 2006 | Draft IRWMP public comment period begins (45 days) |
| Oct. 25, 2006 | Third public workshop at the Heidrick Ag History Center |
| Nov.-Dec. 2006 | WRA member agency IRWMP review and adoption process |
| Dec. 2006 | WRA Board considers and incorporates final public and member comments |
| Jan. 2007 | WRA Board adopts IRWMP and begins implementation |

Water Resources Association of Yolo County

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Water Resources
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THIRD COMMUNITY WORKSHOP FUTURE OF WATER RESOURCES IN YOLO COUNTY

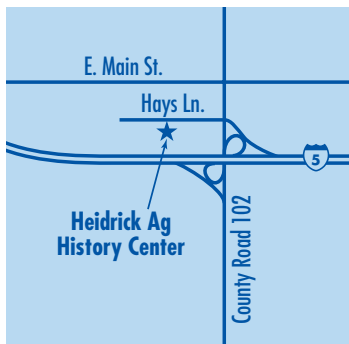
PRESORT
FIRST CLASS

IT'S NOT TOO LATE TO GET INVOLVED!



Cache Creek

While we are close to completing the IRWMP, there is still time to give your input about potential water-related projects in Yolo County. Attend the third community workshop on Wednesday, October 25, 2006 from 4:30 to 7 p.m. at the Heidrick Ag History Center in Woodland (www.aghistory.org)



Community Workshop
Wednesday,
October 25, 2006
4:30 to 7 p.m.
Heidrick Ag History Center
1962 Hays Lane
Woodland

DIRECTIONS TO THE WORKSHOP:

Approaching Woodland from the South on I-5: Exit on County Road 102. At the top of the ramp (signal light), drive straight ahead into Hays Lane. The history center is located at 1962 Hays Lane, on the left, approximately two-tenths of a mile.

Approaching Woodland from the North on I-5: Exit on County Road 102. Turn left at the top of the ramp, crossing over I-5. Take the first left (Hays Lane) and proceed to the museum.

Moving Forward

The WRA obtained a \$500,000 planning grant for the Yolo County IRWMP under Prop 50 (the 2002 general obligation bond passed by California voters for improving a variety of water projects throughout the state) and is now seeking additional outside funding. **The WRA's primary goal is to adopt a completed IRWMP by January 2007.**

The IRWMP will help guide the implementation of the wide range of resource actions contained in the Yolo County IRWMP. Many of these actions will require between five and 20 years to be fully implemented or completed. The IRWMP will be updated again in the next five to 10 years to incorporate progress and new resource actions.

Using input derived from the community workshops and stakeholder input, the WRA will provide a draft IRWMP to the WRA Board. The draft IRWMP will be available for review by the public and member agencies from October to November 2006.

How Can You Help and Participate?

- Attend the upcoming **community workshop** and **member-agency-specific meetings**.
- Visit the **project Web site, www.yolowra.org**, to get information on project specifics and process status.
- Use the **Web public feedback form** and send in your input. Just click on the "Comments" page.

If you wish to speak to someone about the IRWMP or be added to the mailing list, please contact David Scheuring, WRA Chair, or Donna Gentile, Administrative Coordinator, at (530) 666-2733 or info@yolowra.org.

Visit the WRA Web site (www.yolowra.org) for information about member-agency-specific public meetings if you are unable to attend the October 25 public workshop or want additional opportunities for IRWMP involvement.

Water Resources Association of Yolo County Public Workshop Meeting Summary – October 25, 2006

Public Attendees

Approximately 45 interested persons attended the Integrated Regional Water Management Plan (IRWMP) community workshop on October 25, 2006 at Heidrick Ag History Center in Woodland.

Several members of the Water Resources Association of Yolo County (WRA) Technical Committee were present as were members of the Board of Directors.

WRA Technical Committee Member Attendees:

- ◆ Jacques DeBra, City of Davis Public Works and WRA Board
- ◆ Sid England, University of California, Davis and WRA Board
- ◆ Doug Baxter, City of Woodland
- ◆ Mark Cocke, City of Woodland
- ◆ Donita Hendrix, Dunnigan Water District
- ◆ Max Stevenson, Yolo County Flood Control & Water Conservation District
- ◆ Bill Brewster, Department of Water Resources
- ◆ Tasmin Eusuff, Department of Water Resources

WRA Board of Directors Attendees:

- ◆ Kurt Balasek, City of Winters

Local Electeds Attendees:

- ◆ Duane Chamberlain, Yolo County Board of Supervisors and WRA Board
- ◆ Helen Thomson, Yolo County Board of Supervisors and WRA Board

Consultant Team Attendees:

- ◆ Fran Borcalli, Wood Rodgers, Inc.
- ◆ Rob Beggs, Brown & Caldwell
- ◆ Steve Chainey, MIG
- ◆ Gerrit Platenkamp, MIG
- ◆ Lucy Eidam, Lucy & Company

Media Attendees:

- ◆ Crystal Lee, Woodland Daily Democrat

Welcome/Introductions

Lucy Eidam, meeting facilitator, welcomed everyone and introduced the project team. She explained that the purpose of the meeting would be to provide information and answer questions about the draft IRWMP (October 2006) and implementation guidelines and receive public comments. All input will be considered during the final review of the IRWMP. Eidam then outlined simple ground rules for meeting conduct.

Water Resources Association of Yolo County Public Workshop Meeting Summary – October 25, 2006

Presentation Summary and Overview

One public workshop was held from 4:30 to 7 p.m. on October 25, 2006. The workshop consisted of a brief overview of the Water Resources Association of Yolo County (WRA), its members and the WRA Board of Directors by Sid England, WRA vice-chair.

England turned the presentation over to Jacques DeBra, City of Davis Public Works. DeBra provided an overview of the IRWMP development process and project timeline. He summarized the work of the Technical Committee into three phases: tasks accomplished to date, current status and goals for finalizing the draft and its adoption by WRA member agencies by early 2007.

The IRWMP contains three categories of actions: foundational, integrated and stand alone actions. A description of the actions along with projects or programs was provided (reference presentation handouts attached with this summary). DeBra also discussed the implementation strategy for the integrated actions by area and explained how the WRA is collaborating with established local agencies and groups. Lead partner(s) have been identified to be responsible for each integrated action to facilitate effective implementation. DeBra concluded his portion of the presentation by asking the group if there were any questions.

Eidam detailed the various methods through which the public could provide feedback on the IRWMP and how to obtain a copy for review. The deadline for comments is November 21st.

For those interested in an update on the Cache Creek Flood Management subcommittee progress, please speak with Steve Chainey, MIG, at the information table in the back of the room. The WRA Cache Creek Flood Management Subcommittee has established a technical Flood Advisory Committee (CC-FAC) to serve as an independent panel to review flood management data. The CC-FAC will determine the adequacy of the data and advise the subcommittee on any gaps, deficiencies or data needs. CC-FAC membership includes local and regional professionals and community members with technical expertise in flood control, hydrology, engineering and related disciplines, who will work together for the next six months. The WRA also has incorporated Cache Creek flood management actions into the IRWMP. The WRA will continue to work with the Cache Creek Flood Management Subcommittee to make progress on finding a flood management solution as part of the IRWMP implementation process.

Public Comment Period

Eidam asked the attendees for their questions and comments. The questions and comments have been grouped and summarized by the related topics and are transcribed below.

QUESTIONS/COMMENTS	RESPONSES
<p>Specific actions within the IRWMP:</p> <ul style="list-style-type: none"> Water & Aquatic Habitat Management: Perform Aquatic & Riparian Habitat Assessment (pg 6-28) and Evaluate Potential for Establishing Anadromous Fish Population (pg 6-31) – both should extend to the Yolo County line and not be restricted to below Capay Dam 	<p>Not sure how or if this question was answered?</p>

**Water Resources Association of Yolo County
Public Workshop Meeting Summary – October 25, 2006**

<ul style="list-style-type: none"> • Woodland resident concerned about the quality of drinking water supplied from city wells. Has received conflicting information from different sources. 	<p>Referred to speak with City of Woodland public works staff present at the meeting.</p>
<ul style="list-style-type: none"> • Knights Landing Citizen Advisory Committee member concerned about the description in the plan of the Knights Landing Storm Drainage/Flood Management Project (FM8). 	<p>Designated Technical Committee member can attend next CAC meeting to address their questions & concerns. (Note: Petrea Marchand is already scheduled to attend a Knights Landing Advisory Committee meeting on November 8th to discuss the IRWMP, including this concern.)</p>
<p>Accessibility of the information:</p>	
<ul style="list-style-type: none"> • Where can a copy of the plan be reviewed in Knights Landing or Esparto? 	<p>As of October 12th, copies of the IRWMP are available at the local libraries. A complete list of locations can be accessed on the WRA's website: "<i>locations</i>" link http://www.yolowra.org/irwmp_docs</p>
<ul style="list-style-type: none"> • What efforts are being made to outreach in unincorporated areas? 	<p>WRA technical committee members (primarily Yolo County) have been in contact with several local Citizen Advisory groups in the unincorporated areas and offered to attend local meetings and provide information. A series of stakeholder meetings were held relating to Cache Creek issues. Reference IRWMP Section 3.2</p>
<p>Integration and regional coordination:</p>	
<ul style="list-style-type: none"> • How has the Yolo County IRWMP been integrated with other neighboring watersheds? 	<p>Regional meetings and contact has been made with Solano, Colusa, Lake and Sacramento County, including coordinating with other regional agencies. Reference IRWMP Section 3.9</p>
<ul style="list-style-type: none"> • Some projects need State involvement. How does the plan address and incorporate that? 	<p>Addressed through implementation partners. Will be addressed at the stage when an specific project is prepared to , identify those needs, i.e. during EIR development</p>
<ul style="list-style-type: none"> • How does the IRWMP interface with the Yolo County General Plan? Can we comment on the General Plan? 	<p>Model water policies developed by the WRA will be included in the IRWMP Appendix and submitted to Yolo County for consideration in the Yolo County General Plan. The Yolo County Board of Supervisors make the final determination of what will be included in the General Plan</p>
<ul style="list-style-type: none"> • Need a really integrated plan that makes 	

**Water Resources Association of Yolo County
Public Workshop Meeting Summary – October 25, 2006**

<p>choices. Ties together flood, water and all related elements for Yolo County. Yolo County has made big steps in this direction.</p>	
<p>Funding/Cost:</p>	
<ul style="list-style-type: none"> • Will multiple lead partners be seeking state funding concurrently? 	<p>Implementation strategy includes coordination through the WRA. A communication protocol will be establish with the implementation partners to address coordinating and consolidating efforts where feasible and appropriate.</p>
<ul style="list-style-type: none"> • How do we foresee local groups, not currently implementation partners, applying for funding as part of the IRWMP? • Who is the lead to apply for funding ? Is it the WRA? 	<p>See response above. The current organizational structure of the WRA does not allow us to be the fiscal agent. A lead partner would need to fulfill that role, although the WRA can be the grant application entity. Sid England explained the organizational structure and funding base for WRA operations.</p>
<ul style="list-style-type: none"> • The IRWMP is an important process for the County. Coordination among agencies has always been a challenge. It is very useful to have a County-wide focus on the needs for Yolo County on paper. The question comes back to how much will it cost? Are the infrastructure needs of the county 20 years behind? 	
<p>Public Safety:</p>	
<ul style="list-style-type: none"> • Is public safety a priority in the IRWMP? Safety grabs the State's attention. 	
<ul style="list-style-type: none"> • Cache Creek levee protection should be at the top of the priority list. 	<p>A separate Cache Creek Flood Management subcommittee has been established and funded by the following participating agencies: City of Woodland, YCFC&WCD, Yolo County and the WRA. The Subcommittee established a Flood Advisory Committee to serve as an independent technical panel to review flood management data. For more information and periodic updates visit: www.yolowra.org/irwmp_ccfm.html</p>
<p>Prioritization:</p>	
<ul style="list-style-type: none"> • What does the WRA Technical Committee think are the top issues of concern for Yolo 	<p>The WRA is comprised of 9 very different agencies with varied needs and interests.</p>

**Water Resources Association of Yolo County
Public Workshop Meeting Summary – October 25, 2006**

<p>County?</p>	<p>Yolo County is a unique environment. During the prioritization review process, the Technical Committee determined that the Cache Creek Integrated Project met a broader number of goals and objectives. (Reference IRWMP pgs 6-24 to 6-36 and Figures 6-6 & 6-7.) This project encompasses 39 component actions within 3 elements: flood management, water & aquatic habitat management and recreation & riparian habitat. Other priorities mentioned: Foundational Actions in IRWMP – some are already developed and ongoing; and the Davis-Woodland Water Supply Project.</p>
<ul style="list-style-type: none"> • WRA should annually list the top 5 priority issues for state funding. Focus on a strategy for making that decision. 	
<ul style="list-style-type: none"> • Will the final plan prioritize projects? 	<p>The Technical Committee’s goal was to keep a broad range of actions viable and not eliminate projects from the list. Integrated Action anchor projects are more likely to garner wider support and other smaller projects can be advanced under their umbrella. Smaller projects that might otherwise fall lower on the priority list (e.g. recreation & habitat elements.) The implementation partners will be prioritizing tasks for their area’s actions. A list of prerequisite tasks is included with each integrated action to facilitate implementation will also assist with the prioritization process. (Reference IRWMP Section 6.3.2 and each individual integrated action in Section 6.)</p>
<ul style="list-style-type: none"> • Who is going to decide what projects move forward? When will that decision be made? What criteria will be used to make that decision? 	<ul style="list-style-type: none"> • Several Technical Committee members (including DWR) attempted to provide an explanation of the prioritization process that the committee undertook over a period of months. • Appendix B of the IRWMP details the screening and prioritization method developed and the challenges determined for its suitability. As a result of this process, the Integrated Actions matrix was developed. • Some actions may be state regulated.

**Water Resources Association of Yolo County
Public Workshop Meeting Summary – October 25, 2006**

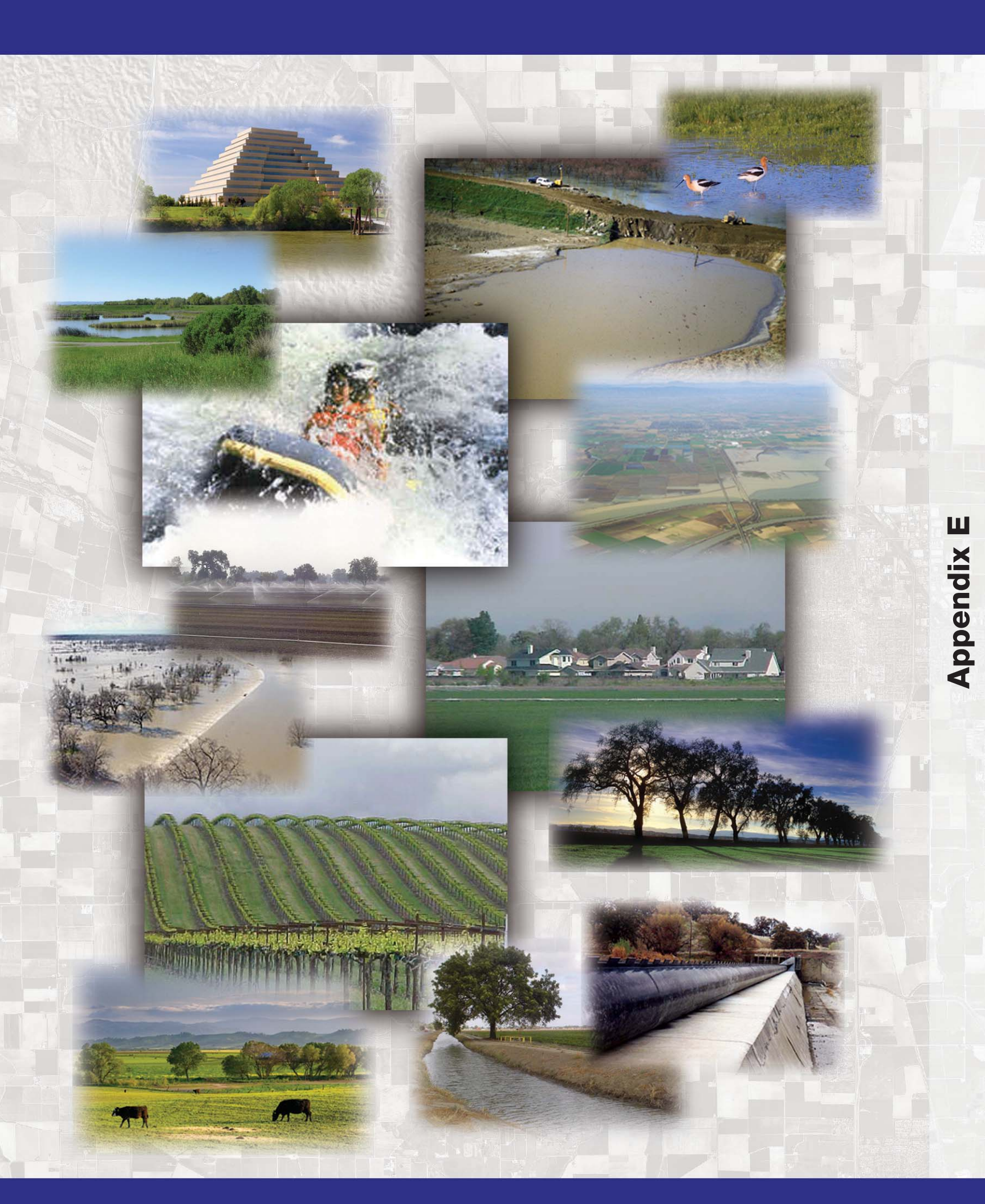
	<ul style="list-style-type: none"> • Some actions will advance as funding sources are identified. • Some actions are more developed and ready to advance. The lead agency is prepared to take responsibility for the implementation and funding.
<ul style="list-style-type: none"> • There needs to be more prioritization County-wide, especially when competing for state funding. For example, if a bond measure passes, projects XYZ should be prepared to apply for funding. 	
<ul style="list-style-type: none"> • Identify a way to make a decision based on criteria, inform policy makers, prioritize projects, do an analysis. 	
<ul style="list-style-type: none"> • Develop a better priority list. Figure out how projects can leverage other funding resources. Ability to pay for a project ought to be a criterion. 	
Miscellaneous topics:	
<ul style="list-style-type: none"> • What kind of comments the WRA is looking for on the IRWMP? Need more specific guidelines; just asking for our comments is too general a request. 	<ul style="list-style-type: none"> • Review descriptions for your area of interest – improved wording or explanations, missing or inaccurate information. • Are there projects missing for your area of interest? • Are the tasks for an integrated action organized appropriately?
<ul style="list-style-type: none"> • How will the plan deal with potential legal actions against the projects? (e.g. person cited Paterno vs. the State – flood-related lawsuit regarding levee maintenance liability). 	The IRWM plan is a framework. As a lead agency takes responsibility for an action, the implementation process will address such issues as it relates to that specific project.
<ul style="list-style-type: none"> • Are most of these projects doomed from the start to never see completion? (<i>due to lack of funding quantity of projects and complexity of prioritizing</i>) 	<ul style="list-style-type: none"> • The group was reminded that this is the first time such a broad list of actions has been developed by so many local agencies. That is a major accomplishment on its own. • Suggestion: convene one stakeholder briefing for interested parties to address questions about prioritization process.

Closing

All of the attendees were thanked for coming and providing their input. Meeting participants were reminded about how to obtain a copy of the IRWMP and the tools available for providing input via:

**Water Resources Association of Yolo County
Public Workshop Meeting Summary – October 25, 2006**

public workshop comment card, WRA's website, WRA member agency public review process, and upcoming WRA Technical Committee and WRA Board meetings.



Appendix E

APPENDIX E

E-1 – IRWMP Stakeholder Meeting Summaries

**E-2 – Sacramento River West Bank Integrated Project
Action Meeting Summaries**

APPENDIX E-1

IRWMP Stakeholder Meeting Summaries

Appendix E

Stakeholder Meeting Summaries

WRA organized six stakeholder meetings to solicit input on potential actions and priorities for the IRWMP. A total of 32 stakeholder representatives were interviewed. Summaries of each meeting are provided below.

Putah Creek Stakeholder Meeting

April 13, 2006, 2:30 – 4:00, Hattie Webber Museum, Davis

Stakeholders present: John Vickrey (land owner), Dennis Kilkenny (land owner), David Okita (SCWA), Rich Marovich (LPCCC), Dawn Lindstrom (Putah Creek Council), Andrew Fulks (UCD P.C. Reserve), Mitch Sears (City of Davis), Harold Anderson (City of Winters).

WRA representatives: Jacques DeBra, Petrea Marchand, Donna Gentile

Consultants: Steve Chainey, Gerrit Platenkamp

Brief notes regarding potential actions:

R14: Develop Winters Putah Creek Park

- Need to provide access
- Removal of blackberries
- Bank is too steep
- Public land
- R project with AR and FM benefits
- Make this into separate action because of multiple benefits

AR30 and AR 32: Flood Plain Restoration

- Combine AR30 and AR32
- Remove eucalyptus that can be used for bank protection

AR 33: Fish Passage

- Work from the downstream end first
- Most downstream barrier is around Los Rios Dam
- Other barriers include Diversion Dam near Winters

FM2: Sediment Control From Tributaries

- Bigger problem than sediment sources from the creek – tributaries suffer large scale bank failures in some cases
- Includes Dry Creek, Pleasant Creek, Pleasant Creek
- Tributary to Lake Solano from North (at middle) contributes large quantities sediment to the creek

New: Route 106A Earthen Crossing

- Should be replaced by another structure
- Washes out every year and contributes sediment
- Fish passage problem

Foundational Action: HEC-RAS Model that SCWA is developing for the Creek should be completed later in 2006

AR34: Putah Creek Salmon Spawning Habitat

- Include in description that this involves creating rock weirs to retain gravel
- Land owners are generally supportive
- Rock slides onto road can be used for material (Caltrans)

New: Vegetation Removal below Putah Creek Diversion Dam

- Channel conveyance is substantially below design capacity
- There is a potential for overtopping of the dam and flooding

AR 7: Exotics Removal

- May want to include this as an FM action instead
- Channel capacity has been much reduced by exotic plants
- DWR has responsibility for channel maintenance but has no funds for maintenance

New: Develop Recreational Opportunities on Public Land

- Putah Creek land owners propose that more recreational opportunities be developed on public lands along Putah Creek (e.g., Winters)
- Include stocking of fish in public areas
- Reduces illegal access to private lands
- Winter Putah Creek Park is an example, there may be others

New: Widen Riparian Corridor of Lower Putah Creek

- LPCCC is aware of locations where riparian habitat zone could be widened and where land owners would be potentially supportive if a conservation easement would be purchased, for example
- This was recommended in the USFWS Reconnaissance Study (1990s)
- Some of this would be in area of Fairfield Ditch or University Ditch

New: Increase Capacity of Mace Boulevard Bridge (Rt. 104)

- Concern of City of Davis (Sears)
- Too little conveyance capacity

R14: Putah Creek Trails Program

- UC Davis and land owners both are concerned that this action is not geographically specific, both have trespass issues.

Not an Action: Wetland in Solano Reach

- Both City of Davis and UCD brought up planned habitat restoration in Solano Reach (Reach 6 in UCD PC management plan) (off-channel wetland)
- This would be outside the IRWMP study area – attendees suggest “coordination” on this, but it is not clear what that would be.

FM 3 City of Winters Storm Drainage Diversion

- Land owners are concerned that the additional proposed flows (up to 1,000 cfs) would cause flooding on their land and affect infrastructure.

Cache Creek Stakeholder Meeting
April 18, 2006, 1:00 – 2:30, Cache Creek Nature Preserve, Woodland

Stakeholders present: Bob Schneider (Tuleyome), Ben Adamo (Granite Construction),
Lynnel Pollock (Cache Creek Conservancy, farmer)

WRA representative: Donna Gentile

Consultants: Fran Borcalli, Steve Chainey, Holly Kuljian

Brief notes regarding potential actions:

1. Comments Relating to Specific Actions

WS4: Esparto Water Supply Project

- Mentioned as being an important project

WS16: Comprehensive Conjunctive Water Use Program

- Flood control an issue
- Where are the best recharge fields?
- Surface and ground water
- Must start at upper end
- Look into other distribution facilities.
- Property mining (wet mode) conjunctive use
- Mercury
- Chloroform
- Aggregate producers
- Wet mining – a few additional feet in water rise (10'-15')
- Conveyed not pumped
- Distribution facilities- West Adams Canal, Granite, Teichert Reef, Teichert-Mueller Site, Granite-Woodland, Rinker, Madison-south?
- Turbidity-clogging
- Divert selectively
- Other recharge sites?
- Into wet pits wait for reclamation
- Start shallow

WQ1: Mercury Clean-Up Cache Creek

- Remediation upstream
- Involvement from local agencies
- Shallow reservoirs – where is it used, trace amounts in agriculture areas are okay
- Do you dredge it out (on farmlands)?

WQ9: Yolo (town) Waste Water Treatment Infrastructure Improvements

- Yolo community (not County) is “being dropped off the map”
- People are on individual septic tanks, and have a community well
- There are health concerns with contaminants due to this condition
- Supply also a concern, as well as poor back-up and electricity

FM14: Settling Basin Cache Creek

- Methylation –wetlands
- Look at CDM study for Caltrans- Draft Feb.
- Filling up and remove soils (combo of both)
- Raise Levee

FM16: Bear Creek Detention Basin Project

- Attenuation
- Detention basin-unregulated
- Army Corps looked at issues, now looking at dry detention and other smaller projects to solve bigger issues

FM32 & FM33: Sutter and Tysdale Bypass

- Include in Yolo County, they have potential downstream effects

AR 8: Cache Creek-Yolo Bypass Anadromous Fish Passage Project *and*

AR 12: Lower Cache Creek Salmon Introduction Program

- Feasibility analysis for these projects should be conducted as before moving forward, public input should be solicited during the process.
- Attached issues: How fish can pass, especially salmonids.
- Refer to NHI draft study.
- It was brought up that the titles of the projects are important, ex. Fish Reintroduction may really be Fish Introduction in reality.

AR25: Small Sloughs Revegetation Project

- Modified system
- Diversion
- Raise efficiency
- Provide adequate water supply to slough
- Listed species

R5& R7: Knights Landing

- Recreational use issues including; kayaking/canoe/bike access
- Concerns over possible vandalism and trespassing
- Boat launching-needs improvement
- *Comment: R5 has been removed*

2. Comments Not Relating to Specific Actions

Riparian Water Use Issue

- Water availability throughout the entire Cache Creek system is needed

Erosion Control

- Bank stabilization as action for Cache Creek

Detention Basins

- Water management recharge issues
- Floodway project- City of Woodland, confusion as to what floodway exactly meant.
- It is important to find a project where enough people can agree on.
- Identify and combine old and new solutions
- Manage spill
- Containment, past
- Cut maximum flow- through conveying
- Look at all options, which agree with factual information
- When do you fill detention?
- can't fill detention basins too early or you lose capacity

Yolo County Tie In

- Enhancements to Yolo county
- Sediment current- upstream
- Water too high, sediment accumulation
- Subsidence due to pumping increase?
- Fine grain sediment
- Surface water

Aquatic Restoration Project Issues

- Diversions play a role
- Reintroduction-fisheries vs. natives vs. exotics

Suggestions Concerning Formatting of Action List

- Use separate column for different waterways, and action types.

**West Yolo County Stakeholder Meeting
April 19, 2006, 2:00 – 3:30, Yolo County Flood Control & Water
Conservation District, Woodland**

Stakeholders present: Chad Roberts (Yolo County Audubon Conservation Chair), Vance Russell (Audubon California)

WRA representative: Donna Gentile

Consultants: Fran Borcalli, Holly Kuljian

Brief notes regarding potential actions:

1. Comments Relating to Specific Actions:

AR20: Cottonwood Slough Riparian Restoration and Levee Setback

- Possibly include: Oak, Cache, and Putah Creeks and Willow Slough
- Get together with as many landowners as possible
- Identify specific projects
- Identify feasibility studies to be done first
- Landowner incentives- for farmland that is taken out of production, a compensation, provide a fund statement, look at sources, on ballot?
- Habitat restoration- enhancement

WS2: Water Storage Project

- Concern: Pondered water in Dunnigan Hills, Tiger Salamander
- *Question*- How do we continue to work with land owners so restoration projects are compatible- landowner input (so projects are also programs.)

FM20: Rangeland Stewardship Program

- Flood run-off
- Restoration included
- Sediment accumulation
- Vegetation management
- Connecting riparian to rangeland
- Riparian fencing is needed
- Weed control included
- Western Hills are an important area for this

AR36: Canal Bank Habitat and Maintenance Program

- Management should be cost effective with emphasis on low herbicide use
- Provide benefits for landowners
- Integrated site specific projects

2. Comments Not Relating to Specific Actions

West Yolo County

- Integrate sloughs (Cottonwood, Willow, and possibly Bear and Chickahominy) with Cache Creek management
- Enhancement consistent with others
- Where does planning come in? Must do focused studies early on
- More information about resources
- Applied research agenda (listed by category –with funding for aquatic and fish monitoring program, that have actual recommendations)

Question- What assumptions are we making?

Overall Environmental aspects to IRWMP

- Commitment and Integration (Directly in Vision Statement)
- Identify biologically rich “hotspots” in streams especially in the Coast Range foothills aquatic habitat
- Protect habitat from exotic species- to lay ground work in order to restore native habitats
- From a watershed perspective we can't segment projects by county lines

Contact for further input:

Scott and Casey Stone

Blake Harlen

Charlie Rominger

Tom Muller

**North Yolo County Stakeholder Meeting
April 20, 2006, 6:00 – 7:30, Yolo County Farm Bureau, Woodland**

Stakeholders present: Lewis Bair (RD 108, General Manager), Fritz Durst (landowner), Tom Ellis (landowner, RD 108), Denise Sagara (Yolo County Farm Bureau), Frank Sieferman, Sr. (landowner)

WRA representative: Donna Gentile

Consultants: Fran Borcalli, Gerrit Platenkamp

Brief notes regarding potential actions:

1. Comments Relating to Specific Actions:

FM20: Watershed Management Program

- Reduce runoff by
 - rotational grazing
 - crop management
 - not ripping
 - rows of grasses
 - capturing runoff in ponds

New: Demonstration Farm Project

- Establish a demonstration farm to demonstrate agricultural practices that reduce runoff (see above) and reduce water use (e.g., drip and certain land treatments)
- Experienced farmers should be the ones who give advice about these practices to other farmers
- Demonstrate how FM20 would be implemented
- Fritz Durst implements these practices on his farm

WM3: Yolo County Subsidence Monitoring Program

- Subsidence in Yolo-Zamora Area
- Freeboard is lost on canals of RD 108
- Long-term effects of subsidence should be assessed

FM32: Sutter Bypass Vegetation Removal Program

- Vegetation in has caused a reduction in conveyance capacity
- Vegetation at Sutter National Wildlife Refuge has been responsible for levee failure
- Yolo County is affected because water that is not captured in the Sutter Bypass can put additional pressure on Yolo County
- There is a concern that vegetation in the Yolo Bypass will also increase and result in reduced capacity

FM33: Yolo and Tisdale Bypasses Sediment Removal Program

- Capacity has been reduced due to sediment buildup
- DWR has deferred maintenance of bypasses
- Portion of Sutter Bypass between Tisdale Weir and Fremont Weir requires maintenance and has flood flows that are above design capacity

New: Increase Capacity of Fremont Weir

- Sediment has built up at Fremont Weir which reduces conveyance capacity
- DWR has deferred maintenance

FM14: Cache Creek Settling Basin Project

- Preventative maintenance is needed on Cache Creek to reduce erosion

New: Vegetation Maintenance Permit Program

- Landowners who have to remove vegetation for levee maintenance and repairs should not be required to obtain costly permits and implement mitigation
- Landowners should not be penalized with mitigation requirements and potentially costly delays for allowing habitat on their lands and levees when they need to do maintenance
- Landowners who have completely removed trees and shrubs from their land and levees do not have to deal with these requirements
- The existing regulations encourage farmers NOT to allow habitat on their land

2. Comments Not Relating to Specific Actions

Regional Coordination

The stakeholders expressed that the WRA coordinate with other regions
RD 108 participates in the Sacramento Valley IRWMP, but is also partly in Yolo
County

Restoration Efforts Compatible with Flood Management

- Restoration efforts need to be compatible with flood control first when they are in bypasses and channels that affect flood control

Sacramento River Channel Capacity at Rio Vista

- Channel capacity at Rio Vista has declined
- Maintenance is required to move flood flows out of the Sacramento flood control system

Cooperation between Counties to Improve Flood Management

- Sutter, Colusa and Yolo Counties should cooperate to improve the Sacramento River flood management system.

Support for Senator Sam Aanestad's Flood Management Bond Bill (SB1166).

The stakeholders are proposing that the WRA support SB1166, for example by sending a letter of support.

The bill is cosponsored by Sen. Aanestad and Sen. Machado

The Governor wants to see the bill on the June ballot

RD 108 is supporting this bill

DWR is supporting this bill

The bond would fund removal of sediment from the Tisdale Bypass

Non-WRA Agencies Stakeholder Meeting

April 24, 2006, 9:00 – 10:30

Yolo County Flood Control & Water Conservation District Office, Woodland

Stakeholders present: Al Barth, Dennis Chambers (Ag. Commissioner's Office), Phil Hogan (NRCS), Steve Macauley (CUWA), Paul Robins (Yolo County RCD), Maria Wong (Yolo County HCP/NCCP Joint Powers Agency)

WRA representative: Donna Gentile

Consultants: Fran Borcalli, Gerrit Platenkamp

Brief notes regarding potential actions:

1. Comments Relating to Specific Actions:

New: Removal of Arundo from Small Sloughs

- Removal of Arundo from small sloughs should be included as a flood management action
- Should be part of flood management integrated action
- Permitting of removal of arundo and tamarisk should be streamlined
- RCD is preparing a permit assistance program for bank protection and slough maintenance (covers sloughs, Cache Creek and tributaries to Putah Creek)
 - Permit does not cover anadromous fish
 - Permit does not cover vernal pools

2. Comments Not Relating to Specific Actions

Coordination with the Yolo County HCP/NCCP

- IRWMP should be coordinated with the HCP/NCCP
- HCP/NCCP will cover many actions that affect non-fish species
- HCP/NCCP is interested to use IRWMP actions list as a starting point for actions that should be covered
- HCP/NCCP is expected to be completed by 2008
- Activities will need to be defined to a level where a CEQA/NEPA analysis can be done – an EIR/EIS will be prepared for the HCP/NCCP
- Project proposals will be more likely to be funded if they are covered under the HCP/NCCP
- HCP/NCCP will identify BMPs

Coordination with the RCD and NRCS

- IRWMP should coordinate with the NRCS and RCD because action will overlap
- Individual RCD actions may be integrated with IRWMP actions
- Paul Robins (RCD) is on steering committee of HCP/NCCP
- See letter about NRCS programs from Phil Hogan

Coordination with California Urban Water Agencies (CUWA)

- Aging water supply and treatment infrastructure is a serious problem state-wide and in Yolo County (e.g., Madison, Esparto, Yolo)
- IRWMP should include O&M actions
- Drinking water systems need upgrades in small communities

Water Supply Storage in Cache Creek Watershed (Barth)

- Why are no actions for new water supply storage in the Cache Creek watershed included?
- Farmers need this

Farmland Conversion is a Concern (Hogan)

- Effect of actions on farmland conversion should be scored (e.g., effect of new water supply)
- IRWMP follows general plans
- General plans do not go out far enough into the future (Macauley)

NRCS Assistance Programs (Hogan)

- Technical assistance
- Financial assistance
- See letter from Hogan, covers all 5 water management categories of IRWMP
- NRCS programs could be a potential funding source for IRWMP

Yolo Bypass Stakeholder Meeting
April 24, 2006, 1:00 – 2:30, Yolo Wildlife Area Headquarters, Davis

Stakeholders present: Jack DeWit (DeWit Farms), Chuck Dudley (landowner), Dave Feliz (Yolo Wildlife Area, DFG), Butch Hodgkins (Reclamation Board), Marianne Kirkland (DWR), Robin Kulakow (Yolo Basin Foundation), James Navicky (DFG), Jeff Weaver (DFG).

WRA representative: Donna Gentile

Consultants: Steve Chainey, Gerrit Platenkamp

Brief notes regarding potential actions:

1. Comments Relating to Specific Actions:

FM29: Yolo Basin Drainage Project

- Stakeholders present agree that there is no evidence for water staying longer on the Bypass than in the past due to drainage problems.
- A study was already done by hydrologist Gus Yates, that has shown that there is no evidence for slower drainage (see Yolo Basin Management Strategy Report 2001)

New: Lisbon Weir Improvement Project

- Lisbon Weir captures tidal flow for irrigation
- Fish passage could be improved here
- Farmers would benefit from a more efficient structure

AR28: Yolo Bypass Fish Habitat Enhancement Program

- Some stakeholders feel that this action should be combined with AR31 Bird Habitat Improvement (Hodgkins), but others disagree (Feliz).
- Bird and fish habitat improvement may not always be compatible
- Bird and fish habitat improvement do not have the same level of stakeholder support
- Navicky (DFG) offered to rewrite the fish actions for the Bypass (Chainey OKed)

AR31: Yolo Bypass Bird Habitat Improvement Project

- Stakeholders felt that the description was much too vague
- Concerned about the phrase “bird-friendly farming practices” would that limit what farmers can do?

New: Preserve Agricultural Buffer along Yolo Wildlife Area

- Yolo County could preserve a buffer of agricultural land along the Yolo Wildlife Area outside the Yolo Bypass to provide upland refugia for wildlife, this would enhance the wildlife habitat function of the Yolo Wildlife Area.

New: Incentives for Agriculture to Protect or Enhance Habitat

- This should probably be a separate action
- NRCS has ongoing programs that the WRA could be enhancing potentially

AR33: Putah Creek Fish Passage

- Has been dealt with in Yolo Basin Management Strategy document already

AR10 and AR27: Fremont Weir Fish Passage

- These are the same action but not described properly
- Navicky will rewrite
- There is virtually no fish stranding this is not an issue according to DFG
- There is an existing group that is discussing fish passage issues in the Yolo Bypass
- Passage in the Toe Drain can be an issue – push up dams block access

2. Comments Not Relating to Specific Actions

WRA Should Involve Yolo Bypass Working Group

- WRA should involve landowners and other stakeholders in planning projects in the Yolo Bypass
- A well-working long-standing stakeholder group the Yolo Bypass Working Group should be involved – the WRA should do a presentation to them about the IRWMP – cannot make this group feel like they are being bypassed.

Tule Canal Railroad Trestle

- The railroad trestle across the Tule Canal traps debris that clogs the low flow channel. Dudley showed photographs documenting this.

Use of Existing Information

- WRA should review *Yolo Bypass Management Strategy* (2001) (See www.yolobasin.org) which describes many actions and policies.

Distinguish Yolo wildlife Area and rest of Yolo Bypass

- In action descriptions the Yolo Wildlife Area and the rest of the Yolo Bypass should be distinguished. Actions that can be taken on the YWA cannot necessarily be taken on private land (e.g., rotation from rice – swamp timothy).

Bypass Flood Management Issues Not Yolo County Issues

- Yolo Bypass is the limiting link in the Sacramento River Flood Control Project and will have to be widened in the future (Hodgkins)
- Widening the Yolo Bypass is a Federal and State issue

Fremont Weir has Sediment Accumulation and Willows Retarding Flow

- Water management can keep willows and tall emergents from growing in the Bypass
- DWR does periodic maintenance, but funding is an issue

- Weir works adequately from the point of view of flood management
- Hydraulic modeling by MBK shows that sediment removal would not significantly improve conveyance

Farming Important for Maintaining Low Hydraulic Roughness

- Farming practices prevent invasion by willows and other species that have high roughness

Yolo County Levee Assessment

- Is Yolo County going to do an assessment of their levees?
- Looking for funding?
- Should this be in IRWMP?

Involvement of DFG/Yolo Basin Foundation in the Action Formulation

- Dave Feliz expressed surprise that DFG/Yolo Basin Foundation were not involved earlier in the formulation of actions
- Feliz provided 10 recreation and 3 ecosystem enhancement descriptions for projects to be added to the IRWMP that he and Robin Kolakow had prepared

Appendix E-2

Sacramento River West Bank Integrated Project Action Meeting Summaries

Stakeholder Workshop Meeting Summary

DATE: February 5, 2007
TIME: 9:00 am – 12:00 pm
PLACE: West Sacramento City Hall
 1110 West Capitol Avenue, West Sacramento

ATTENDEES:

Butch Hodgkins, Reclamation Board	Katy Jacobson, West Sacramento Redevelopment	Cameron Beebe, City of West Sacramento
Robin Kulakow, Yolo Basin Foundation	Dan Fua, State Reclamation Board	Tony Schwall, Reclamation District 900
Linda Fiack, Delta Protection Commission	Kent Lang, Reclamation District 537 & 1600	Gary Hobgood, Department of Fish & Game
Donna Gentle, Water Resources Association of Yolo County	Dan Mount, City of West Sacramento	Traci Sheehan, Yolo County
Dave Shpak, City of West Sacramento	Gerrit Platenkamp, EDAW	Steve Chainey, EDAW
Stephanie Bradley, EDAW		

MEETING SUMMARY:

Proposed Actions:

- The Delta Trail project (SB 1556) that would construct a multi-use trail network in the Delta should be added to the list of actions. It would connect to related actions in the IRWMP.
- The IRWMP should include completing the recreation study started by the Delta Protection Commission as an action.
- Should be looking at potential projects that relieve pressure on the levee system, including setback levees and floodplain easements.
- The Corps will be coming out with a report ranking projects for Congress. The projects that are high priorities should be added to the IRWMP.

Potential Funding Sources for Actions:

- The latest bonds that passed have a set of criteria for how they will allocate funds. One criterion is for regional flood control actions. DWR will be making 100% funding available for regional plans.
- Wording about proposition funding should be broadened to include all existing and future state and federal funding sources.
- The American River Front Revitalization Coalition may be a new source of funding.
- Emergency response and preparedness, which is a component of the Delta Vision, could be a source of funding. Yolo Co OES is already taking the lead on this plan.

- An inventory of funding programs is needed; Proposition 50 funding is no longer a focus because there are few remaining, uncommitted funds.

Other Considerations:

- The actions in the IRWMP should be consistent with Delta Protection Commission policies, the Delta Vision, the Delta Mercury TMDL, the Delta Aquatic HCP, the Bay-Delta Conservation Plan, and the State Parks Central Vision.
- Yolo County provides mitigation opportunities for projects in other areas (e.g., Natomas in Sacramento). Projects providing upstream pressure relief on the Sacramento River would provide regional benefit.
- There is opportunity to integrate future emergency levee repairs with the IRWMP. New levee repair standards and guidelines are being or have been prepared by DWR, FEMA, and the Corps. IRWMP actions should incorporate new flood protection standards. DWR should be consulted on levee work on the water side of levees.
- Corps released new guidance on minimum standards for levee certification, including mandatory removal of all vegetation over 3" diameter on levee slopes. Interpretation and implementation of this guidance is still unclear, although DWR has already instructed local RD's to comply. Local, agricultural reclamation districts cannot afford levee repair and full compliance with new standards.
- SAFCA is looking at Sutter County to improve flood control by diverting peak flood stage along the Sacramento River upstream of the Sacramento urban areas. SAFCA is no longer focusing on the Yolo Bypass or Elkhorn area of Yolo County as loci of flood relief measures.
- There is a need for actions that have regional support, regional benefit (system-wide), and regional targets.

Public Workshop Meeting Summary

DATE: February 8, 2007
TIME: 4:30 – 6:30 p.m.
PLACE: West Sacramento City Hall
 1110 West Capitol Avenue, West Sacramento
 Civic Center Galleria

ATTENDEES:

Linda Henegein	Gary Merwin	Bob Kirtlan
Don Stauffer	Tasmein Eusuff, DWR	LaVerne Ireland
Kathryn Bellrami	Helen Smith	David Scheuring, WRA
John Tallman	Caroline Quinn, City of West Sacramento	Stephen Patek, City of West Sacramento
Joe Baramkin	Tricia Blocher	Mary Lasell
Julia Mciver, Yolo County	Tiffany Knapp	Marc Wheeler
Bob Bullis	Carissa Adams	Fran Borcalli, Wood Rodgers
Cameron Beebe	Bill Naddy	Jeff Twitchell, WoodRodgers
Roger Berry	Catherine Barankin	Mike Westlake
Donna Gentile, Water Resources Association of Yolo County	Dan Mount, City of West Sacramento	Traci Sheehan, Yolo County
Dave Shpak, City of West Sacramento	Gerrit Platenkamp, EDAW	Steve Chainey, EDAW
Stephanie Bradley, EDAW		

MEETING SUMMARY:

Proposed Actions and Input on Actions:

- Safety of people from flooding should be the 1st priority and safety of private property should be the 2nd highest priority.
- Flood protection should be a higher priority than other categories.
- Snow pack should be considered part of the equation to determine how much water is held behind dams.
- The Sacramento Weir gates should be removed.
- There is interest in recreation along levees. Recreation should be integrated with other components.
- Water quality in the Port of Sacramento is a concern – is there water quality monitoring currently occurring in the Port?
- Invasive weeds introduced by ships to the Port of Sacramento should be studied.
- As much natural vegetation as possible should be incorporated into the levee system.
- There is a need to protect regional infrastructure. The South River Pump Station needs to be protected.
- Actions need to respect private property.
- Is dredging in the Deep Water Ship Channel included in the IRWMP?

Concerns:

- RD 150 was not notified about the public meeting. [*WRA sent notices to all the RD's. Yolo County mailed and emailed notification of the meeting, along with a form to propose actions/projects in mid-January*]
- RD 307 landowner was not notified about the public meeting.
- Why haven't the supervisors notified the RD's about the IRWMP process?
- Private landowners in Clarksburg have worked hard to close the levees to fishing because of vandalism and safety issues.
- If bank fishing is tied to levee projects in the Clarksburg area, they will be strongly opposed by landowners.
- Sacramento River West Bank group needs to gather information from the right sources, including individuals that know the history of the area and private landowners.
- Ferryboats are causing wave erosion on levee banks.
- Infrastructure and recreation on levees compromises the integrity of the levees (Sierra Club public comment).

Questions and Other Considerations:

- Where are potential projects located?
- How can we find out more about what projects affect the "Rivers" development area?
- When homes in the "Rivers" development were built on the levees, problems with the levees were discovered and money was used from other areas to fix the levee problems.
- Will the public be voting on each action?
- Who decides what actions get integrated?
- Would a levee repair project in a rural area receive a lower priority?
- When considering projects and the available funding, it seems like flood protection projects are the 1st priority.
- Representatives from the Sacramento River West Bank group should attend a Clarksburg Advisory Committee meeting to get more input on the actions. [*Gerrit Platenkamp gave a presentation to CAC last year on behalf of WRA about the IRWMP*]
- Private landowners have fought the Corps to allow existing trees to remain on the levees.
- What is the status of the Central Park Plan?
- Is the WRA website interactive?
- When is riverfront development around Raley Field going to occur?
- What is the timeline for the IRWMP process?
- Why aren't elected officials at the meeting?

APPENDIX F

YOLO COUNTY INTEGRATED REGIONAL WATER MANAGEMENT PLAN PUBLIC COMMENTS AND RESPONSES

During the preparation of the Integrated Regional Water Management Plan (IRWMP) written comments were transmitted to the Water Resources Association of Yolo County (WRA). Although some of the comments preceded preparation of the draft report they are addressed herein as well. Presented herein is a summary of the comment(s) that were received followed with a response to the comment(s). When the comment(s) address multiple subjects or items each was identified on the transmittal with a number and the responses are keyed to each item number.

Presented in Table 1 is list of the comments received. The comments are arranged in chronological order and numbered accordingly. A Summary of the comments with responses follows Table 1. The responses are assigned corresponding numbers.

TABLE 1**YOLO COUNTY INTEGRATED REGIONAL WATER MANAGEMENT PLAN****COMMENTS**

No.	Submitted By	Representing	Date
1	Mark S. Williamson	City of Davis Resident	11/22/05
2	Frank Siefertman, Sr.	Landowner	2/10/06
3	Bob Schneider, President	Tuleyome	4/21/06
4	Patricia Gouveia	State Water Resources Control Board	5/15/06
5	Diane Tauzer	Concerned landowner	5/18/06
6	David E. Bird, General Manager	Tehama Colusa Canal Authority	9/22/06
7	David Pratt	County Resident	10/25/06
8	Dave Ceppos		10/25/06
9	Bob Schnieder	Tuleyome	10/25/06
10	Olin Woods	County Resident	10/25/06
11	Stephen McCord	Larry Walker Associates	10/28/06
12	Bob Schnieder, President	Tuleyome	11/6/06
13	Joel Buettner, Water Management Specialist	Mosquito & Vector Control District	11/7/06
14	Vance Russell, Program Director	Audubon California Landowner Stewardship Program	11/13/06
15	Mary Kimball	Center for Land-Based Learning	11/13/06
16	Frank Siefertman, Sr.	County of Yolo	11/14/06
17	Caroline Quinn	City of West Sacramento Public Works & Community Development	11/14/06
18	Jerrold A. Burns Environmental Program Manager	California Regional Water Quality Control Board	11/21/06
19	Individual Members	Yolo County Parks, Recreation, and Wildlife Advisory Committee	11/21/06
20	Vicki Murphy	County Resident	11/21/06
21	Maria Wong	Yolo Habitat JPA	11/30/2006

TABLE 1

YOLO COUNTY INTEGRATED REGIONAL WATER MANAGEMENT PLAN

COMMENTS

No.	Submitted By	Representing	Date
22	David Okita	Solano County Water Agency	12/11/06
23	Bob Schneider	Tuleyome	1/4/07
24	Petrea Marchand and Dave Shpak		1/4/07
25	Bob Schneider	Tuleyome	1/24/07
26	Bob Schneider	Tuleyome	2/27/07

4/22/2007

SUMMARY OF COMMENTS WITH RESPONSES

No. 1 – Mark S. Williamson, City of Davis Resident

Mr. Williamson indicated the IRWMP should address six items. The respective items are enumerated below as a comment with a response following:

1. **Comment:** *Improved drinking water quality.*

Response: A new municipal water supply for the cities of Davis, Woodland, and UCD is addressed in the Davis-Woodland Water Supply Project; for the town of Dunnigan in the Dunnigan Integrated Project; and for the towns of Esparto and Madison in the Cache Creek Integrated Project.

2. **Comment:** *Sustainability of water supplies.*

Response: Foundational actions that provide essential information for managing water supplies, both groundwater and surface water, are deemed important with or without the IRWMP. These relate to monitoring programs that currently exist and will be enhanced over time. Implementation of actions within the following three integrated projects will assist in providing Yolo County with a sustainable water supply: the Davis-Woodland Water Supply Project; the Cache Creek Integrated Project; and the Dunnigan Integrated Project.

3. **Comment:** *Maintenance of agricultural character.*

Response: This is a land use matter that is the subject of Yolo County's General Plan Update. The activities of the WRA related to the IRWMP are coordinated with the General Plan with respect to water-related policies.

4. **Comment:** *Preventing development in flood prone areas.*

Response: This is a land use matter for both Yolo County and the cities; however, good land use decisions need good information on flood hazards and risks. Action FM35, the creation of a Flood Management Division within the Yolo County Flood Control & Water Conservation District, or a separate entity, is an important initial step toward the development of information and plans to reduce the risk of flooding.

5. **Comment:** *Identification and protection of groundwater recharge zones.*

Response: The greater part of Yolo County is a recharge area to some extent. Cache Creek and to some extent Putah Creek represent site-specific recharge areas. Accordingly, land use and practices on the land can affect recharge and are appropriately addressed in the General Plan, ordinances, and permitting process.

6. **Comment:** *Regional communication and cooperation.*

Response: The process of preparing the IRWMP has illustrated the ability of the WRA and its Technical Committee to be an effective vehicle for addressing water-related matters in Yolo County. The WRA highlights the fact that the WRA should become more prominent in fulfilling coordination and facilitating functions. To this end, it is recommended that non-governmental entities such as the Lower Putah Creek Coordinating Committee and the Yolo Bypass Working Group participate with the WRA and Technical Committee on a regular basis to achieve the regional coordination and communication that is important to the long-term success of the IRWMP effort.

No. 2 – Frank Sieferman, Sr., Landowner

Comment: *Mr. Sieferman was advising the WRA of known existing studies related to the drainages north of Cache Creek.*

Response: The studies prepared by the Soil Conservation Service relate to the Hungry Hollow area and Zamora, Buckeye Creek, and Dunnigan Creeks. The information contained in the reports will be more applicable in the implementation of the Dunnigan Integrated Project and the Yolo County Sloughs, Canals, and Creeks Management Program.

No. 3 – Bob Schneider, Tuleyome

Mr. Schneider addresses several topics including potential actions, prioritization, specific studies, and process. An attempt is made to capture the salient points presented in the letter and to respond accordingly. Paragraphs addressing common topics have been grouped and numbered for easy reference. Presented below is a summary of the respective topics with a response following.

- 1. Comment:** *Mr. Schneider expressed concerns that the IRWMP does not adequately address the biological and ecological resources related to waterways in Yolo County. He also draws attention to linking the IRWMP to the Yolo County HCP/NCCP and questions the extent to which the IRWMP process has been open to the public.*

Response: The IRWMP includes eight Foundational Actions, two of which relate directly to the comments presented. These are identified in the IRWMP as follows: FA6 HCP/NCCP Development and FA7 Aquatic Habitat and Fish Monitoring Program. With respect to the HCP/NCCP, the WRA acknowledges the benefit and importance of the HCP/NCCP in facilitating the implementation of potential actions. Since the Yolo Habitat JPA is not a WRA member agency special attention will be required on the part of the WRA and the JPA to coordinate activities on a regular basis.

The WRA agrees that the knowledge base for aquatic and fisheries resources is deficient and warrants attention as a Foundational Action. FA7 is planned to focus on Cache Creek and the Yolo Bypass because of the hydraulic connectivity. Biological and ecological resources related to the other waterways in Yolo County will be addressed in the Yolo County Sloughs, Canals, and Creeks Management Program.

The work plans related to biological and ecological resources for the foundational action and the management program remain to be developed; however, this is anticipated to be

an important aspect of both activities. The steps noted in Mr. Schneider's letter for investigating these resources will be appropriate to address in the process of developing the work plans for the above-mentioned foundational action and management program.

With respect to the public process, all meetings of the WRA, the Technical Committee, and the partners or subcommittees involved in the various foundational actions or the integrated actions are open to the public. The agenda for the various meetings vary and, as a consequence, the extent and opportunity for public input varies.

2. **Comment:** *Mr. Schneider draws attention to the fact that an understanding of biological and ecological resources is foundational to sound water management and should be dealt with accordingly. He notes that studies of this nature are multi-year programs and for this reason it is important to initiate them as early as possible so as not to delay implementation of important water management projects.*

Response: The points raised in the comments relate to implementing the Cache Creek and the Yolo Bypass Integrated Projects and the Yolo County Sloughs, Canals, and Creeks Management Program. The WRA acknowledges the importance of the work outlined in the comments and the time required to obtain suitable baseline data and information. The information needs and the studies listed will be considered in preparing the work plans and budgets for the respective integrated projects as well as for the related foundational actions. It is the intent of the IRWMP that the lead partners or leadership within the respective integrated projects or subcommittees proceed in an open process.

3. **Comment:** *Mr. Schneider expresses concern about the Technical Committee conducting business behind "closed" doors and requests that the meetings of the Technical Committee be public.*

Response: All meetings of the Technical Committee are open and conducted in accordance with the Brown Act. From time-to-time subcommittees will be set up to address particular items or issues and these may not be publicly noticed. However, recommendations from the subcommittee are brought back to the Technical Committee. The Technical Committee meetings are open to the public.

No. 4 – Patricia Gouveia, State Water Resources Control Board, Division of Water Quality

Comment: *Ms. Gouveia indicates that the IRWMP overlooks urban water quality and draws particular attention to the handling of storm water runoff through the application of "smart growth" and "low impact development" (LID).*

Response: The emphasis on urban water quality in the IRWMP is associated with recycling of wastewater and stresses viewing municipal wastewater as a viable "water resource." The matter of urban water quality related to storm runoff is addressed in actions for Water Quality and Flood Management and Storm Drainage. Action WQ4, which deals with the interface between runoff from agricultural land and urban land, is a component action in the integrated project, Yolo County Sloughs, Canals, and Creeks Management Program. Action FM15 relates to preparing design criteria for Yolo County that provides consistency among

the various jurisdictions. The design criteria should have provisions related to LID and the description of this action now includes mention of LID. Specific reference has been added to Action FM 21, which relates to storm runoff associated with potential new development in the vicinity of Dunnigan. This action is a component of the Dunnigan Integrated Project.

No. 5 – Diane Tauzer, Concerned Landowner

- 1. Comment:** *Ms. Tauzer expresses concern about the indiscriminate filling in of drainage channels that alter natural drainage patterns thereby creating drainage problems and potentially mosquito problems as well. She also suggests that if she was able to purchase water for irrigation from the District that farming would be more economical.*

Response: It is recognized that there is a need for an entity to be responsible for addressing flood control and storm drainage issues. Accordingly, Action FM35 was identified and included as a component of the Yolo County Sloughs, Canals, and Creeks Management Program. Action FM35 is aimed at creating a flood management division within the Yolo County Flood Control & Water Conservation District, or a separate entity to address a multitude of flood/storm drainage issues. Developing a sustainable funding mechanism is an important part of this action.

With respect to the purchase of water from the District, this can be pursued with the District directly and outside of the IRWMP.

- 2. Comment:** *Ms. Tauzer expresses concern regarding the quality of groundwater in the vicinity of the Yolo County Landfill and the availability of groundwater data.*

Response: The WRA has in the past and continues to support groundwater monitoring and views it as a foundational action that must be continued and enhanced with or without an IRWMP. With respect to groundwater level monitoring and groundwater quality monitoring there are several entities involved. In Yolo County the groundwater level and quality monitoring is coordinated through the Yolo County Flood Control & Water Conservation District. With respect to the County Landfill, the monitoring of groundwater is an essential element of the operation. The data on groundwater from the monitoring program is available to the public and it should be incorporated into the groundwater database that includes data from various sources that is maintained by the District. The data would be available from personnel at the Landfill. With respect to air quality, this matter should be discussed with Yolo County and personnel at the Yolo-Solano Air Quality Management District in Davis.

No. 6 – David Bird, Tehama Colusa Canal Authority

Mr. Bird identified three issues that the IRWMP should address. They are noted below with a response following.

1. **Comment:** *WS3.2 Oat Creek Water Storage Project. Mr. Bird notes that plans have existed for quite some time for storage on Oat Creek and he indicates that additional investigation would reveal its viability.*

Response: A storage facility on Oat Creek has been considered by interests in Yolo County; however, for various reasons it has not appeared to be feasible. This facility is, however, carried forward in the IRWMP for further consideration in the future.

2. **Comment:** *WS3.3 Bird Creek Water Storage Project. Mr. Bird indicates that with the Tehama Colusa Canal terminating at Bird Creek a storage facility on Bird Creek could be worthwhile.*

Response: The response to a storage facility on Bird Creek will be carried forward in the IRWMP for further consideration. It may be attractive in relation to water supply and managing storm runoff in association with prospective development in the town of Dunnigan.

3. **Comment:** *WS 23 Tehama Colusa Canal Extension Project. Mr. Bird indicates that an extension of the Canal hold promise in terms of better water quality, environmental enhancement, and increase reliability.*

Response: Similar to Oat Reservoir, the extension of the Tehama-Colusa Canal has been considered by interests in Yolo and Solano Counties for supplemental water supplies and improved water quality. In the regional coordination with the Solano County Water Agency interest was expressed in relation to the Canal with respect to obtaining water with improved quality. The concept will be carried forward in the IRWMP for consideration in the future.

No. 7 – David Pratt, County Resident

1. **Comment:** *Mr. Pratt raises concern about not accepting the work of the U.S. Army Corps of Engineers in March 2003, which indicated setback levees to be the preferred project for preventing flooding of Woodland by Cache Creek, and the June 1994 report that indicated “dry” dams on tributaries and temporary off-stream storage to be impractical.*

Response: The work of the U.S. Army Corps of Engineers (USACE) was not completely ignored. The feasibility study of the USACE indicated that the National Economic Development (NED) project was the barrier project that was not acceptable locally. The intent is to examine the full range of options in order to identify an alternative or combination of alternatives that might be feasible and gain the support of the community. This even involves an evaluation of the USACE’s hydrology.

Principal reliance for minimizing the risk of flooding to Woodland is not intended to be on “dry” dams or off-stream storage, but to include them for consideration when an objective examination of alternative solutions is made.

- 2. Comment:** *Mr. Pratt makes reference to a statement in the draft report on page 5-11 and questions the fact that the IRWMP does not accept the work of the USACE at face value.*

Response: The statement merely reflects the sentiment gleaned from discussions at the public meetings that there may not be a “silver bullet” to deal with the issues of flooding for the City of Woodland, and that the chances of success in developing a solution will require an objective examination of all options. This may require going back and reexamining alternatives considered previously. The USACE is silent on the Cache Creek Settling Basin, which they know has a limited life. Nevertheless, the alternatives considered by the USACE completely ignore how the future modifications to the Settling Basin may affect the alternatives.

- 3. Comment:** *Mr. Pratt indicates that the California Department of Water Resources (DWR) may look unfavorably at the IRWMP for not accepting the work of the USACE at face value.*

Response: There are sufficient questions regarding the FEMA Flood Insurance Rate Maps and the USACE’s work as it relates to or is influenced by future decisions for managing sediment from the Cache Creek system that DWR will understand the necessity for reexamining alternatives.

The documents referenced by the author will be included in the References section.

- 4. Comment:** *The question raised by Mr. Pratt relates to the rights for the public to access the tops of levees in the county. The interest relates to the ability to provide for foot and bicycle traffic along the levee corridors.*

Response: The legal entitlement of all levees and the right for the public to access the tops of levees would have to be researched. It is anticipated that Action R32, which is included in the Yolo Bypass Integrated Project, would address this question. This action will be included in the Cache Creek Integrated Project also.

- 5. Comment:** *Mr. Pratt suggested that Action AR8, Cache Creek – Yolo Bypass Anadromous Fish Passage Project should not be delayed until the Foundational Action FA6 is implemented.*

Response: The scope of a project that would be configured under Action AR8 is not well known and focused at this time. What ultimately is resolved to deal with the flood issues related to Lower Cache Creek and the disposition of the Settling Basin can impact any effort to implement Action AR8.

- 6. Comment:** *Mr. Pratt questions the wisdom of Action AR48, Putah Creek Geomorphic Restoration in that it may reduce the channel capacity of Putah Creek.*

Response: The participants in the Lower Cache Creek Coordinating Committee indicate that the channel size should be reduced to enhance the geomorphological function of the

creek; however, for reasons you stated, there should be interest in preserving the flood carrying capacity of Putah Creek especially in view of the expressed concerns of climate change. It is presumed that those responsible are attentive to this matter.

7. **Comment:** *Mr. Pratt identified some “typos” that need to be corrected.*

Response: Thank you. The corrections were made.

No. 8 – Dave Ceppos, Citizen

Comment: *Mr. Ceppos draws attention to statements made by the IRWMP facilitation team during the October 25, 2006, Public Workshop, and notes that was an interesting approach to enthuse/interest the public.*

Response: No response required.

No. 9 – Bob Schneider, Tuleyome

Comment: *Mr. Schneider indicates that the work described under Task 2 and Task 11 under Water and Aquatic Habitat Management (page 6-28) should not be limited to the reach of Cache Creek downstream of Capay Dam, but should extend up to the County line.*

Response: The information is needed throughout the system and this will be reflected in the description of the work. The availability of funding may dictate that the work be accomplished according to different segments of the system.

No. 10 – Olin Woods, County Resident

Comment: *Mr. Woods in essence supports the Davis-Woodland Water Supply Project but suggest that consideration also be given to seeking supplemental water from the Solano Project.*

Response: UCD does have a contract for up to 4,000 acre-feet of water annually from the Solano Project. A decision regarding the allocation or reallocation of water supply from the Solano Project was made recently for environmental purposes on Putah Creek. The prospects for an additional allocation of water from the Project for municipal use in Yolo County are such that pursuing this is not deemed appropriate. The analyses for the DEIR for the Davis-Woodland Water Supply address other supplemental water supplies for the community and this document is now available for public review.

No. 11 – Stephen McCord, Larry Walker Associates

1. **Comment:** *Mr. McCord recommends including the water quality management plan prepared for the City of Woodland in the references. Also the reference to the IRWMP Technical Appendix needs to be made clear.*

Response: The document is being modified to incorporate the two suggestions.

2. **Comment:** *Mr. McCord suggests making reference to volunteers as an important source of “funds” to support projects in the county.*

Response: Yolo County does have an incredible volunteer ethic. It will be mentioned as suggested.

3. **Comment:** *Mr. McCord suggest including reference to “pollutant trading buyers” where entities in the lower Sacramento Valley may be interested in participating in a project on Cache Creek to reduce the mercury load if demonstrated to be more cost effective.*

Response: Reference will be made to this concept as suggested.

4. **Comment:** *Mr. McCord suggests making reference in Section 6.5 to two regulations, the TMDL’s and the Basin Plan.*

Response: The comment is appreciated; however, it is deemed best to leave the section more generic otherwise there would be numerous other regulations to reference that are not necessarily appropriate at this stage.

5. **Comment:** *Mr. McCord expressed his willingness to participate in establishing prioritization criteria.*

Response: Your expressed interest is appreciated; however, the WRA allocated three months for the lead partners for integrated projects to establish priorities for their respective geographic subarea.

No. 12 – Bob Schneider, Tuleyome

Mr. Schneider presents some general comments as well as specific comments to text sections of the report. The general comments will be grouped and numbered with a summary of the context provided herein. The specific comments will be repeated as presented in Mr. Schneider’s letter. Responses are provided to each numbered comment.

1. **Comment:** *Mr. Schneider, although acknowledging the difficulty in prioritization of projects describes the importance of going through the process and suggests a general example of what might be considered a high priority integrated project. He also indicates that activities implemented under the IRWMP should be aligned with the HCP/NCCP and interface with the County General Plan update.*

Response: The WRA, in response to the input received at the Public Workshop on October 25, 2006, regarding the concern about prioritization allocated three months of time for the lead partners in the respective geographic subareas to prioritize activities important to implementing the integrated project for which they are responsible. The results of this effort are reported for the respective subareas in Section 7 of the IRWMP.

Prioritization as it relates to allocating staff time and funding will be dealt with on an on-going basis as actions are implemented. Each subarea has and likely will continue to have different methods or approaches to setting priorities.

The relationship between the IRWMP and the HCP/NCCP is recognized by the WRA as being important. It was for this reason that the HCP/NCCP was included in the IRWMP as a Foundational Action. The IRWMP should and does interface with the General Plan. The IRWMP process initially produced potential water-related policy options to be considered in the General Plan process. These are included in Appendix C of the IRWMP. As the General Plan progressed, water-related objectives were produced according to the five water management categories selected for the IRWMP. Most of these objectives have been incorporated into Section 2 of the IRWMP.

2. **Comment:** *Mr. Schneider draws attention to the fact that where appropriate for management of the resource, activities within the various geographic subareas need to be coordinated. This is illustrated by citing fishery resources between Cache Creek and the Yolo Bypass as an example.*

Response: This point is absolutely true and this coordination between the respective subareas is an important part of the on-going coordination that can be accomplished through the WRA with the cooperation of the lead partners in the respective subareas.

3. **Comment: Page 3-1: 3.2.2.1 Disadvantaged Communities and Environmental Justice**

- *“The Plan fails to adequately address environmental justice. Hispanic and other minority communities have special ties to water quality as it relates to subsistence fisheries and recreation. As an example, the Hispanic community is a significant user of Yolo County parks in the Cache Creek canyon. Yet, adequate outreach to this community has not been undertaken and when we checked we found that significant groups such as the Woodland Hispanic Chamber of Commerce were unaware of the IRWMP process. We are willing to assist where we can to ensure that environmental justice issues are addressed.”*

Response: The Plan does include several potential actions that would improve facilities in what are considered disadvantaged communities according to the Proposition 50 Guidelines. Your assistance in reaching out to the Hispanic community as potential actions are addressed subsequent to completion of the IRWMP would be helpful.

4. **Comment: Page 4-5:**

- *“Under 4.5.1.1 Salt Creek, Bird Creek, Oat Creek and other tributaries north of Cache Creek should be mentioned.”*

Response: The referenced waterways have been included.

5. **Comment: Page 5-8:**

“Description, bottom paragraph: We don’t want the channel put into a pipe.”

Response: This concern should be expressed at the time the specific project environmental review takes place. It is not a project feature at this time; however, it could be in the event the feature is combined with the Davis-Woodland Water Supply Project.

6. **Comment: 5-9 to 5-12:**

“Several comments are made in these pages related to efforts to address the Woodland flood issues. We have specific concerns, but first make the following general comments related to this issue.”

- *“Why does this section completely ignore the Army Corps of Engineers conclusion that the preferred project for preventing flooding by Cache Creek of Woodland and the land north of the creek is “setback levees”? [US Army Corps of Engineers, March 2003. Lower Cache Creek, Yolo County, CA, City of Woodland and Vicinity. Draft Environmental Impact Statement / Environmental Impact Report for Potential Flood Damage Reduction Project.]”*

Response: It does not completely ignore what was stated in the work of the USACE. It was deemed appropriate based upon the reactions of the residents of the City of Woodland and Yolo County to the USACE’s feasibility study to consider all potential alternatives and combinations of alternatives to some extent. The purpose is to provide an objective assessment of the full range of options from which to deal with the problem. This even includes a reevaluation of the USACE hydrology for the Cache Creek watershed as identified as a prerequisite task under the Flood Management Element of the Cache Creek Integrated Project.

- *“Why does this section make its principal reliance (top of page 5-12) on two kinds of projects that the Corps has specifically rejected”?*
 1. *“dry” dams, the best of which (Bear Valley) the Corps found to be maximally expensive and minimally effective. [U.S. Army Corps of Engineers, June 1994. Reconnaissance Report, Westside Tributaries to Yolo Bypass, California]. If dry dams are to be discussed the earlier Corps reports on the Guinda and Brooks dams should also be mentioned and included in the bibliography.*
 2. *“temporary off-stream storage, which the Corps concluded would need to flood so much land so deep that it was impractical. [same 1994 reference]”*

Response: The principal reliance for resolving the flood issues in the Lower Cache Creek area is not proposed to be dry dams. It is suggested that all options be considered in the process of moving forward to identify an acceptable solution. Please refer to the response presented above.

- *“We are unaware that “there seems to be growing consensus that the Woodland/Cache Creek flood control solution will, by necessity, consist of multiple, integrated actions.” We totally disagree with this statement and in fact it is our preliminary conclusion that efforts to utilize multiple integrated actions will in effect divert attention and funding to projects that do not resolve Woodland’s flood issues and that the capital and operating and maintenance funds that might be expended will make it increasingly difficult to resolve this issue. There is no growing consensus. We do recognize, however, that some projects that may provide some incremental improvement such as re-operation of Indian Valley Reservoir or changing the decrees with respect to management of the water level on Clear Lake can make sense and be cost effective.”*

Response: The language was modified. The intent is that there may not be a single project that adequately addressed the problem and that a combination of projects may be required.

7. Comment: Pages 5-10:

- *“Under Theme - Our goal should be 200-year flood protection and this should be explicitly stated.”*
- *“Under Relevance to Goals and Objectives- Fifth bullet should be changed to read Providing recreational opportunities while minimizing impacts to other property owners.”*

Response: The City has indicated a 200-year level of protection so this change has been made. The objective was left unchanged as that was the intent when the language was drafted.

8. Comment: Page 5-11:

- *“The Thurston Lake Pump Storage Project is referred to as (WS1) but this should be (WS 19)”*
- *“Under Description: We are unaware that “there seems to be growing consensus that the Woodland/Cache Creek flood control solution will, by necessity, consist of multiple, integrated actions.” We totally disagree with this statement and in fact it is our preliminary conclusion that efforts to utilize multiple integrated actions will in effect divert attention and funding to projects that do not resolve Woodland’s flood issues and that the capital and operating and maintenance funds that might be expended will make it increasingly difficult to resolve this issue. There is no growing consensus. This statement should be removed.”*

Response: WS1 was corrected to WS19, thank you. Please see the response above for the second bulleted comment.

9. Comment: Page 5-12:

- *“We do not agree that consideration should be given to temporarily storing flood waters in the upper watersheds in new detention basins. However, the re-operation of existing reservoirs may have merit.”*
- *“5.4.5 Cache Creek Water Management Integrated Project
Location: We disagree with limiting this project between Capay Dam and County Road 94 B. This arbitrarily limits the reaches of the creek for projects that should be considered over the entire watershed. Specifically, this inappropriately limits the extent of AR 8, AR 24, AR 46, and R3.”*

Response: At this point all alternatives are left open for consideration. The two Cache Creek integrated projects are combined later in the document and the limitations noted in the comment are removed.

10. Comment: Page 5-16:

- *“We are extremely concerned about mention of in-stream storage projects on either Oat Creek (WS3.2) or Bird Creek (WS3.3). We feel that these two smaller creeks in the Dunnigan Hills should be identified for restoration of riparian and aquatic habitat elements. This is also true of Buckeye Creek (FM4). The IRWMP is clearly not “integrated” with the planning process included in the NCCP/HCP, which is a major point that we have made previously.”*

Response: The merits of how the resources should be managed in the future will be the product of an open process with the appropriate environmental review. The HCP/NCCP has been brought in as a Foundational Action in order that it is incorporated into both the planning and implementation process.

11. Comment: Page 5-20:

- *“See comment under page 5-10 with respect to rewording the fifth bullet.”*

Response: Same response as for comment under page 5-10.

12. Comment: Page 5-21:

- *“ “At top of the page the sentence should be reworded to state: “Planning and implementing this action will be closely coordinated with all local stakeholders and...””*

Response: The wording was modified.

13. Comment: Page 5-34 Table 5-1:

- *“FA 6: We continue to request that this title be properly described to include “opportunity assessment” as it is a critical foundational activity.”*

Response: Agreed. We want to understand the opportunities.

14. Comment: Page 5-36 Table 5-2:

- *“WS 7: We have serious concerns about any efforts to convert the open channel that parallels highway 16 across the Yolo-Bypass into a piped transmission facility. We asked to be informed with respect to any continued action or development of this project.”*

Response: Any proposal to significantly modify the conveyance across the Yolo Bypass will require compliance with CEQA and the process will provide the opportunity for input at that time.

15. Comment: Page 5-37 Table 5-2:

- *“WS13: We appreciate that this project mentions that fish passage investigations should be conducted.”*

Response: None required.

- *“WS 17: We would like additional information on the status of these projects. It is also important to insure that the Agricultural Mitigation Conservation Program will not preclude the establishment of these small reservoirs that are in essence a widening of a slough, in appropriate locations.”*

Response: This action will be included in the Sloughs, Canals, and Creeks Integrated Project. Your participation in the stakeholder group will enable you to be kept informed.

- *“WS 20: This description should include the list of potential projects.”*

Response: The list will be developed in collaboration with Lake County as the Cache Creek Integrated Project matures.

- *“ “WS25: The first statement should be modified to read, “The building of Sites Reservoir may ~~would~~ enhance the viability...””*

Response: Agree. Suggested change was made.

16. Comment: Page 5-46 Table 5-4:

- *“FM1 and FM18: We have serious concerns about both of these projects that involve on-stream and off-stream dry dams and short duration detention projects. Both of these projects have large potential environmental impacts and regulatory and engineering constraints. Studies of these projects that do not include these environmental elements merely serve to divert needed resources from solutions to*

important flood management projects. There is no consensus on this approach to resolving Woodland flood management issues.”

Response: Any effort to consider projects of this nature will certainly involve an environmental assessment at the appropriate time.

- *“ ”FM19: The flood management goal for our region should be a minimum 200-year event. The wording should be for a “minimum 200-year event” in place of “at least 100-year flood protection.” ”*

Response: The City has unofficially noted this so the suggested change will be made.

17. Comment: Page 5-53 Aquatic and Riparian

- *“AR 30: Action AR7 and AR30 are substantially similar. Perhaps these should be combined to refine a plan and county coordination with the entities conducting this work throughout the region.”*

Response: It is agreed that they are similar; however, at this time they are being dealt with as deemed appropriate by the parties involved.

- *“ “AR36: The YCFCWCD is the best responsible agency to implement control of invasive species along their canal and natural waterway system in conjunction with AR7 and AR30. This effort can be coordinated with projects such as AR 36 to restore habitat and minimize the reinvasion of exotics.” “*

Response: Agreed.

- *“AR46: Cache Creek once had significant salmon runs. As Joe Farnham reported, he remembers his dad fishing in Gordon Slough with a pitchfork in order to catch salmon to feed to their hogs. A Fish and Game warden reported steelhead in Clear Lake as late as the 1939.”*

Response: The appropriate actions are identified and when implemented this will be dealt with.

18. Comment: Page 6-21: Conveyance Project

- *“As noted earlier we have concerns with respect to the Conveyance Project and request to be listed as stakeholders and notified as to any planning on the project and EIR processing. Is the Draft EIR complete, who is the lead agency, and where is the EIR available”?*

Response: The project has not advanced to the point of preparing the environmental documentation.

19. Comment: Page 6-24: Cache Creek Integrated Project

- *“ Please erase “U.S. Bureau of Land Management designation of a Cache Creek as a natural area” and replace with “Cache Creek federal Wilderness designation.” “*

Response: The suggested change was made as it applies to land under the jurisdiction of BLM.

20. Comment: Page 6-25

- *“Yolo County must be listed as partner in this project.”*

Response: The County is listed in the previous paragraph in the report as part of the partnership with the YCFCWCD and the City of Woodland.

21. Comment: Page 6-26

- *“We have serious concerns with respect to the composition and representativeness of the Flood Management Technical Committee. It currently consists of 6 engineers and 1 farmer. In our judgment this composition seriously undermines the public process and trust in the IRWMP process. It is, perhaps, also a fatal flaw in efforts to develop a community consensus on flood management options for Woodland. Tuleyome has formally requested to be a member of this committee in the past, and there are numerous other interests in the county that should be part of these discussions.”*

Response: This concern was dealt with in the composition of the recently formed and expired Flood Advisory Committee. This is not to say that there may not be another Technical Advisory Committee formed in the future.

22. Comment: Page 6-28: Item 2

- *“ “The title of Item 2 should read “Perform Aquatic and Riparian Opportunity Assessment.” ”*

Response: The intent to assess opportunities is clearly stated in the text that follows the heading.

- *“In addition, this study should not be limited to the area downstream from Capay Dam. It must include the creek from Clear Lake Dam and Indian Valley Reservoir to below the settling basin.”*

Response: Language was added to reflect the Cache Creek System.

23. Comment: Page 6-31: Item 11.

- *“Language limiting this action to the area below Capay Dam must also be eliminated. Items 2 and 11 are directly related to water flows and ecosystem processes throughout the length of the creek, and the entire system must be studied in order to address the principles of watershed science that underlie integrated regional water management planning. As we have said on numerous occasions, these studies need to be started as soon as possible, as they must be completed prior to moving forward with water supply, water quality, and flood control projects that may have adverse effects on the aquatic ecosystem elements and fisheries in the basin. We do appreciate that some funding has been set aside to begin this work.”*

Response: The language has been modified to refer to Cache Creek without reach restrictions.

24. Comment: Figure 6-6

- *“We will submit additional comments on this chart. But, it is clear that the cross references for Tasks 11 and 12 are inadequately marked. The potential to establish anadromous fisheries and evaluate potential for aquatic habitat enhancement must also precede the Huff Corner levee work in the creek, reconciliation of the Cache Creek settling basin, the purported Cache Creek tributary detention basin project, the Cache Creek off-stream detention basin project, the Woodland area flood management project, Water management program, and the Clear Lake operations evaluation project. The interrelationships of all of these project elements is the primary point that Tuleyome has been stating about this planning effort for several years: it is simply impossible to look only at water supply, or flood control, or any other technical phase of water resources planning, without looking equally at the ecological, environmental, recreational, and other aspects of water resource planning and management in the county.”*

Response: Work related specifically to the Huff Corner levee is not specifically addressed. There is agreement on the intent of the comment and it is for that reason that the work described in Task 2 under the Water and Aquatic Habitat Management Element was indicated to be initiated early.

25. Comment: Page 6-57

- *“Please add Tuleyome as stakeholders in the Yolo County sloughs, canals and creeks integrated projects.”*

Response: This was done.

No. 13 – Joel Buettner, Sacramento-Yolo Mosquito and Vector Control District

Comment: *Mr. Buettner draws attention to their concern regarding the creation of mosquito breeding sources and notes that his District has the authority to abate public nuisances and impose civil penalties and suggested corrections and the addition of some language related to the concern of mosquito breeding sources.*

Response: Your points are well taken. The corrections and suggested language noted in your letter are being included in the IRWMP.

No. 14 – Vance Russell, Audubon California

Mr. Russell identified three recommendations that he feels should be addressed in the IRWMP. These are identified below with responses.

1. **Comment:** *Mr. Russell recommends that the WRA develop guidelines for setting regional priorities and integrating programs, policies, and project actions for planning and future funding purposes.*

Response: The resources, the degree to which projects have been identified and analyzed, and the stakeholders involved in the respective subareas identified for implementing the IRWMP vary substantially. For this reason, setting priorities between the respective subareas is problematic. Establishing guidelines or a process/procedure for establishing priorities tailored to the respective geographic areas would be beneficial in the future.

2. **Comment:** *Mr. Russell recommends that a prioritization process should give an appropriate balance to water, agriculture, and the environment without compromising any of the three.*

Response: As a practical matter, one interest will emerge to be the “lead”. This will be driven to some extent by resource needs, readiness, source of funding, and relative feasibility. To the extent all resource interests are moving forward albeit some in greater steps than others none should feel compromised.

3. **Comment:** *Mr. Russell indicates that the state requires monitoring and measuring the effects or outcomes of the recommended plan actions and that not having them in the IRWMP will jeopardize the opportunity of funding.*

Response: Monitoring and measuring the effects or outcomes of actions is important; however, the protocols for this would be tailored to a specific action the details of which are not defined at this time. The monitoring protocols will be important in an application for funding a particular action.

No. 15 – Mary Kimball, Center for Land-Based Learning (CLBL)

1. **Comment:** *Ms. Kimball indicates that the CLBL feels the IRWMP should have a process by which organizations such as hers would be able to implement projects within the Sloughs, Canals, and Creeks Management Program for which they have the ability and resources. A concern expressed is that without a structured process certain organizations will have the advantage over others with respect to implementing their own priorities.*

Response: The intent of the IRWMP is to coordinate the activities of entities participating in resource related activities within the respective geographic subareas and not to exclude or compete with each other. There is no shortage of work and it behooves all parties to work together for the benefit of the community of Yolo County. The response you received with respect to how various groups work together was an honest one at that time and that structure needs to be worked out with the parties and stakeholders within the respective geographic subareas. The structure will be different in each geographic subarea. The CLBL is encouraged to be an active participant in the program and work with or assist the YCFCWCD to organize and implement actions in the above-referenced program.

2. **Comment:** *Ms. Kimball expresses concern regarding a prioritization process and that although it is a difficult and complex process there needs to be a way to determine priorities.*

Response: The prioritization of actions is complex and even more so for this particular integrated program. Do you prioritize by waterway or by activity? In reality, it will probably be some of both and with other parameters as well. The collaboration of all interest groups and landowners as well will be important. The program is in its formative stages and CLBL needs to be actively involved. The approach is not to be a competitive one but a collaborative one instead. As noted above the CLBL is encouraged to be in direct communication with the YCFCWCD at this time.

No. 16 – Frank Sieferman, Jr., Yolo County Board of Supervisors

The Board of Supervisors addresses three subject areas where changes should be incorporated into the IRWMP. Each is addressed below.

1. **Comment:** *Prioritize actions. The Board encourages the WRA to take the time necessary to develop priorities in a thoughtful and careful manner and include all interested stakeholders in the process.*

Response: The WRA allocated three months for the lead partners to work on prioritization and integration of actions for each of their respective geographic subareas. The product of that effort is embodied in the IRWMP for each subarea or integrated project. The resources, the potential actions, the manner in which they are integrated, and the stakeholders involved are quite different within each of the integrated projects. There is no “cookie cutter” that fits all circumstances. There is no substitute for communication, coordination, and collaboration among the parties involved and this will be the key to success. Priorities will change depending upon several factors, one of which is funding and its related criteria. The action of highest priority may in fact be a long-term project by virtue of its complexity and size. This does not mean that a lower priority action is put on hold until the priority action is implemented. From a practical standpoint, so little is known of the majority of the potential actions that several tasks have been identified for implementation in order to determine if the action is in fact feasible or what the physical parameters of the action are.

2. **Comment:** *Integrate actions. The Board suggests that the WRA develop a strategy for integrating actions so that they achieve multiple benefits. It is suggested further that the WRA make an initial attempt at integrating actions now and to develop a strategy that lead agencies may use to revise integrated actions in the future.*

Response: The IRWMP is comprised of Integrated Actions. By definition, each integrated action is comprised of component actions. The component actions are to be integrated as implementation occurs and as it is determined how this can be best accomplished. As noted above, implementation in the early years will be the product of what are identified as prerequisite tasks. For example, the Sacramento River West Bank Integrated Project has public safety as a high priority. Nevertheless, one cannot commence implementing levee construction or reconstruction without first completing several critical prerequisite tasks such as geotechnical investigations, establishing zones of benefit and assessment districts, etc. The strategy for integrating actions in the future will be different for each of the respective subareas and will be the product of the collaborative process that emerges in each. This process is well established for Putah Creek as a result of a lengthy process and the dedication of many people. What is important is that it works and progress is measurable. That process is not necessarily a template for the other subareas.

3. **Comment:** *Clarify implementation strategy. The Board suggests that the WRA should create clear guidelines for implementing the IRWMP in Yolo County.*

Response: The discussion on implementation has been expanded in the IRWMP to reflect some of the Board's suggestions. The implementation strategy has been expanded to include factors that are deemed important for the WRA and lead partners as they proceed into the implementation process.

No. 17 – Caroline Quinn, City of West Sacramento

1. **Comment:** *Ms. Quinn indicates a defensible process of prioritization and integration of IRWMP actions is needed including a method for stakeholder input on the priorities.*

Response: The WRA allocated three months for the lead partners in the respective geographic subareas to revisit prioritization and integration of potential actions. The WRA also allocated funds to the Sacramento River West Bank Integrated Project to facilitate prioritization and integration. The product developed for each subarea in relation to further prioritization and integration is presented in Section 7 of the IRWMP.

2. **Comment:** *Ms. Quinn indicates placing more emphasis on greater integration of recommended actions in different areas of resource benefit and that perhaps a new consultant could fine-tune the Plan with fresh eyes.*

Response: The majority of the actions identified in the IRWMP are not well defined in terms of scope and even location. This was recognized by most of the members participating in the development of the IRWMP. Although integration was deemed

important it was also understood that devoting additional time to integrating actions that are not well defined would be academic. It was understood that more investigative work on the actions was necessary to understand where integration was most beneficial. The consultants providing additional assistance to the City of West Sacramento and Yolo County for the Sacramento River West Bank Integrated Project were involved in the preparing the draft IRWMP.

3. **Comment:** *Ms. Quinn suggests that spending additional time to polish and fine-tune the IRWMP would assist in developing more competitive projects.*

Response: As noted above, the WRA provided three months in the schedule for the lead partners for the respective geographic subareas, particularly the Sacramento River West Bank and Yolo Bypass Integrated Projects, to revisit the prioritization and integration. The polished documents are now included in the report. The competitiveness of a given project for implementation grant funding will be determined on the merits of the project based on information that needs to be developed beyond the IRWMP.

No. 18 – Jerold A. Bruns, California Regional Water Quality Control Board, Central Valley Region

1. **Comment:** *Mr. Bruns draws attention to the concerns related to mercury discharges in the watershed and notes that, where applicable, the monitoring and assessment requirements included in the recently adopted Regional Water Board Cache Creek Mercury Control Program should be rolled into the plan.*

Response: The mercury issues relate largely to the Cache Creek Integrated Project and the Yolo Bypass Integrated Project and the lead partners are fully aware of the concerns related to mercury. Reference will be made to Regional Boards Mercury Control Plan in both integrated projects.

2. **Comment:** *Mr. Bruns notes that the State Water Board administers funding programs that provide grants and/or loans for wastewater treatment plant construction and provides the website address for downloading related information.*

Response: The WRA appreciates the helpful reference you provided. Reference to this information will be included in the funding section of the IRWMP.

3. **Comment:** *Mr. Bruns identifies programs of the Regional Water Board that apply to discharges that may be associated with implementation of IRWMP actions in the future.*

Response: The WRA appreciates this information and it will be referenced in the discussion on environmental compliance in the IRWMP.

No. 19 – Yolo County Parks, Recreation, and Wildlife Advisory Committee

The committee provides comments under two categories: General Individual member comments, and Advice on setting priorities.

General individual member comments:

1. **Comment:** *Use demographic data more recent than 2000 data.*

Response: The information compiled was based on using one source to represent the respective cities. This was the most readily available at the time.

2. **Comment:** *Specifically identify lead agencies in the IRWMP to carry projects forward.*

Response: The lead partners for the respective subareas are identified. It is premature to identify the lead agency for implementing actions. The actions need to be better defined and the agency that takes the lead is not necessarily known at this time. Granted, some are obvious because of jurisdictional responsibilities; however, others could be implemented by various agencies.

3. **Comment:** *It is suggested that the two Cache Creek Integrated Projects be combined.*

Response: This was already done in the draft Action Program.

4. **Comment:** *Include some evaluation of general feasibility of flood management alternatives in the IRWMP.*

Response: This type of evaluation would logically be required for other alternatives if it were done for flood management. This was beyond the scope of the IRWMP.

5. **Comment:** *Identify opportunities for recreational enhancements as part of the Sloughs, Canals, and Creeks Integrated Project and further develop the description and integration of the actions.*

Response: The opportunities for enhancement will be site-specific and involve landowner participation and the involvement of many stakeholders. This is anticipated as an important part of the planning and implementation of the integrated project subsequent to completion of the IRWMP.

6. **Comment:** *Combine all types of use of the gravel pits and related Lower Cache Creek Area Features into a single master plan.*

Response: A master plan for Lower Cache Creek has been prepared by Yolo County as part of the Cache Creek Resources Management Plan. Activities along the creek will need to be coordinated with the existing master plan.

7. **Comment:** *Better establish the detailed and/or quantifiable benefits obtained by integrating individual actions into “integrated projects.”*

Response: To develop detailed and/or quantifiable benefits requires that the actions themselves are well defined. Considerably more work is required to know the dimensions or details of a particular action. This will, of necessity, have to be done in the implementation phase.

Advice on setting priorities:

1. **Comment:** *Prioritize based on merit, not only on “the extent that prerequisite tasks are required before an action can be implemented.”*

Response: The merit of actions, similar to the benefits noted above, cannot be evaluated when the actions are not well defined as most the actions are. What the IRWMP illustrates is that there is a lot of opportunity; however, there is a great deal of work to be accomplished to begin to understand the full extent of the opportunity. The prerequisite tasks, if completed, are intended to provide information from which a better definition of several actions will begin to be evident.

2. **Comment:** *Prioritization would be easier if we were able to base it on some fiscal information, specifically projected costs, fiscal history, and projected revenue for each component.*

Response: What is stated is true; however, as noted above, information on the actions is severely lacking to do what is suggested. It is time to get the program on track and keep it moving.

3. The Committee suggest the following as top priority actions:

- 3.1 **Comment:** *Foundational Actions that address wildlife and recreation.*

Response: The WRA sees this as a priority and is considering allocating monies from the WRA budget to initiate work on this action.

- 3.2 **Comment:** *Removal of invasive species from Cache and Putah Creeks.*

Response: There is widespread agreement on this action and work is continuing on this action.

- 3.3 **Comment:** *Aquatic and Riparian Ecosystem Enhancement areas that benefit other action categories, including Recreation.*

Response: Aquatic and Riparian Ecosystem Enhancement is an important consideration in the integrated projects for each geographic subarea. A determination of what it means in each area is not known at this time; however, with the appropriate studies and investigative work a definitive program can be

defined. It would be helpful if Committee members participated in the stakeholder groups that will be a part of the implementation program for most of the integrated projects. The lead partners are identified for each subarea and can be contacted to obtain specific information on the planned meetings and activities.

- 3.4 **Comment:** *All those Recreation actions that are part of the Parks and Open Space Master Plan and/or have been recommended by the PRWAC.*

Response: The lead partners for the respective integrated projects recognize the importance of recreation. As more detailed planning for implementation of actions within the respective integrated projects takes place the opportunity for recreational elements will be considered as a component of an integrated project or a stand-alone project. Again, it would be helpful if Committee members participated in the stakeholder groups that will be a part of the implementation program for most of the integrated projects.

- 3.5 **Comment:** *Actions benefiting West Sacramento which may not have been included in the Parks and Open Space Master Plan.*

Response: The lead partners for the Sacramento River West Bank Integrated Project recently completed an effort to identify and prioritize actions. Both recreation and aquatic and riparian ecosystem enhancement actions were addressed.

No. 20 – Vicki Murphy, County Resident

1. **Comment:** *Ms. Murphy indicates that much more attention needs to be devoted to removing sandbars and vegetation from the Cache Creek channel to maintain the flood-carrying capacity. She also asks if Cache Creek will get its share of funding to do more projects.*

Response: Without any doubt Cache Creek is a resource where flood management and the integration of resource categories are of high priority. Actions taken recently by the governing bodies of Yolo County, the City of Woodland, and the Yolo County Flood Control & Water Conservation District to enter into a Memorandum of Understanding to implement Action FM35, Creation of Flood Management Division or Entity, is illustrative of the importance being given to flooding associated with Cache Creek and Yolo County generally.

2. **Comment:** *Ms. Murphy expressed her concern about the time involved to get permits to implement projects and that there should be a stream-lined permit process to allow certain projects and types of work to move forward within waterways.*

Response: The WRA and member agencies agree with the expressed concern and, it is in part for this reason that the work of the Yolo Habitat JPA is included in the IRWMP and a Foundational Action.

3. **Comment:** *Ms. Murphy expresses concern that the “do-nothing-but-neglect-policy” of “flood management” in California as well as with Cache Creek is a problem and that an effective policy to deal with flooding before it happens is needed.*

Response: From both a statewide and local perspective flood management, hazard identification, and emergency preparedness have never received the attention that is being given at this time. Funding is available to those parties that actively “get their act together.” As noted under comment 1 above, flood management ranks higher and is being treated more seriously now than it has ever been. The opportunity to accomplish or overcome the concerns expressed is good at this time.

4. **Comment:** *If there is wide-spread flooding, what happens to landowners if there are attempts by environmental groups to lay claim to newly flooded areas as “natural flows,” “wetlands,” and new riparian corridors?*

Response: If new areas are proposed to be flooded or existing flooding is proposed to be increased, affected landowners will have to be compensated fairly before a project can be implemented. There is no dispute on this. However, what is considered to be fair compensation may be disputed.

No. 21 – Maria Wong, Yolo Habitat JPA

Ms. Wong reviewed the administrative draft of the IRWMP and offered both general and specific constructive comments that are both structural and editorial in nature.

1. **Comment:** *Ms. Wong suggests editing the document and moving the description of the actions.*

Response: The document has been edited and the action program has been moved to a new Section 7.0.

2. **Comment:** *Ms. Wong suggests replacing jargon with more common terms for ease of reading.*

Response: The WRA plans to prepare an Executive Summary that would be written for a more general audience and the document would be written accordingly.

3. **Comment:** *Ms. Wong suggests presenting a “take home message” early and concisely.*

Response: This suggestion is good. A “take home message” was drafted for inclusion as a Foreword, however time did not allow all agencies that may be concerned about the language to review it beforehand. Therefore it was not included. Although the WRA does intend to prepare a summary document that should be helpful.

4. **Comment:** *Ms. Wong suggests editing to pick structural inconsistencies and cites an example.*

Response: The example noted has been corrected.

5. **Comment: Section 1**

1.2 Suggests adding a sentence regarding the statutory purpose of the IRWMP.

Response: A sentence was added referencing Proposition 50, Chapter 8.

1.3 Indicates that the stated goal in Section 1.3 was oversimplified.

Response: The goal in Section 1 was removed and the goals and objectives in Section 2 were expanded.

1.4 Suggests discussing how the collaborative process will be developed or referencing Section 6.0 and how “outsiders” are admitted to the process.

Response: Reference is made to Section 6.0 regarding implementation strategy that addresses some of the items addressed in the comment.

1.5.6 Notes that it is not clear as to what is meant by “native” classification as a land use designation.

Response: The “native” classification is the terminology reported in DWR’s land use surveys and relates essentially to a non-cultivated vegetation.

6. **Comment: Section 2**

2.1.2 Refers to comment 1.2 above regarding goals and objectives.

Response: As noted above, the goals and objectives were expanded in this section.

2.1.3 Notes that stated objectives appear to rely on a future process to actionable and suggests adding language recognizing this and outlining a roadmap for developing that process.

Response: The stated objectives are to guide the planning and implementation of individual actions and integrated actions. Those involved in the respective integrated actions should be attentive to the objectives as they design and implement prerequisite tasks aimed at implementing actions.

7. **Comment: Section 3**

3.6 Suggests reversing the order of the first two sentences and asks how new information will be integrated as the IRWMP process unfolds.

Response: The two sentences were reversed. As new information becomes available, it will be the responsibility of the lead partners to ensure that integration is accomplished where it is appropriate.

8. **Comment: Section 5**

- *Suggests moving the detailed discussion to an appendix.*

Response: It is not clear as to what the detailed discussion refers. If it was intended to be the tables, it was decided to leave the tables in Section 5.

9. **Comment: Section 6**

6.2.3 *Suggests explaining the statement “Integration is not the product of this IRWMP”(pg. 6-4)*

Response: Integration is not accomplished in a written document. Integration is accomplished in the implementation, if at all. The text notes that “this IRWMP does provide the overall guidance and framework by which integration can be initiated and sustained as a common aspect of implementation.”

6.2.6 *Makes the following suggestions and poses questions as follows:*

- *It appears that most foundational projects are “countywide”. Were they elevated to this status based on some subjective criteria?*

Response: The Foundational Actions were identified as such because they are essentially countywide and should be considered for implementation regardless of the IRWMP. As noted in the text, several of them are being implemented and will be enhanced over time.

- *Suggests moving details of Foundational Projects to the appendix.*

Response: The “details” of concern are not so detailed and were deemed appropriate to leave in the main body of the report.

- *It is unclear how centralized the structure is intended to be. An organizational chart would be helpful.*

Response: The figure entitled, “Yolo County IRWMP Implementation Structure” is an organization chart showing the relationship between the WRA, Technical Committee, and the Foundational and Integrated Actions. Coordination is the central function of the WRA and Technical Committee. The intent is that non-member organizations would coordinate their projects and programs through the respective integrated projects and look to the WRA to identify opportunities to coordinate work.

- *It is unclear how entities not enrolled in the WRA who undertake “activities’ under this plan would be subject to the decision making process of the governing organization (WRA).*

Response: The WRA is not a governing body, but rather one with a primary function facilitating the coordination of the activities of its member agencies. It is suggested in the IRWMP that the WRA serve as a vehicle for coordinating activities of non-member entities as well. This relates to the Putah Creek and Yolo Bypass Integrated Projects in particular. It is also suggested that the WRA be structured to function as a fiscal agent serving all integrated projects.

No. 22 – David Okita, Solano County Water Agency

Comment: *Mr. Okita provide editorial comments to text related to Putab Creek*

Response: The edits were incorporated into the IRWMP.

No. 23 – Bob Schneider, Tuleyome

Comment: *Mr. Schneider suggested including reference to climate change and increasing energy costs in the goals of the IRWMP.*

Response: Reference to climate change has been incorporated in the objectives related to water supply and flood management. Increasing energy costs will, of necessity, be dealt with as will the increase in costs for other items when actions are formulated, evaluated, and implemented.

No. 24 – Petrea Marchand, Yolo County and Dave Shpak, City of West Sacramento

Comment: *The authors suggested edits and additions to the goals and objective of the IRWMP that provide greater linkage between the IRWMP and the County General Plan.*

Response: The majority of the suggested edits and additions were incorporated into Section 2 of the IRWMP.

No. 25 – Bob Schneider, Tuleyome

Comment: *Mr. Schneider expresses his concern regarding the composition of the Yolo Bypass Working Group Subcommittee that currently exists to prioritize and coordinate projects under the Yolo Bypass Integrated Project. In particular, Mr. Schneider does not feel there is appropriate representation on the subcommittee to speak for maintaining, restoring, and enhancing the Bypass for fish.*

Response: The subcommittee has been in existence a short time and was established in response to the request from the WRA to establish a more formalized structure for addressing issues and projects in the Yolo Bypass as an element of the IRWMP implementation process. The subcommittee and the overall coordination through the WRA and among the respective integrated projects is in the formative stages. The WRA, in the interest of facilitating management of the resources for the overall benefit of the County can

provide a forum for addressing the concerns expressed. It is suggested that the concerns expressed and the basis for them be discussed with the WRA.

No. 26 – Bob Schneider, Tuleyome

Comment: *Mr. Schneider describes the importance of the Yolo Bypass as a flood management feature for the Sacramento Region and the deficiencies that are now known to exist and suggests including the evaluation of options for increasing the Yolo Bypass flood conveyance capacity as a Foundational Action in the IRWMP.*

Response: Mr. Schneider’s summary of the known deficiencies associated with the Yolo Bypass is good. The importance of the Yolo Bypass as a flood management feature for flood protection for the Sacramento Region is well stated. Since this item is not a countywide issue it will not be included as a Foundational Action, but rather highlighted in the discussion under the Yolo Bypass Integrated Project and the Cache Creek Integrated Project.

It is recognized that the Yolo Bypass and its relationship with Cache Creek are very important. Since the draft IRWMP was completed, items of notable significance have been accomplished. First, the early attention by the jurisdictional bodies of the County, City of Woodland, and Yolo County Flood Control & Water Conservation District to implement Action FM 35, and the Creation of a Flood Division or Entity to address flood-related issues in the County is a major step toward addressing the comment. Although this effort is only now in the process of becoming memorialized in a Memorandum of Understanding, it does set the stage for linking flood and other related items between the two geographic subareas.

Second, is that steps have been made to establish an institutional framework for the Yolo Bypass that could not only ultimately provide a structure for coordinating actions throughout the Bypass area, but also facilitate coordination, where appropriate, between the respective geographic subareas of which Cache Creek is one.



Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Monday, December 04, 2006 8:26 AM
To: Fran Borcalli
Subject: Mark Williamson - IRWMP Comment Page

From: <warrenfwy@yahoo.com>
To: <info@yolowra.org>; <cal@catanio.com>
Sent: Tuesday, November 22, 2005 9:45 AM
Subject: From IRWMP Comment Page

> Below is the result of your feedback form. It was submitted by
> (warrenfwy@yahoo.com) on Tuesday, November 22, 2005 at 09:45:51
> -----
> -----
>
>
> name: Mark S. Williamson
>
> organization: 431 Heron, Davis
>
> comments: I am interested in the Yolo County IRWMP process but unable
> to attend -- the November 30th meeting conflicts with the Association
> of California Water Agencies conference.
>
> The IRWM Plan should include examination of:
>
> 1. Improved drinking water quality.
> 2. Sustainability of water supplies.
> 3. Maintenance of agricultural character of Yolo County.
> 4. Preventing development in flood prone areas -- NOT simply building
> or enlarging levees.
> 5. Identification and protection of groundwater recharge zones.
> 6. Regional communication and cooperation.
>
> Please include me on the mailing list for future meetings.
>
> -----
> -----
>
> HTTP_USER_AGENT: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US;
> rv:1.7.12) Gecko/20050915 Firefox/1.0.7

②

Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Monday, December 04, 2006 8:27 AM
To: Fran Borcalli
Subject: Siefertman, Sr. - IRWMP Data inquiry

----- Original Message -----

From: WRA
To: Fran Borcalli
Sent: Thursday, February 16, 2006 1:32 PM
Subject: Re: IRWMP Data inquiry

Thanks for following up on this Fran.
 Donna

----- Original Message -----

From: Fran Borcalli
To: WRA
Sent: Sunday, February 12, 2006 1:10 PM
Subject: RE: IRWMP Data inquiry

Donna,

I am pretty sure that we have them however, I will confirm this with Phil Hogan.
 Thanks,

Fran

Francis E. Borcalli, P.E.
 Wood Rodgers, Inc.
 3301 C Street, Suite 100B
 Sacramento, CA 95816
 Telephone: 916-341-7760
 Direct Line: 916-326-5224
 Facsimile: 916-341-7767
 E-mail: fborcalli@woodrogers.com

From: WRA [mailto:wra@dcn.org]
Sent: Friday, February 10, 2006 4:01 PM
To: Fran Borcalli
Subject: IRWMP Data inquiry

Hi Fran,
 I received a call from Frank Siefertman, Sr. the other day. He wanted to know if we are aware of engineering studies done in the late 70's on the Cache Creek north areas by the Soil Conservation Service. These were studies on flood control & water storage. He called them the "566 Projects" and indicated that they would be in the SCS archive files. Are you aware of these reports he is referencing? He wanted to be sure they were part of our IRWMP planning efforts.

Donna Gentile, Administrative Coordinator
 Water Resources Association of Yolo County
 P.O. Box 8624, Woodland, CA 95776
 Ph: (530) 666-2733; Fax: (530) 666-4257

Tuleyome

April 21, 2006

Dave Schuering, Chair, Board and Technical Committee
Water Resources Association of Yolo County
P.O. Box 8624
Woodland, CA 95776-8624
Email: info@yolowra.org

Dear Dave, Board and Technical Committee:

Tuleyome supports an integrated approach to water resources planning in Yolo County. In the past Tuleyome representatives have written letters of support, participated in public meetings, and followed the work of the Technical Committee. In addition, we have on numerous occasions provided both written and oral communications with respect to the potential aquatic and habitat restoration actions and potential recreation actions that should be included in an Integrated Regional Water Management Plan (IRWMP).

Thus, it was with some concern that I reviewed the Draft Integrated Actions handout, dated April 13, 2006, which was presented at the Cache Creek focus group discussion on April 18, 2006.

Key projects with respect to the reintroduction of anadromous fisheries (AR8, AR 12, and AR 29) were omitted from the Integrated Projects for both Cache Creek Water Management and Cache Creek Flood Management.

It is my understanding that this omission was based upon the perception that these projects were not adequately "developed." In further discussions following the session, it was mentioned that this was actually no longer the case, as the Technical Committee had decided at a recent meeting that, at this time, all "Potential Actions" should be included in the various "Integrated Projects," as they had not yet been "prioritized."

I appreciate that this decision was made, although it is my understanding that this was not a unanimous decision by all members of the Technical Committee. Nevertheless, the concerns, perceptions, and trust that should exist with respect to the IRWMP being an open public process are damaged by the apparent exclusion of environmental concerns from the IRWMP formulation.

Tuleyome remains supportive of the IRWMP concept. It is vital that decision-makers in the County proceed to meet future Yolo County needs of water supply and quality, and to address issues of flood management, aquatic and riparian habitat enhancement, and recreation. In order to accomplish a truly integrated water resources management plan, important issues, concerns, and potential projects cannot be left out of consideration in the plan-development stages.

Tuleyome's participants in the IRWMP process have been impressed by the efforts of Water Resources Association, and in particular the members of the Technical Committee, in their commitment to an inclusive and open public process. However, the commitment to openness has

apparently not resulted in a commitment to ensuring that important conservation concerns are included in and addressed by the IRWMP. **We suggest that the IRWMP incorporate the following steps to ensure an integrated process that addresses all of the concerns that exist for water in the County (see discussion below):**

1. Include additional "foundational" tasks into the IRWMP:
 - A. Identify important biological and ecological resources associated with the streams, sloughs, creeks, and rivers in the county that will be affected by the water-supply and flood-control projects described in the IRWMP. In particular, Tuleyome believes that there needs to be substantial involvement in studying the potential for salmonid reintroduction to the Cache Creek basin (suggested task WM8). Tuleyome also believes that substantial additional focus is needed for fishery and other ecological resources in the Yolo Bypass, including salmonid concerns. Tuleyome believes that identifying existing biological and ecological values associated with sloughs is an essential foundational task (suggested task WM9)
 - B. Tuleyome believes that associating the focus of the IRWMP with the essential focus of the Yolo County HCP/NCCP is also a foundational task, which needs to begin before there are commitments made to adopt the content of the IRWMP.
2. Begin necessary or appropriate environmental studies now:
 - A. Identify fishery resources within the Cache Creek basin, including those associated with anadromous fisheries reintroduction and those associated with maintaining the important native fishery resources in the basin.
 - B. Identify the fishery, riparian, and wetland resources within the Yolo Bypass, together with solutions to their protection and enhancement.
 - C. Identify biological resources associated with sloughs, including preliminary considerations of water needs for maintaining and enhancing these resources.
3. Provide full public access to all WRA planning actions and documents.

1
Con't

Discussion

1. Foundational Actions: It is our understanding that "foundational" actions are basic in nature to sound water management in Yolo County. In other words, these actions underlie the other tasks in the IRWMP, and many other "potential actions" cannot proceed until these foundational actions are in place. Since Tuleyome members first became involved with the WRA process for the IRWMP, we have been urging that identifying biological and ecological elements associated with Yolo County's streams, sloughs, and other water resources constituted an essential action for such a Plan. Our comments have consistently indicated that identifying the ecological water needs of the County's waterways would be an essential underlying issue for the IRWMP.

2

It is with a significant degree of concern that we now note that the draft integrated projects do not include tasks that will allow the WRA, County government, and the County's citizens to understand what biological "resources" exist in the County's waterways and how the IRWMP would affect them. In Tuleyome's opinion, the "resource assessment" studies underlie informed decision-making for any proposed action that might result from the Plan, and it is difficult for us

to see how the County could adopt possible implementational projects, pursuant to the California Environmental Quality Act and the California Water Code, without this information.

Therefore Tuleyome requests that the identification of biological and ecological concerns for the waterways in the County be identified as a critical "foundational" element for the Plan. The appropriate studies must be initiated as soon as possible in order to provide key information needed for the rest of the Plan's implementation. As our representatives have commented previously, identifying the biological circumstances concerning the reintroduction of anadromous salmonids to Cache Creek is certainly one area of critical environmental concern. A similar concern is the current lack of understanding about the relationships among biological resources and the use of a number of natural water features called "sloughs" for water supply and drainage purposes. These are only examples; we have raised a number of other biological questions previously.

There is much to learn and **it is imperative that these complex studies begin as soon as possible to ensure that future "actions" do not create significant adverse effects on aquatic resources.** It is important to remember that the benefits to fisheries that are included in an integrated plan can help the County in securing additional capital dollars as well as funding priority.

2
Cont

Tuleyome continues to support improved water-management efficiency in Yolo County, including irrigation, flood-control, and conjunctive use. However, existing biological habitat functions in the County's streams, sloughs, and irrigation distribution system must be maintained; proposed management projects may provide opportunities for these habitats to be improved. For example, as irrigation efficiency is improved carriage water and tailwater return flows that currently nurture habitat within these features may be reduced. We need to know, for example, what water flows will protect these habitat functions as changes in irrigation water or storm drainage conveyance is implemented. While there is real potential for improved efficiency in the irrigation and drainage functions in the system, as well as for enhanced water quality in these reaches, the biological studies that will tell us about the biological impacts of the changes are necessary. Once again, we will not be able to proceed with beneficial projects until we understand and can address these biological questions.

2. Begin Studies Now: The resource-based studies mentioned above are generally multi-year in nature. If the need for information is not to hold up beneficial projects, then we suggest that it is essential that the County begin them now. There is currently available funding in the IRWPM grant intended for exactly this purpose. Additional funds for environmental projects, including the fishery studies on Cache Creek, may be available through the Cache Creek Resource Management Plan funding assessments related to the flood conveyance in the Yolo Bypass, and other ongoing water-related issues. While it will take a number of years to complete these studies, an early result of the study can be an outline of the issues, and the County can develop a task list and time schedule and begin working in a timely manner to assist in integrating these actions with other water supply and water quality concerns.

Anadromous Fisheries Studies: Tuleyome has provided numerous comments in the past about the studies that are necessary to address potential fishery management needs in Cache Creek,

particularly the restoration of anadromous species. We believe that the County will need information about: (1) water flows; (2) water quality, including temperature; (3) elimination of likely fish barriers (at the settling basin, Moore siphon, and Capay Dam) with respect to potential design and cost; (4) protection of native fisheries above the Capay Dam; (5) potential spawning locations; (6) potential for out-migration; and (7) institutional solutions, such as the "safe harbor" letter that NOAA Fisheries issued regarding the restoration of salmonids to Putah Creek. There is likely to be other appropriate information that is needed in order to determine the feasibility of reintroduction. While these are, for the most part, scientific studies, it would be advantageous to include a public outreach component with these studies. The draft reconnaissance-level report addressing potential fishery enhancement options in the Cache Creek basin that are associated with the YCFWCWD water delivery system, prepared by the Natural Heritage Institute in 2003, and Attachment E to the Report of Independent Science Advisors for Yolo County Habitat Conservation Plan /Natural Communities Conservation Plan (HCP/NCCP), dated March 2006, provide additional background information about this subject.

2
Con't

Yolo Bypass Fishery Needs: Information on the fishery values in the Yolo Bypass are available in a report prepared in December, 2002, by the Natural Heritage Institute ("Habitat Improvement for Native Fish in the Yolo Bypass"), and also in Attachment E to the Report of Independent Science Advisors for the Yolo County Habitat Conservation Plan /Natural Communities Conservation Plan. We have participated in a number of discussions about the Bypass's fishery resources in the past year, addressing potential enhancement options, possible improvements to the Fremont Weir, and other issues; it is clear to us that these issues are central to discussions and future implementation of the IRWMP.

Biological Concerns in Sloughs: We are unclear how much of the biological inventory work needed for the sloughs located between the Coast Range and the Yolo Bypass has been completed. Studies to determine the necessary water quantity and quality needed to maintain these aquatic resources have not been completed. It is time to start.

3. Open all technical committee meetings to the public: Tuleyome has in the past expressed concerns about closed sessions conducted by the Technical Committee, including the development and implementation of the prioritization process for the IRWMP. While we noted our concerns, we did not press this issue as we also recognized the occasional need to for an "administrative process." This has been characterized as the need to ensure a coherent document that is grammatically correct.

3

Efforts to implement prioritization or integrate projects in private, however, goes far beyond this concept of administrative draft; a closed process can significantly skew and short-circuit the public-involvement process for the IRWMP, and the perception of that process. I personally believe that this was dramatically illustrated by the actions that have prompted this letter.

It is time to open all technical committee meetings to the public.

Closing

In conclusion, Tuleyome acknowledges that the IRWMP process will determine the course of

water management in Yolo County for many years. It is also a critical tool that will help the County compete for limited water-resource dollars. The process is designed to integrate a series of individual actions supported by the community as a whole. As Tuleyome spokespersons have said on numerous occasions, the IRWMP needs to express a "vision" about the County's joint management of water resources, flooding, natural environmental values, and related concerns, and the studies and implementation projects need to flow out of that "vision." If the vision is good, it will speak for the County's citizens with one voice, allowing the County to compete with more populous areas.

3
Cont

We believe that the actions that we suggest can help us in this process. In particular, we need to dedicate available funds for the needed aquatic studies and begin this process in an expedited manner.

While we have a number of specific and significant concerns with the IRWMP, we still greatly appreciate the visionary work that the WRA and the Technical Committee have undertaken.

Sincerely,

Bob Schneider,
President

Copies: open letter

State Water Resources Control Board

4



Dan Skopec
Agency Secretary

Division of Water Quality
1001 I Street • Sacramento, California 95814 • (916) 341-5455
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100
FAX (916) 341-5463 • <http://www.waterboards.ca.gov>



Arnold Schwarzenegger
Governor

4-1

/SENT VIA E-MAIL/

May 15, 2006

David Scheuring, Chair
Water Resources Association of Yolo County
PO Box 8624
Woodland, CA 95776

Dear Mr. Scheuring:

RE: WATER QUALITY COMPONENT – DRAFT WATER MANAGEMENT ACTIONS

As a representative of the Nonpoint Source Pollution Program of the State Water Board, I have attended both public meetings of the Water Resources Association (WRA) on the Integrated Regional Water Management Plan (IRWMP). While we applaud your efforts in the Water Quality portion of your document for addressing solutions to important water quality issues, we feel the document overlooks an important aspect - addressing urban water quality issues.

The State Water Resources Control Board (SWRCB), at its' January 20, 2005 Board Meeting, adopted the concept of sustainability as a core value for SWRCB programs and directed its incorporation into future SWRCB actions (SWRCB, 2005). Further, the resolution identified "smart growth" and "low-impact development" (LID) as two sustainable practices related to water supply and water quality protection.

Low Impact Development (LID) is an approach to site design and storm water management that seeks to maintain the site's pre-development runoff rates and volumes. LID's goal is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Techniques are based on the premise that storm water management should not be seen as storm water disposal.¹ Instead of providing for the movement of storm water off site; LID techniques provide for the treatment of storm water on-site.

LID provides economical as well as environmental benefits. LID practices result in less disturbance of the development area, conservation of natural features, and are less costly than traditional storm water controls. The cost savings apply not only to construction costs, but also to

¹ Low Impact Development Center, Inc. <http://www.lid-stormwater.net>.

4-2

Addressee

- 2 -

Date

long-term maintenance and life cycle cost considerations. LID provides many opportunities to retrofit existing highly urbanized areas and can be applied to a range of lot sizes.

LID includes specific techniques, tools and materials to control the amount of impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices include bioretention facilities or rain gardens, grass swales and channels, vegetated rooftops, rain barrels, cisterns, vegetated filter strips and permeable pavements.

The Water Board believes the IRWMP is the appropriate vehicle to address long range strategies to manage urban runoff and requests that these sustainable technologies be considered for incorporation.

Thank you for your consideration of our concerns. If you have any questions, please contact me at 916-341-5306 or via e-mail at pgouveia@waterboards.ca.gov.

Sincerely,
/s/
Patricia Gouveia
MAA Coordinator
NPS Coordinator

Diane Tauzer
23011 Cty Rd. 103
Woodland, CA 95695
May 18, 2006

Dave Scheuring, Chair
Water Resources Assn. of Yolo County
P.O. Box 8624
Woodland, CA 95776-8624

Dear Mr. Scheuring;

I am writing to you regarding the County's effort toward developing an Integrated Regional Water Management Plan (IRWMP) and would like to make you aware of some flooding and drainage issues in the area of my property, which is located on County Rd. 103 about a mile south of Rd. 27.

There used to be a ditch running along the north side of my property (parcel 42-10-06) that drained most of the properties to the northwest between us and Willow Slough. About 7 or 8 years ago that ditch was filled in and shifted, against natural flow, to a new ditch that runs a mile north along Rd. 103, east on 27 and south on Rd. 104. This ditch is typically overgrown with cattails and tules to the point where flood water during a good storm has no place to go and backs up on the upstream properties for weeks at a time. This is bad for the animals kept there and for the homes that the water backs up to. The change in land management at the old Hunts property has also resulted in water backing up at a low corner and accumulating on my property both winter and summer. This can be a mosquito problem. I would support having something written into the IRWMP to address this local flooding problem either through regular ditch cleaning or re-pulling a drain ditch where it was to split the storm flows. We are just outside the irrigation district and it would help make farming more economical if District water could be made available.

1

One of my biggest concerns, and something that MUST be included in the IRWMP, is how the quality of the groundwater near the County Landfill is going to be monitored and maintained and how the health of those of us who live near the Landfill is going to be protected! A verbal reassurance is not enough.

2

I need answers to the question: "Who is responsible for monitoring the quality of our water and for reporting it to us on a regular basis?" The landfill was put in 30 years ago and I have never received any reports of when my or my neighbors wells have been tested, what was found and at what levels. I am particularly concerned about heavy metals, chloroform and other contaminants seeping through into the water table. I also have a concern about air quality, which can be very poor when the wind is blowing the wrong direction.

Diane Tauzer, concerned landowner

Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Monday, December 04, 2006 8:32 AM
To: Fran Borcalli
Subject: David Bird - Comments to IRWMP

----- Original Message -----

From: "David Bird" <dbird@tccanal.com>
To: <info@yolowra.org>
Cc: "Garreth Schaad" <gschaad@msn.com>; "Mike Urkov" <Mike.Urkov@CH2M.com>; "Ken LaGrande" <klagrande@sunvalleyrice.com>
Sent: Friday, September 22, 2006 10:44 AM
Subject: Comments to IRWMP

> Dear Mrs. Gentile,

> We have reviewed your IRWMP and congratulate you on it's content an
> thoroughness. We feel there are however, several issues that require
> additional consultation and fleshing out.

> Item 1: WS3.2 Oat Creek Water Storage Project
> This reservoir is approximately 4 miles south of the existing
> termination of the Tehama Colusa Canal. As a matter of fact, the basic
> engineering plans have existed for this project of quite some time.
> We believe additional investigation will reveal the viability of such
> a project.

[

1

> Item 2: WS3.3 Bird Creek Water Storage Project
> The Tehama Colusa Canal currently terminates at Bird Creek and as
> such no canal extension would be needed to service such a reservoir.
> It is worth while noting, that a canal extension departing the Bird
> Creek Reservoir would quit easily serve the Oat Valley requirements.

[

2

> Item 3: WS23 Tehama Colusa Canal Extension Project
> As previously discussed, the extension of the Tehama Colusa Canal
> holds a promise of better water quality, environmental enhancement,
> increased reliability, and is a substantial ingredient of an
> Integrated Regional Water Plan. We believe additional investigation
> along with inter-regional planning and partnerships to facilitate the
> canal extension would provide for greater water reliability, quality,
> and economics.

[

3

> Please let me know if we can be of any assistance of your developemnet
> of the plan.

> Best Regards,

> David E. Bird
> General Manager
> Tehama Colusa Canal Authority

7

7-1

Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Monday, October 30, 2006 10:29 AM
To: Fran Borcalli
Cc: DeBra, Jacques
Subject: Fw: Draft IRWMP comments
Attachments: General Comments.doc; Potential Trails along Cache Creek.doc; Foundational Action FA6.doc

Forwarding comments from Dave Pratt on the IRWMP.

Donna Gentile, Administrative Coordinator
Water Resources Association of Yolo County
P.O. Box 8624, Woodland, CA 95776
Ph: (530) 666-2733; Fax: (530) 666-4257
Website: www.yolowra.org

----- Original Message -----

From: Barberapratt
To: info@yolowra.org
Sent: Sunday, October 29, 2006 9:52 AM
Subject: Draft IRWMP comments

Hi Donna,

In case it would let you avoid having to transcribe my long comments, I've attached their files to this note.

Dave Pratt

General Comments/Questions on Section 5.4.4, Cache Creek Flood Management Integrated Project, pages 5-9 to 5-12

Why does this section completely ignore the Army Corps of Engineers conclusion that the preferred project for preventing flooding by Cache Creek of Woodland and the land north of the creek is "setback levees"? [US Army Corps of Engineers, March 2003. Lower Cache Creek, Yolo County, CA, City of Woodland and Vicinity. Draft Environmental Impact Statement / Environmental Impact Report For Potential Flood Damage Reduction Project.]

1

And why does this section make its principal reliance (top of page 5-12) on two kinds of projects that the Corps has specifically rejected?

- (1) "dry" dams, the best of which (Bear Valley), the Corps found to be maximally expensive and minimally effective. [US Army Corps of Engineers, June 1994. Reconnaissance Report, Westside Tributaries to Yolo Bypass, California]
- (2) temporary off-stream storage, which the Corps concluded would need to flood so much land so deep that it was impractical. [same 1994 reference]

A sentence on page 5-11 says, "While no firm decisions have been made, there seems to be a growing consensus that the Woodland/Cache Creek flood control solution will, by necessity, consist of multiple integrated actions." What is the "necessity" that prevents adopting the Corps' preferred project, that the Corps felt would suffice by itself? (Granted, some other actions, such as altered management of Indian Valley and Clear Lake water levels and releases, could be a helpful addition to any project, including setback levees.)

2

It seems likely that the California Department of Water Resources personnel who review this IRWMP will be familiar with the recent history of flood control studies and discussions for Cache Creek and will wonder about the points raised here and also why the Army Corps of Engineers publications on Cache Creek aren't included in the reference list of this IRWMP, even though the Corps is the leading flood control agency in the U.S. and has done a lot of work on Cache Creek.

3

Potential Trails along Cache Creek?

There is a good quality gravel road on top of the levee on each side of Cache Creek for the 11 miles from the Settling Basin upstream to where I5 crosses the Creek. The stream is in sight and the scenery is good. There is access to the levee top from public roads at the Settling Basin, Road 102, Highway 113, and next to I5. The levee-tops could be used as excellent trails at minimal cost.

These levees were built with public funds and are maintained at public expense but the land that the Cache Creek levees were built across was mostly (totally?) privately owned. Do members of the public have the *legal* right to go onto the levee-top roads, assuming that they get there from a publicly-owned access point, don't stray from the levee-top road until they leave via a publicly-owned access point, and don't in any way harm the levee or adjacent private lands while they are on the levee top?

The fact that IRWMP project R32, "Levee Public Access Improvements Project", is intended to facilitate foot and bicycle travel along the levee tops from UCD all the way to Woodland, and that some of those levees go across privately-owned land, presumably means that the public *does* have the right to use the tops of levees built with public funds across private lands.

4

If the public does have this right, the adjacent landowners would certainly object to the public being there, saying that their lands would get trashed. This is an important objection but there are ways to deal with it. In the first place, the level of trashing would certainly be way less than if the public had access to the levees by vehicles. (There is a lot of public hiking along the levee-top road on the west side of the Yolo Basin south of I80 and that area isn't noticeably trashed. And the hiking trails on the publicly-owned lands along upper Cache Creek aren't trashed.) But even if trashing proved to be less than the landowners expected, whatever amount there was would have to be dealt with. There could be at least two different solutions: have a county crew to take care of any problems, or have the county subsidize the land owners so they could take care of any problems themselves. Any law enforcement problems on the levees would certainly have to be a county responsibility.

If it turns out that the public actually does *not* have legal access to the Cache Creek levees, there would presumably still be the possibility to buy easements to create access. And if even that was not possible for the present levees, then maybe if any more levees will be built along Cache Creek, public access rights could be written into the agreements for building those levees.

Foundational Action FA6, Aquatic Habitat and Fish Monitoring Program (page 5-34) and Project AR8, Cache Creek – Yolo Bypass Anadromous Fish Passage Project (Table 5-5, page 5-50):

The studies needed for AR8 are well-known and sharply-focused. They are mainly some engineering work plus talking advantage of the biological knowledge that Peter Moyle and his coworkers already have. AR8 shouldn't be required to wait for someone to first figure out what the undefined FA6 should be about and then spending a year doing whatever they decide that it is.

5

Project AR48, Putah Creek Geomorphic Restoration (Table 5-5, page 5-55): When Lake Berryessa fills, there is still a very major flow through Putah Creek. Is it really a good idea to do these things that will reduce the channel capacity?

6

A few typos:

-page 4-4, top: FEMA will decertify if Yolo does (not?) submit the required geotechnical studies?

-page 5-1, bottom, next-to-last line: ...(w)hen actions...

-page 5-6, ¾ of way down the page: ...groundwater subsidence?

-page 5-43, item WQ13: Giardia

-Figure 6-7, item 9 in the middle of the table: Road 19 Storage Reservoir

7

IRWMP Comment Form - October 2006 Draft



10/25/06

8

Name: Dave Ceppos

Phone Number: _____

Address: _____

E-mail: _____

Comments: If you're looking to entice/interest the public, you've
Heard Tonight... tone tonight was an interesting approach.

- "We could spend tonight, tomorrow, tomorrow night
and the next day talking about this very large doc"-Lucy.
- "We've been meeting for 2 years but it seems longer"-Sid
- "I for one am glad this planning period is almost over"-Jag
- "We've been together what... 8-10? 13 years has it been
that long? seems like we've been meeting forever"-Sid
- A key question on how you've done what you've done
and prioritized is asked. And... no one wants to answer it
- "Are we going to be here all night?"-Lucy.
- "It's quite a short document"-Lucy
- "You're still trying to wade through the plan"-Lucy.

IRWMP Comment Form - October 2006 Draft



10/25/06

9

Name: Bob Schneider

Phone Number: 304-6215

Address: 607 North Star Woodland 95295

E-mail: bschneider@tulelake.org

- ① Comments: Under Water & Aquatic Habitat Management p 6-28
Task 2 Aquatic Assessment & Task 11 Establish Potential for
Establishing Anadromous Fish Populations
⇒ Both of these should extend to the Tolo Canyon line
and ~~not~~ NOT be restricted to below Copay Dam.

②

10

Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Wednesday, October 25, 2006 1:34 PM
To: Fran Borcalli
Subject: Fw: From IRWMP Comment Page

IRWMP comment received via website from Olin Woods, Willowbank County Service Area Committee. See you later!

Donna Gentile, Administrative Coordinator Water Resources Association of Yolo County P.O. Box 8624, Woodland, CA 95776
Ph: (530) 666-2733; Fax: (530) 666-4257
Website: www.yolowra.org

----- Original Message -----
From: <olinwoods@sbcglobal.net>
To: <info@yolowra.org>; <cal@catanio.com>
Sent: Wednesday, October 25, 2006 1:29 PM
Subject: From IRWMP Comment Page

> Below is the result of your feedback form. It was submitted by
> (olinwoods@sbcglobal.net) on Wednesday, October 25, 2006 at 13:29:35
> -----
>
>
> name: Olin Woods
>
> organization: County Resident
>
> comments: I am a member of the Willowbank County Service Area (CSA)
> Committee writing to you as an individual resident of the Willowbank
> neighborhood, located South of Davis in the unincorporated area of Yolo
> County. As some the IRWMP Study Team may be aware, the Willowbank CSA is
> a customer of the City of Davis for its water supply. As such many of us
> in the Willowbank community commend the IRWMP Study Team and support the
> effort to obtain a surface water supply. The purpose of this comment is
> to encourage the study team to push hard for the Sacramento River as a
> source for Davis, UCD, and Woodland AND to look beyond the Sacramento, as
> appropriate. Many years ago, Davis and UCD were provided an opportunity
> to access Lake Berryessa as a water source. A decision was made not to
> pursue Berryessa water at that time primarily because, as I understand it,
> Davis believed that it had sufficient ground sources. I would encourage
> the study team to look at Beryessa again as a water source for Davis, UCD,
> and Woodland. There may be good reasons for dismissing Berryessa as an
> alternative, but to the casual oberserver, it would seem to be an excellent
> supplement to the Sacramento River for surface water supply. I believe
> that the report could be criticized as incomplete, if it did not at least
> evaluate Berryessa as an option. Again, thanks to the study team for all
> its efforts to date and for considering my comments. opporutnity to
> comment.
>
> -----
>
> HTTP_USER_AGENT: Mozilla/5.0 (Windows; U; Windows NT 5.0; en-US; rv:1.7.8)
> Gecko/20050511 Firefox/1.0.4



11-1

From: WRA [mailto:info@yolowra.org]
Sent: Monday, October 30, 2006 9:18 AM
To: Stephen McCord
Subject: Re: IRWMP comments

Thank you for your comments Stephen! I appreciate that you took the time to provide comments via email. I know the on-line comment box is small. I'll see about correcting that.

Donna Gentile, Administrative Coordinator
Water Resources Association of Yolo County
P.O. Box 8624, Woodland, CA 95776
Ph: (530) 666-2733; Fax: (530) 666-4257
Website: www.yolowra.org

----- Original Message -----

From: Stephen McCord
To: info@yolowra.org
Sent: Saturday, October 28, 2006 8:25 AM
Subject: IRWMP comments

The comment box in the on-line comment form was too small to use, so here are my comments on the September 2006 draft, following up on the workshop I attended on 10/25/06.

4/13/2007

.11-2

The City of Woodland recently had my firm, Larry Walker Associates, develop a water quality management plan for the Yolo Bypass. A copy of the plan is available at ftp://209.76.48.227/Yolo_Bypass/. Although many projects and ideas in that plan are included in the IRWMP, referencing it will provide additional information and guidance. This plan is particularly relevant to the Yolo Bypass Integrated Project.

1

In the Description section under FA2, p.6-9, there is reference to the "IRWMP Technical Appendix chapter on water quality". I can't find that. The reference should be made clearer.

Section 6.4 is, in my worldview, missing an important source of "funds": volunteers! Citizens in the county have lots of energy and enthusiasm that can support projects as well as provide technical expertise and "sweat equity". I think it deserves mention at a minimum. You could even list the many non-profits who could be project partners as well as additional sources of funds (they can get grants separate from the larger entities given responsibilities in the plan).

2

Section 6.4.8 could consider another outside funding source: pollutant trading "buyers". Many entities in the lower Sacramento Valley recognize the disproportionately high mercury load coming from Cache Creek and would consider funding a project there if it were relatively inexpensive compared to other means of reducing mercury loads.

3

Section 6.5 is a bit generic, which perhaps is appropriate at this stage. But two regulations to consider mentioning are TMDLs and the Basin Plan. Both fall under the Clean Water Act and/or Porter-Cologne, but they are being applied to the County directly. The Cache Creek and Sulphur Creek mercury TMDLs are essentially done now and written into the Basin Plan. They require compliance of many projects in the County that could impact water quality.

4

I appreciate the effort that went into Appendix B to develop prioritization criteria. I am willing to help to finalize that or to produce something separate (one project to propose for funding next year, top 5 overall projects today, etc.) then feel free to contact me.

5

Finally, I'd like to express my appreciation for all the work that the WRA and technical committee did to get this plan on paper. It's very comprehensive and well organized.

Regards,
Stephen

Stephen A. McCord, Ph.D., P.E.
Larry Walker Associates, Inc.
707 Fourth Street, Suite 200
Davis, CA 95616
www.lwa.com
530-753-6400



November 6, 2006

David Scheuring, Chair
Water Resources Association of Yolo County
P.O. Box 8624
Woodland, CA 95776
Email: info@yolowra.com

Re: Comments on Draft IRWMP

Dear Mr Scheuring:

Thank you for the opportunity to comment on the Draft Yolo County Intergrated Regional Water Resources Management Plan.

These are preliminary comments and should not be construed to include all of Tuleyome's concerns with respect to the plan as a whole or with respect to individual actions in the plan.

Prioritization:

One of Tuleyome's most significant concerns about the Integrated Regional Water Management Plan (IRWMP) is with the lack of "prioritization," which we mean to refer to the process of assigning a relative importance or "rank" to projects that will be undertaken under the IRWMP. While we have reached this conclusion in part on the basis of how the IRWMP addresses environmental resources and the plan's effects on them, we have also concluded that the plan's lack of prioritization for publicly supported project elements will adversely affect the plan's implementation. It has become apparent that the IRMWP does not address prioritization in a manner that defines the most important projects in terms of generating community support when grant applications are made to state and federal entities.

We know that priority-ranking projects are a complicated and difficult task. In addition to maintaining water-supply and flood-control accomplishments, the Plan must also include an overall strategy that maintains ecological processes in the County. This objective is an underlying goal that is being defined through the HCP/NCCP process that is currently underway. In a similar manner the IRWMP discussion must directly interface with the County General Plan update that is shaping land use and growth management strategies for the county's future. In short, the IRWMP simply must be framed so that it's compatible with other planning efforts in the county, and priority projects need to carry out the goals in these other planning efforts.

With these objectives in mind a prioritization process might resemble the approach used in the SACOG Blue Print process, which identified transportation infrastructure priorities as they related to growth management strategies. The SACOG planning approach is now (belatedly) recognizing that transportation planning must also address the need to protect important ecosystem elements and flood zones.

Prioritization need not rank all of the project elements in the plan (that is, to rank all 150 projects in consecutive order, but we believe that it might work to rank projects in tiers. In addition, we believe that it would be appropriate to rank projects within each category, such as, for example, a tiered ranking of all of the recreational projects. Such a prospective ranking of projects would be helpful in framing the discussions about various projects or elements that need to be held in the county in order to be successful in the future competition for pots of money needed to implement the plan.

Tuleyome has a dual mission to protect both our wild heritage and our agricultural heritage. As a result we look for projects that will restore and protect the natural environment in the county, while offering the public appropriate recreation consistent with this goal. But, we are also interested in projects that can improve water supply and quality for farmers. In addition,, public safety may be an overriding consideration for projects, such as providing a 200-year flood management project for Woodland and other communities.

1
Con't

Prioritization Example:

An example of an integrated high priority project might be setback levees that provide 200-year flood protection for Woodland, while also leading to the restoration and enhancement of aquatic and riparian habitat areas, and the reintroduction of anadromous fish to Cache Creek, while adding needed public recreation. Such a project might also be tied to the YCFCWCD's proposed winter-flow storage reservoir north of Rd 19.

This kind of "integrated" project would not only meet the needs of the City of Woodland for flood control, but would also meet needs of environmental and recreation advocates throughout the county, as well as farmers within the YCFCWCD service area. While some might not agree with every component of such a project, an overall community consensus might emerge. This could be tested through the promotion of a resource bond or sales tax increment enacted within the county, which would provide seed money for matching funds required for grant applications.

Why is this worth the effort? An integrated project such as this, with strong community support and matching money, is likely to rank high in grant applications. We believe that it will take this strong unified community consensus and support to compete for funding needed to implement the IRWMP with other communities that have done the ranking and consensus-building.

Regional Groupings:

In order to get a handle on the many projects included in the plan, the technical committee decided to "regionalize" the county, such as by recognizing that Cache Creek projects should be considered separately from Putah Creek projects. This makes lots of sense, but it is also vitally important that projects that effectively include more than one region, or that cross over regions, also be addressed in an integrated manner. As an example, it will be very important that Yolo Bypass fishery projects be closely coordinated with Cache Creek fishery projects to ensure that they are complementary and that one project area does not create barriers to projects in the other.

2

Specific Comments:

While we recognize that this plan does not differentiate projects or rank them for community acceptability we have made preliminary comments based upon the general description and our general knowledge of these projects.

Page 3-1: 3.2.2.1 Disadvantaged Communities and Environmental Justice

- The Plan fails to adequately address environmental justice. Hispanic and other minority communities have special ties to water quality as it relates to subsistence fisheries and recreation. As an example, the Hispanic community is a significant user of Yolo County parks in the Cache Creek canyon. Yet, adequate outreach to this community has not been undertaken and when we checked we found that significant groups such as the Woodland Hispanic Chamber of Commerce were unaware of the IRWMP process. We are willing to assist where we can to ensure that environmental justice issues are addressed.

3

Page 4-5:

- Under 4.5.1.1 Salt Creek, Bird Creek, Oat Creek and other tributaries north of Cache Creek should be mentioned.

4

Page 5-8: Description, bottom paragraph: We don't want the channel put into a pipe.

5

Pages 5-9 to 5-12:

Several comments are made in these pages relate to efforts to address the Woodland flood issues. We have specific concerns, but first make the following general comments related to this issue.

- Why does this section completely ignore the Army Corps of Engineers conclusion that the preferred project for preventing flooding by Cache Creek of Woodland and the land north of the creek is "setback levees"? [US Army Corps of Engineers, March 2003. Lower Cache Creek, Yolo County, CA, City of Woodland and Vicinity. Draft Environmental Impact Statement / Environmental Impact Report for Potential Flood Damage Reduction Project.]
- Why does this section make its principal reliance (top of page 5-12) on two kinds of projects that the Corps has specifically rejected?
 1. "dry" dams, the best of which (Bear Valley), the Corps found to be maximally expensive and minimally effective. [US Army Corps of Engineers, June 1994. Reconnaissance Report, Westside Tributaries to Yolo Bypass, California] If dry dams are to be discussed the earlier Corps reports on the Guinda and Brooks dams should also be mentioned and included in the bibliography.
 2. temporary off-stream storage, which the Corps concluded would need to flood so much land so deep that it was impractical. [same 1994 reference]
- We are unaware that "there seems to be growing consensus that the Woodland/Cache Creek flood control solution will, by necessity, consist of multiple, integrated actions." We totally disagree with this statement and in fact it is our preliminary conclusion that efforts to utilize multiple integrated actions will in effect divert attention and funding to projects that do not resolve Woodland's flood issues and that the capital and operating and maintenance funds that might be expended will make it increasingly difficult to resolve this issue. **There is no growing consensus.** We do recognize, however, that some projects that may provide some incremental improvement such as re-operation of Indian Valley Reservoir or changing the decrees with respect to management of the water level on Clear Lake can make sense and be cost effective.

6

Page 5-10:

- Under Theme- Our goal should be 200 year flood protection and this should be explicitly stated.

7

- Under Relevance to Goals and Objectives- Fifth bullet point should be changed to read Providing recreational opportunities while minimizing impacts to other property owners.

7
Con't

Page 5-11:

- The Thurston Lake Pump Storage Project is referred to as (WS1) but this should be (WS 19)
- Under Description: We are unaware that “there seems to be growing consensus that the Woodland/Cache Creek flood control solution will, by necessity, consist of multiple, integrated actions.” We totally disagree with this statement and in fact it is our preliminary conclusion that efforts to utilize multiple integrated actions will in effect divert attention and funding to projects that do not resolve Woodland’s flood issues and that the capital and operating and maintenance fund that might be expended will make it increasingly difficult to resolve this issue. There is no growing consensus. This statement should be removed.

8

Page 5-12:

- We do not agree that consideration should be given to temporarily storing flood waters in the upper watersheds in new detention basins. However, the re-operation of existing reservoirs may have merit.
- 5.4.5 Cache Creek Water Management Integrated Project
Location: We disagree with limiting this project between Capay Dam and County Road 94 B. This arbitrarily limits the reaches of the creek for projects that should be considered over the entire watershed. Specifically, this inappropriately limits the extant of AR 8, AR 24, AR 46, and R3.

9

Page 5-16

- We are extremely concerned about mention of in-stream storage projects on either Oat Creek (WS3.2) or Bird Creek (WS3.3). We feel that these two smaller creeks in the Dunnigan Hills should be identified for restoration of riparian and aquatic habitat elements. This is also true of Buckeye Creek (FM4). The IRWMP is clearly not “integrated” with the planning process included in the NCCP/HCP, which is a major point that we have made previously.

10

Page 5-20:

- See comment under page 5-10 with respect to rewording the fifth bullet.

11

Page 5-21:

- At top of the page the sentence should be reworded to state: “Planning and implementing this action will be closely coordinated with ~~all local~~ stakeholders and ...”

12

Page 5-34 Table 5-1

- FA 6: We continue to request that this title be properly described to include “opportunity assessment” as it is a critical foundational activity.

13

Page 5-36 Table 5-2

- WS 7: We have serious concerns about any efforts to convert the open channel that parallels highway 16 across the Yolo-Bypass into a piped transmission facility. We asked to be informed with respect to any continued action or development of this project.

14

Page 5-37 Table 5-2

- WS 13: We appreciate that this project mentions that fish passage investigation should be conducted.
- WS 17: We would like additional information on the status of these projects. It is also important to insure that the Agricultural Mitigation Conservation Program will not preclude the establishment of these small surge reservoirs that are in essence a widening of a slough, in appropriate locations.
- WS 20: This description should include the list of potential projects.
- WS 25: The first statement should be modified to read, "The building of Sites Reservoir ~~may would~~ enhance the viability ..."

15

Page 5-46 Table 5-4

- FM 16 and FM 18: We have serious concerns about both of these projects that involve on-stream and off-stream dry dams and short duration detention projects. Both of these projects have large potential environmental impacts and regulatory and engineering constraints. Studies of these projects that do not include these environmental elements merely serve to divert needed resources from solutions to important flood management projects. There is no consensus on this approach to resolving Woodland flood management issues
- FM 19: The flood management goal for our region should be a minimum 200-year event. The wording should be for a "minimum 200-year event" in place of "at least 100-year flood protection."

16

Page 5-53 Table 5-5 Aquatic and Riparian

- AR 30: Action AR 7 and AR 30 are substantially similar. Perhaps these should be combined to refine a plan and county coordination with the entities conducting this work throughout the region.
- AR 36: The YCFCWCD is the best responsible agency to implement control of invasive species along their canal and natural waterway system in conjunction with AR 7 and AR 30. This effort can be coordinate with projects such as AR 36 to restore habitat and minimize the reinvasion of exotics.
- AR 46: Cache Creek once had significant salmon runs. As Joe Farnham reported, he remembers his dad fishing in Gordon Slough with a pitchfork in order to catch salmon to feed to their hogs. A Fish and Game warden reported steelhead in Clear Lake as late as the 1939.

17

Page 6-21: Conveyance Project

- As noted earlier we have concerns with respect to the Conveyance Project and request to be listed as stakeholders and notified as to any planning on the project and EIR processing. Is the Draft EIR complete, who is the lead agency, and where is the EIR available?

18

Page 6-24: Cache Creek Integrated Project

- Please erase "U.S. Bureau of Land Management designation of a Cache Creek as a natural area" and replace with "Cache Creek federal Wilderness designation."

19

Page 6-25

- Yolo County must be listed as partner in this project.

20

Page 6-26

- We have serious concerns with respect to the composition and representativeness of the Flood Management Technical Committee. It currently consists of 6 engineers and 1 farmer. In our judgment this composition seriously undermines the public process and trust in the IRWMP process. It is, perhaps, also a fatal flaw in efforts to develop a community consensus on flood management options for Woodland. Tuleyome has formally requested to be a member of this committee in the past, and there are numerous other interests in the county that should be part of these discussions.

21

Page 6-28: Item 2

- The title of Item 2 should read "Perform Aquatic and Riparian Opportunity Assessment."
- In addition, this study should not be limited to the area downstream from Capay Dam. **It must include the creek from Clear Lake Dam and Indian Valley Reservoir to below the settling basin.**

22

Page 6-31: Item 11.

- Language limiting this action to the area below Capay Dam must also be eliminated. Items 2 and 11 are directly related to water flows and ecosystem processes throughout the length of the creek, and the entire system must be studied in order to address the principles of watershed science that underlie integrated regional water management planning. As we have said on numerous occasions, these studies need to be started as soon as possible, as they must be completed prior to moving forward with water supply, water quality, and flood control projects that may have adverse effects on the aquatic ecosystem elements and fisheries in the basin. We do appreciate that some funding has been set aside to begin this work.

23

Figure 6-6

- We will submit additional comments on this chart. But, it is clear that the cross references for Tasks 11 and 12 are inadequately marked. The potential to establish anadromous fisheries and evaluate potential for aquatic habitat enhancement must also precede the Huff Corner levee work in the creek, reconciliation of the Cache Creek settling basin, the purported Cache Creek tributary detention basin project, the Cache Creek off-stream detention basin project, the Woodland area flood management project, Water management program, and the Clear Lake operations evaluation project. The interrelationships of all of these project elements is the primary point that Tuleyome has been stating about this planning effort for several years: it is simply impossible to look only at water supply, or flood control, or any other technical phase of water resources planning, without looking equally at the ecological, environmental, recreational, and other aspects of water resource planning and management in the county.

24

Page 6-57

- Please add Tuleyome as stakeholder in the Yolo County sloughs, canals and creeks integrated projects.

25

Conclusion:

Thank you for the opportunity to submit these initial comments on the Draft IRWMP project. Putting this plan together is a difficult process and while we have issue and concerns we also appreciate the hard work and time that the WRA and the WRA technical committee has put in to this effort.

Sincerely,

Bob Schneider
President
530 304 6215



13

13-1

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November 7, 2006

To Whom It May Concern:

The Sacramento-Yolo Mosquito and Vector Control District's (SYMVCD) mission is to provide safe, effective and economical mosquito and vector control for Sacramento and Yolo Counties. We perform mosquito and vector control surveillance and control operations according to the principles of Integrated Pest Management. As it applies to the Integrated Regional Water Management Program (IRWMP), we are concerned with water related projects that create or have the potential to create mosquito breeding sources. This includes, but is not limited to, sources of standing water for at least 72 hours between March and November, permanent standing water with significant emergent vegetation, or water sources that may be difficult to access and treat.

Pursuant to Sections 2060-2067 of the California Health and Safety Code, the SYMVCD has the authority to abate public nuisances on (1) any property excluding water, that has been artificially altered from its natural condition so that it now supports the development, attraction, or harborage of mosquitoes; (b) any water that is a breeding place for mosquitoes; and (c) any activity that supports the development, attraction, or harborage of mosquitoes or that facilitates the introduction or spread of mosquitoes. While it is our goal to work cooperatively with the appropriate parties to resolve any mosquito source issues, the SYMVCD is authorized to impose civil penalties of up to \$1000.00 per day in cases where the public nuisance continues after a specified time.

By submitting the attached recommendations, it is our hope that mosquito source reduction practices will be incorporated in water projects at the planning phase, thereby preventing the need for increased treatment operations with the possibility of abatement proceedings.

Sincerely,

Joel Buettner, Water Management Specialist
Sacramento-Yolo Mosquito and Vector Control District



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Recommendations for the Draft IRWMP submitted by the SYMVCD

Page	Recommendation	
vi	Add to list: SYMVCD Sacramento-Yolo Mosquito and Vector Control District	2
6-56	Correction: Change "YSMVCD" to "Sacramento-Yolo Mosquito and Vector Control District (SYMVCD)"	3
6-58, 59	Add language to the effect that: "Stormwater and wastewater systems are significant breeding sources of mosquitoes that are important vectors of human disease. Addressing this issue during the planning of new storm and wastewater systems will help to prevent future mosquito control problems and, potentially, the need to enforce mosquito abatement statutes. To assist the SYMVCD's efforts in identifying, monitoring, and treating these sources, measures should be taken in the design of new systems to minimize standing water and facilitate mosquito surveillance and treatment operations. The SYMCVD will provide any technical assistance during the planning and implementation stages of this project."	4
6-64	Mosquito Abatement and Vector Control District Law in particular Sections 2060-2067 of the California Health and Safety Code pertaining to the Sacramento-Yolo Mosquito and Vector Control District's responsibilities to manage and treat mosquito breeding areas. This is potentially relevant to a wide range of proposed projects including but not limited to: creation of wetlands, stormwater and wastewater projects, agricultural water use, construction of flood control structures, and habitat restoration projects.	5

www.fightthebite.net





Audubon CALIFORNIA

14

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November 13, 2006

Mr. David Scheuring
Chair, Water Resources Association
P.O. Box 8624
Woodland, CA 95776-8624

Dear Dave,

Audubon's Landowner Stewardship Program lauds the Water Resources Association's efforts to date to develop a draft plan encompassing a diverse set of interests, stakeholders and issues in a spirit of collaboration and teamwork. The Yolo County Integrated Regional Water Management Plan has the potential to incorporate aquatic and riparian ecosystem enhancement, water quality, and water-related recreation projects into water supply and flood control projects, unlike any previous water plan in Yolo County's history. Furthermore, it provides access to state funds and allows for a process to identify and address water issues by providing a list of projects to help address those issues.

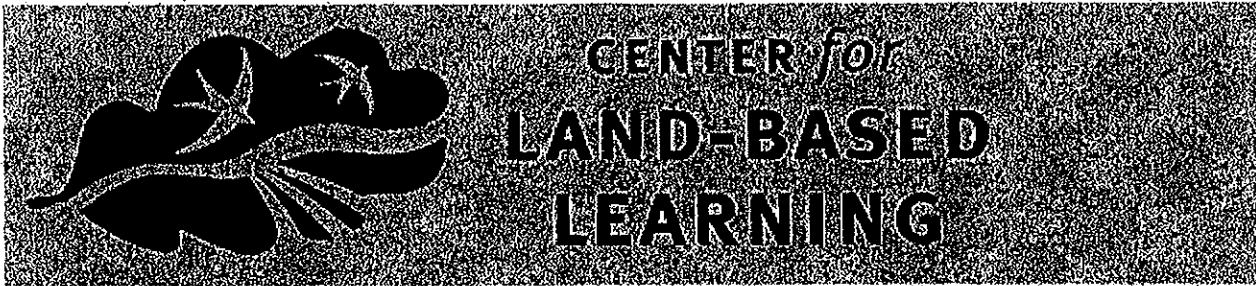
Despite this success, we have three recommendations regarding the plan that should be addressed:

1. **Prioritize projects equitably**—the Water Resources Association needs to develop a system for setting regional priorities and integrating programs, policies, and projects into actions both for planning and future funding purposes. A review process could be developed that revisits priorities on a one, three or five year basis to adjust to changing conditions, funding and new projects;
2. **Integrate habitat enhancement with water management**—the prioritization process should give an appropriate balance to water, agriculture and the environment without compromising any of the three. It may be necessary to weight each of these factors to further assist prioritization efforts. Furthermore, Department of Water Resources requires integration as part of the plan; and
3. **Measure success**—we understand that the state requires monitoring and measuring the effects or outcomes of the recommended plan actions. The lack of a monitoring protocol will put any of the WRA's project proposals at a competitive disadvantage. Furthermore, applied research needs to act as a compass that points towards future actions yet also questions assumptions about the best practices or solutions for integrated water projects.

Audubon California Landowner Stewardship Program hopes that these suggestions are incorporated into the next draft of the plan. Please do not hesitate to contact me if you have any questions.

Sincerely,

Vance Russell
Program Director



5265 Putah Creek Road, Winters, CA 95695
www.landbasedlearning.org

(530) 795-1520 – office
(530) 795-4687 – fax

Mr. David Scheuring
Chair, Water Resources Association
PO Box 8624
Woodland, CA 95776

November 13, 2006

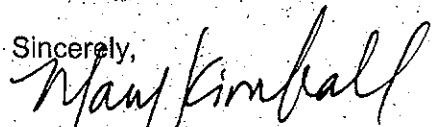
Dear Dave,

The Center for Land-Based Learning (CLBL) has been actively participating in every public meeting of the WRA, including providing numerous potential projects that would provide benefits in ecosystem enhancement, water quality, and even flood control (in some cases). We realize that this effort, on behalf of the WRA, to draft a plan encompassing such a diverse range of issues, stakeholders and interests is very difficult and complex. It is a very exciting and groundbreaking opportunity to incorporate and integrate so many critical efforts in Yolo County to date. Even more exciting, it gives access to state funds in a new way – there are many organizations and agencies already doing great work in Yolo County, but we all are competing for limited funding, and very little of our work is a part of a greater strategy. This plan has the opportunity to provide ALL of us access to new and different funding sources that will really allow the County to GET THINGS DONE on the ground.

Nevertheless, we have some concerns about the draft plan, as it stands today;

1. **Strategies for implementing the projects and programs within the plan** — CLBL feels that the plan needs to develop a system by which organizations such as ours will have the opportunity to implement projects that we have the ability and resources to implement. At the last public meeting, when I asked the question: "how will we work together with the lead organization for Creeks, Streams, and Sloughs – which is the YCF&WCD – to implement integrated projects" – the answer that I received was not very clear. The answer was "we really do not know yet". The concern of CLBL, as well as other agencies and organizations, is that **without a structured process by which decisions are made and priorities are set, certain organizations would seem to have the advantage over others with respect to implementation of their own priorities.**
2. **A process for defining prioritization of integrated projects** → this concern builds upon the last paragraph. Without defined priorities, or at least a regular, annual (or otherwise) process to define priorities, it feels as if the plan is without an anchor. As stated earlier, we certainly recognize that this is a difficult and complex process, and that there are many interests at stake. It is precisely for that reason that we believe that **this plan MUST include some kind of prioritization process**, if the decision is that final priorities can not be set at this time.

The Center for Land-Based Learning hopes that these suggestions are incorporated into the next draft of the plan. Please do not hesitate to contact me if you have any questions.

Sincerely,

Mary Kimball

16

16-1



County of Yolo

BOARD OF SUPERVISORS

625 Court Street, Room 204
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First District – Michael H. McGowan
Second District – Helen M. Thomson
Third District – Frank Sieferman, Jr.
Fourth District – Mariko Yamada
Fifth District – Duane Chamberlain

County Administrator – Sharon Jensen
Clerk of the Board - Ana Morales

November 14, 2006

David Scheuring
Chair, Water Resources Association of Yolo County
P.O. Box 8624
Woodland, CA 95776

RE: Comments on Draft Integrated Regional Water Management Plan

Dear Chair Scheuring:

The Yolo County Board of Supervisors (Board) appreciates the efforts of the Water Resources Association of Yolo County (WRA) to develop the draft Yolo County Integrated Regional Water Management Plan (IRWMP) and include such a diverse set of issues and stakeholders in the planning process. Yolo County has concerns with the current draft of the IRWMP, however, and requests that the WRA address these concerns prior to our consideration of the IRWMP for adoption.

The Board recognizes that the IRWMP's primary goal is to improve water management in Yolo County. The WRA could strengthen the IRWMP and ensure WRA eligibility for Proposition 50 funding, however, by meeting the state's IRWMP requirements for project prioritization, project integration, and the development of an implementation structure. The Board believes that including these elements in the IRWMP is important because they will significantly improve the plan, increase the likelihood of successful implementation, and increase the potential for obtaining funding. We suggest the following changes to the plan to achieve this goal:

Prioritize actions. The Board applauds the WRA Technical Committee's recent decision to establish short-term and long-term priorities in the IRWMP. We encourage you to take the time necessary to develop these priorities in a thoughtful and careful manner and include all interested stakeholders in the process. As you know, the state's IRWMP standards include a requirement to prioritize projects, both in the short-term (3-5 years) and the long-term (beyond 5 years). The WRA can revise the priorities in the future as appropriate. The IRWMP currently organizes actions by watershed or geographic area and places the actions in a 3-5 year implementation timeframe, but does not establish short-term or long-term priorities.

Integrate actions. The WRA should develop a strategy for integrating actions so that they achieve multiple benefits. If, for example, the WRA establishes a specific flood control project as a priority, the WRA should also integrate habitat enhancement and water-related recreation actions into the project. The existing plan requires lead agencies of "integrated projects" in each geographic area to decide in the future whether to integrate actions, but offers no consistent guidance on how to achieve this goal. The WRA should make an initial attempt at integrating actions now, as well as develop a strategy that the lead agencies may use to revise integrated actions in the future.

1

2

Clarify implementation strategy. The WRA should create clear guidelines for implementing the IRWMP in Yolo County, specifically focused on the integrated projects developed for each geographic area. The WRA should specify the goals for the implementation process (i.e. revise priorities and integrate projects), the responsibilities of the lead agencies for the efforts in each of the geographic areas, the extent of public involvement, guidelines for a decision making process, and the type of coordination needed between the lead agencies and the WRA. In addition, the WRA should provide a structure for updating the plan as needed, including revising the list of actions associated with each geographic area. The existing plan does not adequately describe the implementation strategy.

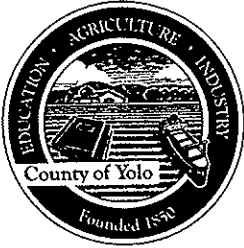
Address staff comments. The Board's representatives to the WRA and county staff sent detailed comments to the WRA related to the clarity, organization, and content of the IRWMP. We believe these changes will strengthen the document and make it easier for the public to understand. Please address these comments, as well as comments you receive from county staff during the public review period.

The Yolo County Integrated Regional Water Management Plan has the potential to improve water management in Yolo County by encouraging stakeholders to work together to identify solutions to complex water issues. It also has the potential to incorporate aquatic and riparian ecosystem enhancement, water quality, and water-related recreation projects into water supply and flood control projects, unlike any previous water plan in Yolo County's history. Furthermore, it provides access to state funds. The Board believes strongly that addressing the concerns expressed in this letter will help the WRA fully realize these benefits.

Thank you for your attention to our concerns.

Sincerely,

Frank Siefertman, Jr.
 Chair, Yolo County Board of Supervisors



JOHN BENCOMO
DIRECTOR

County of Yolo

PLANNING, RESOURCES AND PUBLIC WORKS DEPARTMENT

292 West Beamer Street Woodland, CA 95695-2598 (530) 666-8775 FAX (530) 666-8728
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TO: THE HONORABLE FRANK SIEFERMAN, JR., Chair,
and Members of the Board of Supervisors

FROM: JOHN BENCOMO, Director,
Petrea Marchand, Water Resources Coordinator
Planning, Resources and Public Works Department

DATE: November 14, 2006

SUBJECT: Comments on the public review draft of the Yolo County Integrated Regional
Water Management Plan (no general fund impact)

RECOMMENDED ACTION

AUTHORIZE the Chair to send a letter to David Scheuring, Chair of the Water Resources Association of Yolo County (WRA) with the Yolo County Board of Supervisor's (Board) comments on the Yolo County Integrated Regional Water Management Plan (**Attachment A**). The WRA will request that Yolo County adopt the Yolo County Integrated Regional Water Management Plan (IRWMP) in early 2007.

FISCAL IMPACT

Staff and consultant time involved in preparing the letter have been paid from the adopted Water Resources budget, a general fund account.

REASON FOR RECOMMENDED ACTION

The recommended action ensures that the Board's comments will be considered as the WRA revises the IRWMP in December 2006, prior to the Board's consideration of the IRWMP for adoption. The recommended comments focus on strengthening the IRWMP and ensuring WRA eligibility for Proposition 50 funding by meeting the state's IRWMP requirements for project prioritization, project integration, and the development of an implementation structure. A strong IRWMP is important to Yolo County because: 1) it has the potential to improve water management in Yolo County by encouraging stakeholders to work together to identify solutions to complex water issues; 2) it has the potential to incorporate aquatic and riparian ecosystem enhancement, water quality, and water-related recreation projects into water supply and flood control projects, unlike any previous water plan in Yolo County's history; and 3) it provides access to state funds.

BACKGROUND

California voters created the state's Integrated Regional Water Management program in 2002 with the passage of Proposition 50. The state designed the program to improve water

management in California by requiring local agencies to take a more active role in setting water management priorities and ensuring that water projects achieve multiple benefits.

The recommended comments aim to ensure that the Yolo County IRWMP meets the Integrated Regional Water Management program's requirements for prioritizing actions, integrating actions so they achieve multiple benefits, and including a clear implementation strategy. While the WRA recently decided to establish short-term and long-term priorities in the IRWMP, the IRWMP currently does not contain priorities. In addition, the IRWMP currently does not provide guidance on integrating actions to achieve multiple benefits or a clear implementation strategy. While staff recognizes that the IRWMP's primary goal is to improve water management in Yolo County, the WRA could strengthen the IRWMP and ensure WRA eligibility for Proposition 50 funding by meet the state's IRWMP requirements.

The Integrated Regional Water Management program provides grants of up to \$500,000 to regional agencies to help pay for planning and coordination associated with developing IRWMPs, as well as design and engineering associated with high-priority projects. The Integrated Regional Water Management Program also offers grants for implementation of projects up to \$25 million and may also offer future funding for planning grants to assist with the design and engineering of projects.

The WRA received a \$500,000 grant to develop the IRWMP in early 2006. The WRA released the public review draft of the IRWMP on October 6, 2006 and requests comments from interested parties by November 20, 2006. In early 2007, the WRA will ask the member agencies of the WRA to adopt the IRWMP. All appropriate agencies and organizations must adopt the IRWMP for Yolo County to be eligible to receive state funding for implementation of the IRWMP. The WRA's member agencies are: Dunnigan Water District, Yolo County, the Yolo County Flood Control and Water Conservation District, and the cities of Davis, Winters, West Sacramento, and Woodland.

OTHER AGENCY INVOLVEMENT

None.

ATTACHMENTS

Attachment A. Letter to David Scheuring, Chair of the WRA.

17

17-1

Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Friday, November 17, 2006 10:26 AM
To: Stem, Annabeth; Anderson, Dave; Baxter, Doug; Beggs, Rob; Fran Borcalli; Brewster, Bill; Chainey, Steve (2); Cherovsky, Regina; Cocke, Mark; Davids, Grant; DeBra, Jacques; England, Sid; Eusuff, Tasmin; Hendrix, Donita; Eidam, Lucy; Chandler, Jeff; Hanson, Rebekah; Marchand, Petrea; McIver, Julia; Mount, Dan; O'Halloran, Tim; Phillips, David; Platenkamp, Gerrit; Scheuring, David; Scianna, Carol; Scruggs, Mary; Stevenson, Max; Walter, Hanspeter; Wegener, Gary; WRA
Cc: Quinn, Caroline
Subject: Fw: West Sacramento IRWMP Comments

FYI - Please read comments from West Sacramento below, requested to be forwarded to the Technical Committee.

Donna Gentile, Administrative Coordinator
 Water Resources Association of Yolo County
 P.O. Box 8624, Woodland, CA 95776
 Ph: (530) 666-2733; Fax: (530) 666-4257
 Website: www.yolowra.org

From: Quinn, Caroline
Sent: Tuesday, November 14, 2006 6:42 PM
To: DeBra, Jacques; dscheuring@gvni.com
Cc: Stem, Annabeth; 'Petrea Marchand'; Mount, Dan
Subject: RE: Emails for WRA

Hello David and Jacques,

I am sorry that the City of West Sacramento has not been able to participate as fully as we would have liked in the IRWMP process to this point. We have done our best to provide input requested for the Plan throughout the process, but we simply have not had the resources to dedicate to the project as we would have liked. However, we are very interested in becoming more involved in the regional water resources planning process, including final development of the IRWMP.

We sincerely appreciate all the work that has gone into development of the draft IRWMP. We also want to make sure that the final document is as strong and complete as it can be. We believe a key element of the final document is a thorough, defensible process for the systematic prioritization and integration of the IRWMP actions, including a method for stakeholder input on the priorities. Completing the Plan without prioritization of the projects, or with prioritization accomplished by ambiguous means, weakens the Plan and may make it less competitive for State funding.

1

We would also like to see the organization of the IRWMP document evaluated and more emphasis placed on greater integration of recommended actions in different areas of resource benefit. It would also be helpful to compare it with IRWMPs that have been well-received by DWR and have produced competitive projects for grant funding. Perhaps a new consultant could review and fine-tune the Plan with fresh eyes, particularly as necessary to make the Plan more competitive as a vehicle for obtaining Prop 50—or future Prop 1E or 84—funding.

2

Efforts to date have produced good work; we feel that going this extra step will make those efforts that much more productive in maximizing the return on the investment to date of time and resources. We understand the WRA's desire to complete the IRWMP soon, but it appears that taking a bit more time now will not

3

17-2

compromise project implementation; it may in fact assist in developing more competitive projects. This last push to polish and fine-tune the Plan could be done without too much delay, and the time investment now could result in a stronger implementation in the future. We all stand to benefit a great deal from spending a little extra time now, before the final Plan is submitted to the WRA member agencies for adoption, to prioritize and integrate the actions and fine-tune the Plan document to make it as good as it can be.

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Thanks again for your time and effort on this process and thank you also for your consideration of these suggestions.

Best Regards,
Caroline Quinn, Assistant Director
Public Works & Community Development
CITY OF WEST SACRAMENTO
1110 West Capitol Avenue
West Sacramento, CA 95691
916.617.4645
carolineq@cityofwestsacramento.org
Note: New e-mail address



California Regional Water Quality Control Board Central Valley Region



Arnold
Schwarzenegger
Governor

Sacramento Main Office
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>

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18-1

21 November 2006

Ms. Donna Gentile, Administrative Coordinator
Water Resources Association of Yolo County
P.O. Box 8642
Woodland, CA 95776

COMMENTS ON THE DRAFT INTEGRATED REGIONAL WATER MANAGEMENT PLAN FOR YOLO COUNTY

The Central Valley Regional Water Quality Control Board (Regional Water Board) staff would like to thank the Water Resources Association of Yolo County for this opportunity to provide input into the *Draft Integrated Regional Water Management Plan for Yolo County (IRWMP)* as it is under development. This kind of planning provides a framework for designing and prioritizing sound projects that meet the needs of all interested parties.

We appreciate your recognition of the need to address total mercury discharges in the watershed. It will be equally important to make sure that projects that are implemented don't generate excessive methylmercury, since it is methylmercury concentrations in the water that are the most important factor in determining fish tissue concentrations. While the Regional Water Board recognizes that total mercury is being discharged from legacy mining operations, the mercury already present in the environment generates methylmercury on a localized scale. The amount of methylmercury that is generated depends on the types or projects and activities that are being implemented in the watershed. We hope that this consideration is factored into the IRWMP. Where applicable, the monitoring and assessment requirements included in the recently adopted Regional Water Board Cache Creek Mercury Control Program should be rolled into your plan.

We are also pleased that you have evaluated the need for new community sewage systems or upgrades to existing ones. Discharges from domestic wastewater treatment facilities are regulated under a National Pollutant Discharge Elimination System (NPDES) permit or Waste Discharge Requirements (WDRs) depending on whether the discharge is to surface waters or to land, respectively. The State Water Resources Control Board (State Water Board) administers funding programs that provide grants and/or loans for wastewater treatment plant construction. More information is available on the State Water Board's website at:

<http://www.waterboards.ca.gov/funding/index.html>

When initiating a project, it is important to determine whether a specific project falls under the jurisdiction of any regulatory programs. The following Regional Water Board programs may apply to discharges from the planned future actions:

California Environmental Protection Agency

18-2

- The discharge of dredge or fill material to waters of the United States, or waters of the State, is subject to Section 401 of the Clean Water Act and the California Water Code (CWC). Section 401 requires that you obtain a Water Quality Certification from the State before the Corps of Engineers may issue a Section 404 permit. Any person discharging dredge or fill materials to waters of the State must file a report of waste discharge pursuant to Sections 13376 and 13260 of the CWC. You may meet both the requirement to submit a report of waste discharge and apply for a water quality certification by using the same application form. If waters on the project site are not under federal jurisdiction, the Discharger will still need to submit a Report of Waste Discharge (Form 200) to the Regional Water Board. However, the Regional Water Board recommends that the Discharger submit a 401 Water Quality Certification application rather than a Report of Waste Discharge because a 401 application can be processed more quickly than proceeding with Regional Water Board adopted waste discharge requirements.
- Dischargers of storm water to surface waters associated with construction activity, including clearing, grading, and excavation activities of one-acre or more, must obtain coverage under the State Water Resources Control Board, Order No. 99-08-DWQ, National Pollutant Discharge Elimination System, General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity (General Permit). Dischargers must also implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.
- To obtain authorization for proposed storm water discharges to surface waters, the Discharger must submit a Notice of Intent (NOI) with a vicinity map and the appropriate fee to the State Water Resources Control Board prior to commencement of construction activities. Coverage under the General Permit shall not occur until the applicant develops a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify Best Management Practices that utilize the BAT/BCT performance standard to control pollutant discharges. These controls must reduce pollutants and implement any more stringent controls necessary to meet water quality standards contained in the Regional Water Board's Basin Plan.
- Wetland operations within the Central Valley Region may contribute, or have the potential to contribute, "waste" (as defined in the California Water Code) to surface waters. In June 2006, the Water Board adopted two Conditional Waivers for discharges of waste from irrigated agricultural lands including managed wetlands. The adoption of the Conditional Waivers allows landowners and/or operators of irrigated lands, including managed wetlands, the option of obtaining the regulatory coverage required by the California Water Code (Water Code) by:
 - Joining a Water Board-approved Coalition Group that forms on behalf of individual growers; or
 - Filing under an Individual Discharger Conditional Waiver through the Water Board office.

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Con't

Coalition Groups can generally not accept new participants after 31 December 2006. If a landowner or operator does not obtain regulatory coverage under a Conditional Waiver, they must file a Report of Waste Discharge and filing fee with the Water Board office to obtain an individual permit (also referred to as Waste Discharge Requirements).

- Many of the future action projects will require compliance with the California Environmental Quality Act (CEQA). The CEQA document needs to include a description of all solid and/or liquid waste that might be generated by the proposed project and how it will be handled, treated, and disposed of. The CEQA environmental document also needs to consider how storm water drainage may be affected by the proposed project. Pursuant to California Water Code, Section 13260, all persons proposing to discharge waste that may affect the quality of waters of the state must submit to the Regional Board a Report of Waste Discharge, following which the Regional Board will either prescribe waste discharge requirements (WDRs) or issue a waiver. If WDRs are prescribed, they will incorporate measures to mitigate potentially significant impacts to water quality and potential public nuisances that are due to the treatment or discharge of waste.

Thank you again for the opportunity to provide comments on the draft IRWMP for Yolo County. If you have any questions regarding these comments, please contact Holly Grover at (916) 464-4747 or hgrover@waterboards.ca.gov.

Jerrold A. Bruns
Environmental Program Manager
Sacramento River Watershed Section

cc: Mr. David Carlson
Mr. Bill Croyle
Mr. William Marshall
Ms. Wendy Wyels

Yolo County
Parks, Recreation, and Wildlife Advisory Committee
Individual member comments regarding the Integrated Regional Water Management Plan

General individual member comments:

- 1. Use demographic data more recent than the 2000 data used – especially for areas that have experienced significant changes in population, including West Sacramento.
 - 1.1.1. This would be useful in determining the impact of a particular project, such as the levy work proposed for the West Sacramento/Clarksburg area.
- 2. Specifically identify lead agencies in the IRWMP to carry projects forward.
- 3. Avoid the confusion of showing the Cache Creek Flood Management Integrated Project and the Cache Creek Water Management Integrated Project as separate projects in Section 5 and a combined project in Section 6.
 - 3.1.1. Combine them in Section 5.
 - 3.1.2. Avoid a footnoted explanation by detailing the rationale for the combination in Section 5.
- 4. Include some evaluation of general feasibility of flood management alternatives in the IRWMP.
- 5. Identify opportunities for recreational enhancements as part of the Sloughs, Canals, and Creeks Integrated Project. Further develop the description and integration of the actions.
- 6. Combine all types of use of the gravel pits and related Lower Cache Creek Area features into a single master plan.
 - 6.1.1. Outline this single master plan in the IRWMP.
- 7. Better establish the detailed and/or quantifiable benefits obtained by integrating individual actions into “integrated projects.”
 - 7.1.1. Discussion on this is vague, especially in Section 3.7.
 - 7.1.2. Better establish the rationale for integrating projects on the basis of sub region.

Advice on setting priorities:

- 1. Prioritize based on merit, not only on “the extent that prerequisite tasks are required before an action can be implemented.”
- 2. Prioritization would be easier if we were able to base it on some fiscal information, specifically projected costs, fiscal history, and projected revenue for each component.
- 3. Top priorities should include:
 - 3.1. Foundational Actions that address wildlife and recreation. Ref—FA6 Aquatic Habitat and Fish Monitoring Program and FA14 Development of HCP/NCCP.
 - 3.2. Removal of invasive species from Cache and Putah Creeks (AR7) – this has and will continue to be the subject of efforts and revenue spent.

- 3.3. Aquatic and Riparian Ecosystem Enhancement areas that benefit other action categories, including Recreation. I.E. AR4; AR5; AR7; AR11; AR16; AR17; AR23(R?); AR30; AR36; AR37; AR38; AR46(R?).
- 3.4. All those Recreation actions that are part of the Parks and Open Space Master Plan and/or have been recommended by the PRWAC. R6; R7; R8; R10; R11; R15; R18; R20; R22; R30, perhaps others.
- 3.5. Actions benefiting West Sacramento which may not have been included in the Parks and Open Space Master Plan. R12; R13;R17;R21.

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Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Tuesday, November 21, 2006 3:29 PM
To: Fran Borcalli
Subject: Fw: Comments on Water Plan (V. Murphy)

20-1

IRWMP Comments from Vicki Murphy.

Donna Gentile, Administrative Coordinator
 Water Resources Association of Yolo County
 P.O. Box 8624, Woodland, CA 95776
 Ph: (530) 666-2733; Fax: (530) 666-4257
 Website: www.yolowra.org

----- Original Message -----

From: Vicki Murphy
To: info@yolowra.org
Cc: Petrea Marchand
Sent: Tuesday, November 21, 2006 3:00 PM
Subject: Comments on Water Plan

First of all, thank you for receiving my comments on the very last day of the comment period.

My comments are few, but I am hopeful that you will consider them important....

1. **PROBLEM:** The Cache Creek Watershed Stakeholders Group has really not accomplished much in the nine or ten years of meetings. The coordinators, for the most part, have been very helpful in educating landowners about erosion control. However, almost all of the projects that have been applied inside the banks of Cache Creek itself have all been washed away because sandbars and tamarisk have been left in the waterways, and the CC flood flow capacity continues to diminish.

SOLUTION: Concentrate heavily on removing the vegetation and sandbars during the dry summer months throughout the Cache Creek reaches from Rumsey to the Bypass in an effort to stop streamside erosion and to increase the flood flow capacity. Some progress has occurred the past few years, but it is still ineffective. Will Cache Creek get its share of funding to do more projects, or will it continue to concentrate on more employment opportunities?

2. **PROBLEM:** In the past, by the time that a project got approved, it was the rainy season again and the dry months were wasted on wading through red tape. Since the beginning of the CC watershed group, the promise of a streamlined process has been dangled in front of folks, but has never materialized.

SOLUTION: The dire circumstances of Yolo County riparian and flood- risk areas have recently provided new funding, but there are also now reasons enough to require a special streamlined permit process to allow for necessary erosion control work inside the waterways. Also, capable and qualified riparian landowners might get paid to do some of the work for some of the other landowners who are not capable and/or qualified.

3. **PROBLEM:** The 'do-nothing-but-neglect-policy' of "flood management" has been the main watershed-wide consideration whenever areas were faced with dangerously eroding areas along every major waterway in California, as well as Cache Creek.
SOLUTION: Only apply the proven and effective policy of "flood control" as it promises to actually save lives and property. "Flood management" is dealing with the aftermath, and what kind, exactly, of a reasonable policy is that in the face of a flood threat?

20-2

4. PROBLEM: If there is widespread flooding, what happens to landowners if there are attempts by environmental groups to lay claim to newly flooded areas as 'natural flows', 'wetlands' and new riparian corridors?

SOLUTION: ????? Has this question been asked before? If so, what is the answer?

Most appreciatively,

Vicki Murphy
bvmurphy@afes.com

21-1

Memo

To: Fran Borcalli, Steve Chainey, Gerrit Plattenkamp, and Petrea Marchand

From: Maria Wong, Executive Director

Date: 11/30/2006

Re: Draft IRWMP dated 9/2006

All,

Petrea was kind enough to provide me with a copy of the administrative draft Integrated Regional Water Management Plan. I appreciate the opportunity to comment early in the process. Congratulations on the work so far; I look forward to receiving the public draft.

The comments below are offered in the sprit of improving the final product and reflect my years of preparing/editing and reading public agency reports.

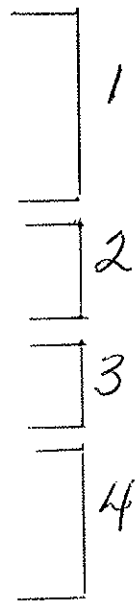
General comments

Document organization: The document is informative, but suffers from overlap and redundancy. Suggest careful editing by "new eyes" (a technical writer?) to remove extraneous information. Suggest moving detailed descriptions regarding "actions" to an appendix, replacing expanded text sections with a condensed version to retain continuity.

Tone: The document is heavily peppered with "the language of the IRWMP", which may or may not be practical depending who the target audience is. Suggest replacing jargon with more common terms where possible to improve ease of reading.

Prioritizing information: Suggest presenting the "take home message " early and concisely at the beginning of the document.

Grammar: The draft should be edited for grammatical and structural inconsistencies. In several instances paragraphs appear to be attached to the wrong section and consequently are confusing (ex: the last paragraph in the section on the HCP/NCCP appears to be the lead-in paragraph for the next activity).



Specific comments

21-2

6 Section 1

- 1.2 Suggest moving language that explains the statutory purpose of the IRWMP (DWR and SWRCB) into this section. One sentence would be sufficient.
- 1.3 This section should be expanded, seems over simplified when compared to Section 2.1. The stated goal in 1.3 is singular, yet the title implies additional goals that presumably are in concert with the five management categories. Is "ensuring an adequate water supply" the overarching goal?
- 1.4 Good discussion regarding the structure of the WRA.. However, it's not clear from this section how "the planning process...is structured for implementation" (pg. 1-3). Suggest adding a paragraph outlining the future organizational vision and process, or referencing Sec. 6. For example, how will governance issues be accomplished? What are the principles that will guide the process? This section implies a collaborative process: how will ground rules be developed and when? How are outsiders admitted to the process? Need to outline the who, what, when, where and how. If these are unknown as this time, then suggest outlining the process for developing them.
- 1.5.6 Table 1-5. Not clear what is meant by the "native" classification. Suggest adding a footnote defining this category more specifically.

5

7 Section 2

- 2.1.2 See Sec 1.2 comment above. Suggest carefully outlining the goals and objectives, as they will be the basis for actions going forward and will likely be the touchstone for resolving future conflicts.
- 2.1.3 Stated objectives appear to rely on a future process to be actionable. Suggest adding language recognizing this and outlining a roadmap for developing that process.

6

7 Section 3

- 3.7 Suggest reversing the order of the first 2 sentences. As the IRWMP process unfolds, how will new information be integrated?

7

9 Section 5

Suggest moving the detailed discussion to the appendix.

8

9 Section 6

- 6.2.3 Explain or reword the statement "Integration is not the product of this IRWMP" (pg. 6-4).
- 6.2.6 Suggest re-visiting the definition of "Foundational Projects" and then limit the sections where the definition is reiterated (it's used in several places but with a slight twist each time). It appears that most foundational projects are "countywide". Were they elevated to this status based on some subjective criteria? If so, then explain.
 - Suggest moving details of the foundational projects to the appendix.
 - Section 6 attempts to outline an organizational structure going forward. It is unclear how centralized the structure is intended to be. An organizational chart would be helpful.
 - It is unclear how entities not enrolled in the WRA who undertake "activities" under this plan would be subject to the decision making process of the governing organization (WRA).

9

SOLANO COUNTY WATER AGENCY

22



22-1

TRANSMITTAL FORM

DATE: 12/11/06

RECEIVED DEC 12 2006

TO: WRA
P.O. BOX 8624
WOODLAND, CA 95776

FROM: DAVID UKITA
Solano County Water Agency

For Your Information

Sign and Return

For Your Comment

Comments: LATE MINOR COMMENTS

trans.frm

P.O. Box 349 • 6040 Vaca Station Road, Building 84
Elmira, California 95625-0349
Phone (707) 455-1100 • Fax (707) 451-6099
www.scwa2.com



22-2

eroding sites should be designed. These bank protection projects should include biotechnical stabilization methods whenever feasible. These projects should include riparian and aquatic habitat improvements to the largest extent possible, without compromising stability.

4. Plan, Design and Build an Appropriately-Sized Bridge at Mace Boulevard

Hydraulic and engineering studies should be conducted to design a new bridge over Putah Creek at Mace Boulevard. This bridge is currently undersized and catches debris during flood events, further reducing its capacity.

5. Design and Implement the Restoration of North Fork Putah Creek at the UC Davis Confined Animal Facility

A study to determine the appropriate location of the confined animal facility and to determine the appropriate habitat restoration concepts for the creek has been completed by UC Davis. Funding and appropriate approvals are needed to proceed with the project.

6. Implement the Putah Creek Diversion Dam Vegetation Removal Project

The reduction of channel capacity by vegetation in the channel below Putah Creek Diversion Dam has been well documented. The vegetation removal can be implemented without conducting prerequisite studies.

7. Design and Implement Floodplain and Riparian Habitat Restoration Projects

Floodplain and riparian habitat restoration projects should be designed. Existing LiDAR survey data and the results of hydraulic and geomorphic analyses should be used. Projects should be designed to include multiple benefits, whenever appropriate, including bank stability, and aquatic habitat, and on public land recreation components.

8. Design and Implement Winters Putah Creek Park

Removing the derelict percolation dam in Winters (funded by a River Parkways grant), Himalayan blackberry, and other invasive plants will create an opportunity to build a trail and floodplain downstream from the dam site. These components of a Winters Putah Creek Park should be designed to enhance aquatic and riparian habitat and recreational opportunities. The park has the potential to become an amenity for the City of Winters, which enhances the connection of the people of Winters to Putah Creek.

This project was found to be not feasible. The Diversion Dam is not impacted by the downstream conditions and the amount of veg removal to make a significant improvement in channel capacity was found to be infeasible.

channel capacity was found to be infeasible.

Putah Creek Council
City of Winters
City of Davis
UC Davis

- Stakeholders YCFCWCD
Yolo Basin Foundation
Riparian landowners
Tuleyome

Prerequisite Tasks

A matrix is presented in Figure 6-12, which illustrates the relationship between the respective component actions and the prerequisite studies or investigations that are deemed important to support the orderly development of the integrated action. The majority of the actions require detailed planning and investigative work in order to be advanced.

Brief descriptions of the prerequisite studies or investigations are presented below. A general schedule and time frame and budget for completing the respective studies are presented on Figure 6-13.

1. Conduct Hydraulic Studies

The Solano County Water Agency is currently developing a HEC-RAS hydraulic model that will be completed ~~late~~ in 2006. Hydraulic modeling using this model would be necessary as part of project feasibility assessment and design for a number of actions. A LiDAR survey of the main channel and major tributaries has been completed (2005) and one-foot contours are available for the entire channel. This data will need to be used for detailed project design.

2. Investigate City of Winters Storm Water Drainage Issues

Investigations need to be carried out to determine the storm water drainage system that is required to allow the build out of the City of Winters, envisioned in its General Plan. The U.S. Army Corps of Engineers conducted a study several years ago that should be reevaluated. The Corps study included a diversion of up to 1,000 cfs to Putah Creek during a 100-year storm event.

3. Design Putah and Implement Creek and Dry Creek Bank Stabilization Projects

After planning and feasibility studies have been carried out, including hydraulic and geomorphic analyses, bank stabilization projects for severely

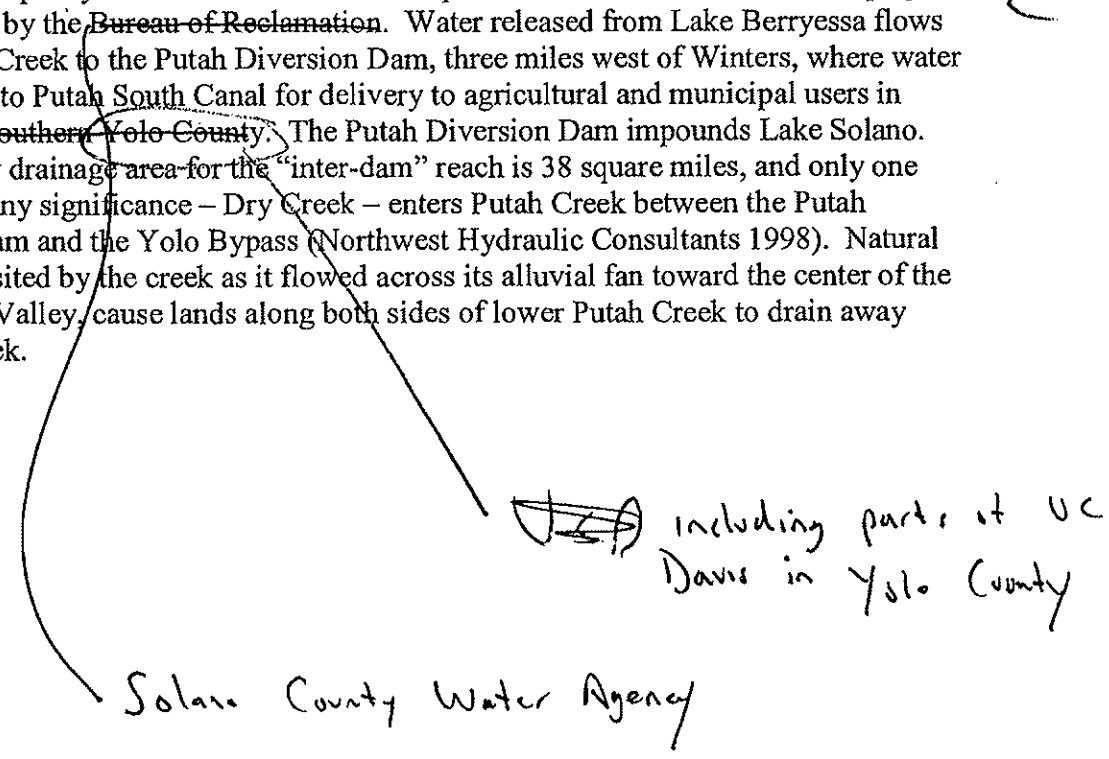
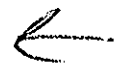
Settling Basin. For hydrologic purposes, however, the downstream limit of the Lower Cache Creek portion of the system will be considered at Interstate 5 or Yolo. The total Cache Creek drainage system, upstream of Interstate 5, encompasses 1,139 square miles, with the drainage area above Capay Diversion Dam comprising 1,044 square miles.

Willow Slough

The Willow Slough watershed drains most of the central part of Yolo County between Cache Creek and Putah Creek. Natural levees that formed through deposition of sediment along the valley floor reaches of Cache and Putah creeks cause local runoff to flow away from the main creek channels and to enter a complex network of sloughs and small drainage channels. These channels flow eastward and eventually consolidate into Willow Slough before discharging into the Yolo Bypass.

Putah Creek

The Putah Creek watershed encompasses approximately 710 square miles and extends from an elevation of 4,700 feet at Cobb Mountain in Lake County southeast for a distance of about 50 miles to the Yolo Bypass, at an elevation a few feet above sea level (Thomasson *et al.* 1960). Approximately 600 square miles of the watershed are upstream of Monticello Dam, located seven miles west of Winters. Monticello Dam was completed in 1957 by the U. S. Bureau of Reclamation and impounds Lake Berryessa, which has a capacity of 1.6 million acre-feet. Operations and maintenance of the project is performed by the Bureau of Reclamation. Water released from Lake Berryessa flows down Putah Creek to the Putah Diversion Dam, three miles west of Winters, where water is diverted into Putah South Canal for delivery to agricultural and municipal users in Solano and southern Yolo County. The Putah Diversion Dam impounds Lake Solano. The tributary drainage area for the "inter-dam" reach is 38 square miles, and only one tributary of any significance - Dry Creek - enters Putah Creek between the Putah Diversion Dam and the Yolo Bypass (Northwest Hydraulic Consultants 1998). Natural levees, deposited by the creek as it flowed across its alluvial fan toward the center of the Sacramento Valley, cause lands along both sides of lower Putah Creek to drain away from the creek.



including parts of UC Davis in Yolo County

Solano County Water Agency

Fran Borcalli

From: WRA [info@yolowra.org]
Sent: Friday, March 02, 2007 10:48 AM
To: Fran Borcalli
Subject: Fw: IRWMP goals

Fran,
This was an email that I received from Bob Schneider in January. I did not forward it to the Tech Committee pending Jacques approval to do so. However, I thought we should catalog it as public comments received for the record.

Donna Gentile, Administrative Coordinator
Water Resources Association of Yolo County
P.O. Box 8624, Woodland, CA 95776
Ph: (530) 666-2733; Fax: (530) 666-4257
Website: www.yolowra.org

----- Original Message -----

From: Bob Schneider
To: Gentile Donna
Sent: Thursday, January 04, 2007 2:05 PM
Subject: IRWMP goals

Hello Donna, (please forward to the tech comm..)

I made a suggestion today for an additional goal for the Yolo county IRWMP. It can certainly use some word smithing but was something along the lines of:

Maximize consideration with respect to climate change and increasing energy costs.

Attached below is a chapter 5.0 from the Working Draft of Tuleyome's Vision for the Yolo County general plan which gives some perspective on this suggestion.

Cheers,
bob

5.0 RESPONDING TO EARTH-SCALE PLANNING ISSUES IN YOLO COUNTY

MANAGING THE IMPACTS OF GLOBAL WARMING AND INCREASING ENERGY COSTS

Global warming and increased fuel costs will have significant impacts in Yolo County effecting agriculture, transportation, development patterns, habitat and other issues. Yolo County can and should be a leader in proactively anticipating the effects of these and other influences and putting in place a process to mange these effects locally. This General Plan process must include a strategy to respond to these new impacts and constraints; it can no longer be "business as usual." Decisions made in this general plan must incorporate responses to these overriding issues.

As an example, the possible reduction of the Sierra snowpack may increase reliance on agricultural

areas like Yolo County that have adequate surface storage. The irrigation system is also gravity fed reducing energy costs particularly in wet years.

Increased fuel costs may limit the distance to which crops can be economically shipped restricting the import or export of foods on a national and foreign market basis. Development of new fuel technologies, such as biomass and ethanol, may also influence both agriculture and transportation decisions.

Decisions that we make in this general plan with respect to how and where we grow will greatly impact on our future. Are we building communities for the future in a world with increasing energy costs and a global warming reality, or is it just more lower density suburbs covering large expanses of some of the best farming land in the world with deep soils, gravity fed irrigation and a Mediterranean climate.

Specific recommendations include:

1. Establishing General Plan goals and objectives to anticipate future trends that will affect Yolo County and to manage the effects of these trends. Decisions made in the Elements of this general plan should be evaluated with respect to global warming and increased energy costs.
2. Include an Energy Element as a component of the General Plan.
3. Create of a standing committee, under direction provided by the Board of Supervisors and staffed by the county executive, to gather information on future trends affecting the county and to issue annual reports and recommendations to the Board.
4. Establish policies that support and encourage local food "branding," farm-to-market and farm-to-school programs.
5. Establish policies that promote reduction of carbon dioxide and methane producing activities and increase carbon sequestration.
6. Require the county to examine its own energy use and carbon production and setting specific targets for reduced levels of each.
7. Promote cooperation between cities, including cities in other counties, in the development and operation of transit systems that increase opportunities for citizens to reduce their carbon production.
8. Continue communication and regional planning processes with area counties to coordinate policies and approaches that are regional in nature. For example, discuss and implement a system of regional wildlife corridors.

Bob Schneider
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 or
 Verve
 2402 Westerness Rd.
 Davis, CA 95616
 Phone: 530-304-6215
 Fax: 530-852-0381

Suggested Changes to Yolo County IRWMP Goals and Objectives
Petrea Marchand and Dave Shpak
January 4, 2007

EXISTING GOALS

The goals for the Yolo County IRWMP are to:

- Ensure an adequate water supply – both in quantity and quality – for the people of Yolo County, present and future, in a manner that is efficient, economical, and environmentally sound and
- Protect the people of Yolo County and property from hazards associated with storm runoff and flooding.

SUGGESTED ADDITIONS TO GOALS

- Enhance, improve and maintain aquatic and riparian ecosystems and aquatic bio-diversity throughout the county.
- Provide superior water-related recreational opportunities for Yolo County's growing population.
- Ensure high quality surface water and ground water resources throughout the County on a sustainable basis to serve the needs of all beneficial uses, including urban, agricultural, environmental and recreational uses.

SUGGESTED REVISIONS TO GOALS

Ensure an adequate water supply – both in quantity and quality – for the people of Yolo County, present and future, in a manner that is efficient, economical, and beneficial to the environment.

- Reduce the risk to the people of Yolo County and property from hazards associated with storm runoff and flooding.

EXISTING OBJECTIVES

The 14 IRWMP objectives are:

1. Coordinate and conjunctively manage surface water and groundwater supplies to avoid the potential adverse impacts from surface water supply development and use and from groundwater extraction (e.g., water quality degradation, environmental deterioration, and land subsidence).
2. Formulate a comprehensive water management, conservation, and reuse program for municipal, industrial, and agricultural waters users.
3. Provide a mechanism or process that facilitates the rational treatment of proposals for importing water, for the intra-county transfer of water, and for the export of water.
4. Ensure open and frequent communication with the public.
5. Integrate water resource planning and land use planning.

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6. Maximize the extent to which priority projects help meet statewide priorities.
7. Help disadvantaged communities with basic infrastructure improvements.
8. Help meet TMDL's being developed for mercury in the Cache Creek watershed.
9. Enhance the aquatic and riparian environment.
10. Use recycled water to the maximum extent possible.
11. Identify measures that can be implemented to reduce point-source and non-point source pollution.
12. Comply with applicable water discharge requirements.
13. Provide recreational opportunities, without adversely affecting private property owners.
14. Provide adequate storm drainage and flood control, consistent with recommendations of the State's Floodplain Management Task Force.

SUGGESTED REVISION TO OBJECTIVES

- Provide recreational opportunities that balance public investment interests and consideration of effects upon private property owners.

OBJECTIVES FROM WATER-RELATED GENERAL PLAN POLICIES (AND SUGGESTED REVISIONS)

Water Supply and Drought Preparedness

Goals

- To provide a reliable, sustainable and high quality water supply for the county to support existing and planned beneficial uses including urban, industrial, agricultural, environmental, recreational and other appropriate uses.
- Could replace this goal with the water supply goal already in the IRWMP.

Objectives

- To provide reliable and sustainable surface water from a variety of sources sufficient to serve urban, agricultural, environmental and recreational uses (as planned by the county's water purveyors and consistent with the IRWMP) in normal, above normal and prolonged drought periods, that is protective of natural resources and surface water flows.
- To manage the county's ground water resources on a sustainable yield basis that provides water purveyors and individual users with reliable, high quality ground water to serve urban,

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agricultural, environmental and other uses during normal, above normal and prolonged drought periods.

- To develop conjunctive use and ground water protection programs within the next ten years, consistent with the IRWMP and the needs of water purveyors, that maximizes the efficiency, sustainability and value of the county's surface and ground waters.
- To work with the area's water purveyors within the next five years to develop state-of-the-art urban and agricultural water use efficiency programs that meet statewide guidelines and provide substantial and measurable water use reductions throughout the county.

Water Quality

Goal

- To ensure high quality surface water and ground water resources throughout the County on a sustainable basis to serve the needs of all beneficial uses, including urban, agricultural, environmental and recreational.

Objectives

- To meet state and federal standards for water quality protection in all surface and ground water resources working closely with water purveyors, landowners and businesses, citizens, and state, federal and local agencies and non-profits.
- To develop continuous monitoring, management and protection programs and institutional capacity to ensure that water quality continues to meet standards for surface and ground water sources.
- To work in a collaborative manner with state and federal agencies and both public and private water dischargers to ensure a fair and open process of achieving long-term countywide and regional water quality protection standards for point source and non-point source pollutants.

Flood Hazard Reduction and Storm Drainage

Goals

To reduce the risk to people and property from storm runoff and flooding, taking into consideration resource constraints and environmental impacts.

- To provide for efficient, cost-effective, and sustainable solutions to storm water drainage for all new development, redevelopment, and where applicable, established developed areas.

Objectives

- To meet agreed upon standards to reduce flood risk in all areas of the County within 20 years, taking into consideration resource constraints and environmental impacts.

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- To become a model area for flood risk reduction and management approaches that incorporate environmental protection and restoration efforts, and enhance recreational opportunities, while serving flood management needs.
- To develop innovative storm water management requirements, guidelines and best practices within 5 years that enable the county to meet state and federal permit requirements, as well as improving storm water runoff quality and reducing impacts to surface water resources.

Aquatic and Riparian Ecosystem Enhancement

Goals

- To enhance, improve and maintain aquatic and riparian ecosystems and bio-diversity throughout the county.

Objectives

- Consistent with the emerging Yolo County NCCP/HCP, to establish priority aquatic and riparian habitat areas for enhancement within 5 years; and establish the necessary management and funding responses to meet NCCP/HCP restoration and protection goals.
- To become a model area for integrating agricultural production and habitat conservation through the use of sustainable agricultural water use practices and habitat enhancement incentives that are compatible with agricultural production.
- To utilize a variety of tools (such as the land development and permitting process, state and federal grants, and university resources) to achieve a sustainable and effective monitoring, management and reporting process for priority aquatic and riparian habitats in the county within 10 years.

RECOMMENDED RECREATION GOALS AND POLICIES

The water-related policies for the Yolo County General Plan did not include recreation goals or objectives, so these are proposed additions to the IRWMP goals and objectives.

Recreational Access, Opportunities, and Facilities

Goals

- To maintain, improve, and expand public access for recreational use of publicly-owned waters, waterfronts and banks, and open space.
- To create new recreational opportunities as part of public investments in water supply and conveyance, water quality, natural resource conservation, flood control and stormwater management.
- To create new recreational facilities as part of public investments in water supply and conveyance, water quality, natural resource conservation, flood control and stormwater management infrastructure and operations.

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Objectives

- Identify recreational programs and facility needs and opportunities that complement IRWMP actions.
- Integrate complementary recreational access and facility improvements within IRWMP implementation and projects.
- Harness joint funding and development methods to leverage investments across recreational, flood control, water supply, natural resource conservation, water quality and other IRWMP project objectives.
- Establish public recreation benefits as a performance standard for public investment in projects that protect private property or provide for private property development.



25-1

January 24, 2007

Dave Scheuring, Chair
Water Resources Association of Yolo County
P.O. Box 8624
Woodland, CA 95776

Dear Mr. Scheuring:

Tuleyome has expressed concerns over the make up of the Yolo Bypass Working Group Subcommittee that is being established to prioritize and implement projects in conjunction with the Integrated Regional Water Management Project in Yolo Bypass region.

We recognize the dedication, hard work, and integrity of all who have worked with the Yolo Bypass Working Group over the past seven years. We thank them for that. Our issue is not with the people involved or the work that has been accomplished by the YBWG.

We are concerned about the process of prioritizing projects and implementing them in the Yolo Bypass through the IRWMP. This is a new program with new issues and new implications and it merits a fresh review and fresh start. The formation of this new ad hoc organization charged with making key decisions on projects paid for with public money was not publicly noticed beyond the YBWG and there was no solicited public input into identifying the interests that should be represented on the committee. In its conception it was felt that this decision-making body would be merely a "subcommittee" of the existing participants in the YBWG.

We previously identified and communicated our concerns that this decision-making body should include NGO representatives concerned with fishery management issues in the Bypass, environmental justice issues, subsistence fishing issues, and similar "non-traditional" concerns. We suggested a member of the California Sportfishing Protection Alliance. We also suggested that a resident of West Sacramento should be included, particularly with respect to recreational uses in the Bypass. We suggested that outreach with respect to environmental justice interests should be made.

Notwithstanding the need for each of these other representatives, our primary interest is in having someone representing fish in Bypass management. We do understand that the people on the subcommittee care about fish, but unlike the other interests represented on the subcommittee no one outside of a governmental agency is there simply to speak for maintaining, restoring, and enhancing the Bypass as a place for fish. This is an omission that has been recognized by both the facilitator and DWR who recommended the inclusion of a fishery representative. Even so, at its last meeting the subcommittee decided not to add anyone to the subcommittee for this purpose.

Our goal in pressing this issue is to ensure that when projects are prioritized all interests are in agreement about priorities, and that when the IRWMP projects are implemented that the necessary expertise to accomplish the implementation are included in the subcommittee. Funding is limited

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and we believe that when a full range of interests are represented and everyone is in agreement that Yolo County will compete more effectively with proposals from other regions.

It would be our hope prioritization of integrated projects will go smoothly and that all interests will find common ground and move forward together. It just makes sense to start out in agreement. The resistance to this simple and reasoned request to ensure an inclusive and open process is disheartening when it could be so easily avoided.

Sincerely,

Bob Schneider
530-304-6215

Tuleyome

DEEP HOME PLACE

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26-1



February 27, 2007

Dave Scheuring, Chair, Board and Technical Committee
Water Resources Association of Yolo County
P.O. Box 8624
Woodland, CA 95776-8624

Email: info@yolowra.org

Subject: Yolo Bypass Inclusion in IRWMP

Dear Dave, Board, and Technical Committee:

In recent months I (along with other Tuleyome Board members) have been involved in discussions that have focused on the lack of a project or action in the Integrated Regional Water Management Plan (IRWMP) that addresses flood management within the Yolo Bypass region. Most recently this subject was discussed extensively at the YBWG Subcommittee meeting.

The Yolo Bypass is, foremost, a facility that's focused on flooding and flood management in the greater Sacramento region. Within that broad context a variety of activities take place that are related to many of the subjects covered by the IRWMP.

As you know, the original Bypass design addressed a conveyance capacity that was thought to be capable of routing most of the flow in a 100-year flood event past the City of Sacramento, based on the hydrological information available in the early 1900s, and thereby preventing flooding within the City of Sacramento. Since the original Bypass construction was completed, some conveyance capacity in the bypass was lost south of the City of West Sacramento with the construction of the Sacramento shipping channel within the original Bypass footprint. Based on additional hydrological data and modeling work now available, it appears that the Bypass actually has a flood conveyance capability of only about a 70-year event.

Three primary issues now face the County and the region:

- The Bypass does not have a conveyance capacity that meets the original design parameters. In addition, the Bypass conveyance capacity does not meet current Federal Emergency Management Agency requirements for protection from 100-year floods.
- The regional context for the Bypass now includes substantial development in areas that were not contemplated for development when the Bypass was initially considered, including the Natomas basin, The Pocket region in south Sacramento, and West Sacramento, all of which could be affected by flows within the Bypass that exceed the capacity of the Bypass.
- The desired flood protection standard for facilities such as the Bypass has changed, and responsible governments in the region are working to provide 200-year flood-event protection capability.

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Many planners currently believe that globally forced climate changes will result in higher-intensity storms in California, with less snowfall in the Sierra and more intense rainstorms. How such changes might affect storm duration, flood magnitude, and event frequency is currently uncertain. It is certainly possible that an event that is now considered a 200-year flood event will become a 100-year flood event as a consequence of the changing climate pattern in California.

Increasing the flood conveyance capacity of the Yolo Bypass may be the only viable option that can create significantly increasing flood protection in the Sacramento region. This issue should be recognized in the Yolo County IRWMP. Because of its regional importance, it appears that this should be a Foundational Action.

Possible wording might be:

“Evaluate options for increasing the Yolo Bypass flood conveyance capacity, given the increased development at risk in the region and the uncertainties resulting from global climate change.”

Thanks you for consideration of this issue.

Sincerely,

Bob Schneider
530-304-6215