

APPENDIX C

Model Policies for Water Resources for the Yolo County General Plan

Jeff Loux, Ph.D.
Center for Collaborative Policy (California State University, Sacramento)
and UC Davis Extension, Land Use and Natural Resources

Petrea Marchand
Water Resources Coordinator, Yolo County

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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.