

General Plan

**Conservation
Element**

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County of Sacramento
Office of Planning and Environmental Review

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SACRAMENTO COUNTY GENERAL PLAN CONSERVATION ELEMENT

ELEMENT INTRODUCTION

The County recognizes the need for effective conservation practices which allow for the maintenance and preservation of its natural environment and efficient use of its resources. The State mandates that the County's General Plan include a Conservation Element which will enable the County to analyze its resources and determine policies for their use and conservation. State law requires that the element address the management and protection of specific resources:

The Water Resources section describes the County's objectives, policies and implementation measures related to providing a safe, reliable water supply and protecting beneficial uses of Waters of the state of California (including ground and surface water). The section addresses use of ground, surface, and recycled water for residential, commercial, industrial, agricultural, and recreational purposes. The section assesses how and from where the County intends to secure its future water supply and discusses water conservation.

The Mineral Resources section delineates the County's policies on the protection of mineral resources for economic extraction while providing guidelines on how, when, and where mineral resources can be extracted to avert adverse impacts on the environment.

The Materials Recycling section specifies the County's plan of reducing the amount of solid waste that is produced. It includes policies and programs which will encourage participation in the recycling of materials and supports a sustainable market for recycled materials.

The Soil Resources section discusses the management and protection of county soils for purposes of maintaining its resource value and agricultural potential. The section deliberates on the County's future plans in dealing with the loss of agriculturally productive soils and discusses policies and programs which will encourage the utilization of effective soil conservation practices.

The Vegetation and Wildlife section consist of four main subsections, each of which discusses the preservation and management of biotic resources. The Habitat Protection and Management subsection includes many overarching policies that address habitat mitigation; habitat preserves and management; and habitat protection and project review. The Special Status Species and their Respective Habitats subsection includes policies and measures to protect and manage habitats for the protection of special status species. Aquatic Resources, the third subsection, covers the protection of vernal pools, rivers and streams and fisheries. Lastly, the Terrestrial Resources subsection addresses the protection and preservation of native vegetation, landmark and heritage trees and the urban forest while also promoting new trees in the urban landscape.

The Cultural Resources section discusses County objectives with respect to the protection and preservation of important cultural resources and plans for increasing public awareness and appreciation of them.

The goals, policies, and objectives of these sections have been developed so as to be congruous with the major goal of the Conservation Element itself: the management and protection of natural resources for the use and enjoyment of present and future generations while maintaining the long-term ecological health and balance of the environment.

Many conservation-related policies are included in other Elements of this General Plan. The Open Space Element includes types of open space found in Sacramento County and has an Open Space Vision Diagram that is an illustrative representation of lands that Sacramento County views as supporting its overall conservation vision. The Agricultural Element addresses preservation of agricultural resources and supporting the economic vitality of farming operations.

SACRAMENTO COUNTY GENERAL PLAN CONSERVATION ELEMENT

SECTION I

WATER RESOURCES

GOAL: **Ensure that a safe, reliable water supply is available for existing and planned urban development and agriculture while protecting beneficial uses of Waters of the state of California, including important associated environmental resources.**

Introduction

Sacramento County's water resources include four rivers, numerous streams, the Sacramento River Delta, and an extensive groundwater basin. The County is bordered on the west by the Sacramento River, a significant source of surface water for municipal, agricultural, and recreational uses. At the County's northeast corner lies Folsom Dam and Reservoir - the largest on the American River with a storage capacity of one million acre-feet - that provides water supply, flood control, power generation, and recreation. The lower American River, which flows from Folsom Dam through the heart of the County to its confluence with the Sacramento River, is another significant source of municipal water supply, and the 30-mile long American River Parkway is a significant riparian ecosystem that provides recreational opportunities including hiking, biking, rafting, and fishing. The Cosumnes River and a short reach of the lower Mokelumne River flow across the south County, providing a limited supply of water for municipal and agricultural use, and supporting significant wetlands and riparian habitat, notably in the Cosumnes River Preserve. The County's many streams provide a limited (often seasonal) supply of water for agricultural and recreational uses. The Sacramento River Delta in the southwest corner of the County, is interlaced with numerous tidal sloughs that include a number of peat islands reclaimed for agriculture by an extensive levee system; these waterways are an important fishery and aquatic ecosystem, provide water for Delta farms, and are important recreational areas.

Sacramento County lies over the north central portion of California's Great Valley Groundwater Basin, a complex system of groundwater aquifers generally composed of marine sediments and stratified sand, silt, and clay layers many thousands of feet thick; only the upper layers contain usable water. The portion of the Great Valley basin that lies beneath Sacramento County is comprised of three hydraulically continuous sub-basins (Figure 1) with a combined fresh water storage volume estimated at more than 30,000,000 acre-feet; the average depth to groundwater is about 100 feet. The most significant recharge of the groundwater basins occurs along the American and Cosumnes Rivers, with additional recharge from the Sacramento River and local streams. Groundwater provides more than one-half the water supply for municipal and agricultural water uses in Sacramento County.

The 2000 Water Forum Agreement (WFA) has been the most significant event affecting water management in Sacramento County since the adoption of the 1993 General Plan. Signed by Sacramento County and 41 other stakeholders from Sacramento, Placer, and El Dorado counties, the WFA has two co-equal objectives:

1. Provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and
2. Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River.

Many of the water-related policies in this section have their basis in the commitments made under the WFA; notwithstanding that the WFA could be modified or even terminated during the life of the General Plan, it is the County's intent to preserve the WFA commitments in the Conservation Element of the General Plan.

There has also been significant state legislation affecting water resources management since the adoption of the 1993 General Plan, and both the California Water Code and Government Code have been modified to prescribe more rigorous water planning and evaluation of water supply reliability in land use decision-making. These include requirements for public water systems to prepare and periodically update Urban Water Management Plans, and to prepare both Water Supply Assessments and Written Verifications of Sufficient Water Supply for proposed urban developments.

Supporting Objectives

Six Water Resources Objectives have been formulated as essential for achieving the Water Resources Goal:

1. Optimize the use of available surface water in all types of water years (wet/normal, dry and driest);
2. Manage groundwater to preserve sustainable yield;
3. Ensure the most efficient use of water in urban and agricultural areas;
4. Manage water supply to protect valuable water-supported ecosystems;
5. Manage the quality and quantity of urban runoff to protect the beneficial uses of surface water and groundwater;
6. Manage municipal and industrial (M&I) water supplies efficiently to serve existing and proposed development within the Urban Policy Area.

Objectives 1 and 2 recognize that a conjunctive use supply of groundwater and surface water is essential to assure a reliable long-term supply of water for the beneficial use of existing and proposed development and agriculture. Objective 3 recognizes that water is a limited resource subject to periodic shortages and must be used efficiently. Objective 4 recognizes the essential value of water resource-supported ecosystems. Objective 5 addresses the critical need to protect the beneficial uses of surface and groundwater through urban runoff management programs. Objective 6 recognizes the need to manage water supplies efficiently to meet the needs of current residents and future development. The six Water Resources Objectives are each supported by a

set of policies to guide land use decision-making, with specific actions to implement these policies.¹

Optimal Use of Surface Water

Objective: Optimize the use of available surface water in all types of water years (wet/normal, dry, and driest years).

The volume of surface water available for beneficial use in Sacramento County varies on the basis of precipitation patterns and the assignment of water rights. It is essential to maximize the beneficial use of the surface water available in any given year in order to preserve sustainable groundwater yield and assure a reliable, long-term water supply.

Policies

- CO-1. Support conjunctive use water supply for development.
- CO-2. Support the perfection of local water rights and entitlements.
- CO-3. Preserve area of origin water rights and oppose the transfer of locally held water rights outside the County.
- CO-4. Support the construction of facilities that maximize the use of available surface water.
- CO-5. Support the WFA Increased Surface Water Diversions Element. Collaborate with other local water purveyors to ensure consistency with WFA conjunctive use goals.
- CO-6. Support surface water supply alternatives for agriculture, including the use of SMUD water entitlements, where feasible.

Implementation Measures

- A. Coordinate with the appropriate water purveyors regarding:
 - The consistency of a proposed water supply with the WFA Increased Surface Water Diversions Element.
 - The development's fair share financial support of conjunctive use water supply programs. (PLANNING & ENVIRONMENTAL REVIEW)

¹ Stewardship of water resources also includes a consideration of floodplain development, levee stability, riparian and wetland habitat protection, and marina development. Related policies are found in the Urban Stream Corridors, the Wetland and Riparian Areas, and the Fisheries Sections of the Conservation Element; flood protection is discussed in the Safety Element.

- B. Based on an assessment of feasibility, the water purveyor within whose jurisdiction a development would occur shall determine whether the development would be required to provide water supply from a conjunctive use water system. (ALL PURVEYORS)
- C. Participate in groups such as the Water Forum to support regional application of conjunctive use policy, where feasible. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Sustainable Yield of Groundwater

Objective: Manage groundwater to preserve sustainable yield.

Groundwater production that exceeds the rate of basin recharge causes the groundwater levels to fall and puts groundwater quality and the recharge capacity of the aquifer at risk. The sustainable yield of Sacramento County's groundwater sub-basins is also compromised by contamination that is the result of human activities, and by the reduction of groundwater recharge potential caused by urban development.

Policies

- CO-7. Support the Water Forum Agreement Groundwater Management Element. Prior to approving any new development water supply plan shall be approved that demonstrates consistency with an adopted groundwater management plan.
- CO-8. Applicants proposing developments in areas with significant groundwater recharge characteristics shall evaluate the impact of said development on groundwater recharge and quality. This evaluation should recognize criteria defined in any broader County-wide determination and/or evaluation of groundwater recharge areas.
- CO-9. Developments in areas with significant contamination shall utilize remediated groundwater as part of their water supply when feasible.
- CO-10. Support local watershed initiatives that enhance groundwater recharge.
- CO-11. Support local groundwater management efforts that are consistent with the WFA Groundwater Management Element.
- CO-12. Support groundwater recharge in surface mining reclamation plans where feasible.

Implementation Measures

- A. Coordinate with the appropriate water purveyors regarding:

- The consistency of a proposed development’s water supply with the basin management objectives and policies of Sacramento County’s three groundwater management authorities.
 - The development’s impact on groundwater recharge and groundwater quality. (PLANNING & ENVIRONMENTAL REVIEW)
- B. Based on a finding regarding the feasibility of a remediated groundwater supply, require development in areas affected by groundwater contamination to provide a non-potable distribution system for irrigation and other non-potable uses. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- C. Participate in local groundwater management efforts that are consistent with the goals of the WFA Groundwater Management Element such as the Sacramento Central Groundwater Authority. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- D. Evaluate opportunities for groundwater recharge in surface mining reclamation plans when feasible. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Efficient Use of Urban and Agricultural Water

Objective: Ensure the most efficient use of water in urban and agricultural areas.

Efficient water use is essential to address the limited volume of safe, reliable water supplies available for beneficial use in Sacramento County. Water available for beneficial use is limited by precipitation patterns, water rights limitations, sustainable groundwater yield, and water required for the preservation of important environmental resources.

Policies

- CO-13. Support the WFA Conservation Element and the California Urban Water Conservation Council Best Management Practices for Water Conservation.
- CO-14. Support the use of recycled wastewater to meet non-potable water demands where financially feasible.
- CO-15. Support effective agricultural water conservation practices, including the use of recycled wastewater where financially feasible.
- CO-16. Ensure developments are consistent with the County Water Efficient Landscape Ordinance, which shall be updated as needed to conform to state law.
- CO-17. Prohibit artificial lakes supplied with groundwater.

Implementation Measures

- A. Condition development to provide a non-potable distribution system to supply recycled wastewater to meet non-potable demands based on a finding regarding the feasibility of a short-term and long-term supply of recycled wastewater and consistency with state law. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- B. Participate in groups such as the Water Forum and the California Urban Water Conservation Council to promote area-wide urban conservation practices. (DWR)
- C. Update the Sacramento County Water Efficient Landscape Ordinance as necessary to conform with State law. (PLANNING & ENVIRONMENTAL REVIEW)

Manage Water to Protect Ecosystems

Objective: Manage water supply to protect valuable water-supported ecosystems.

The beneficial use of water for urban development and agriculture changes patterns of river and stream flow and water quality, which have impacts on valuable water-supported ecosystems, including riparian and stream ecology and the Sacramento River Delta.

Policies

- CO-18. Support the WFA recommended Lower American River Flow Standard.
- CO-19. Support the WFA Lower American River Habitat Management Element.
- CO-20. Support preservation and restoration of the Cosumnes River riparian ecosystem.
- CO-21 Support protection and restoration of the Sacramento River Delta.
- CO-22. Support water management practices that are responsive to the impacts of Global Climate Change such as groundwater banking and other water storage projects.
- CO-23 Development approval shall be subject to a finding regarding its impact on valuable water-supported ecosystems.

Implementation Measures

- A. Condition development projects to provide fair share funding of water-supported ecosystems restoration programs where appropriate. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- B. Condition development and agriculture to comply with Delta protection policies when appropriate. (PLANNING & ENVIRONMENTAL REVIEW)

- C. Participate in local Delta stewardship efforts such as Delta Protection Commission.
(PLANNING & ENVIRONMENTAL REVIEW)

Manage Runoff to Protect Beneficial Uses and Groundwater

Objective: Manage the quality and quantity of urban runoff to protect the beneficial uses of surface water and groundwater

Continued development and urban expansion in the Sacramento region necessitates coordinated efforts by governing authorities to protect beneficial uses of surface water and groundwater for the benefit of the community and to comply with state regulations. This can be achieved by implementing coordinated urban runoff management programs which include actions to identify causes of degradation, establishment and enforcement of legal authority to control those sources and implementation of best management practices to address identified problems. Equally important is taking action to remedy water resources pollution and degradation problems to the extent possible.

Policies

- CO-24. Comply with the Sacramento Areawide National Pollutant Discharge Elimination System Municipal Stormwater Permit (NPDES Municipal Permit) or subsequent permits, issued by the Central Valley Regional Water Quality Control Board (Regional Board) to the County, and the Cities of Sacramento, Elk Grove, Citrus Heights, Folsom, Rancho Cordova, and Galt (collectively known as the Sacramento Stormwater Quality Partnership [SSQP]).
- CO-25. Support the preservation, restoration, and creation of riparian corridors, wetlands and buffer zones.
- CO-26. Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.
- CO-27. Support surface water quality monitoring programs that identify and address causes of water quality degradation.
- CO-28. Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State's Construction General Permit and Aquatic Pesticides Permit.
- CO-29. Continue to support the County's participation in regional NPDES Municipal Permit compliance activities through collaborative efforts such as the Sacramento Stormwater Quality Partnership.

- CO-30. Require development projects to comply with the County’s stormwater development/design standards, including hydromodification management and low impact development standards, established pursuant to the NPDES Municipal Permit. Low impact development design and associated landscaping may serve multiple purposes including reduction of water demand, retention of runoff, reduced flooding and enhanced groundwater recharge. **(Modified 2016)**
- CO-31. Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.
- CO-32. Support programs and activities conducted by watershed groups and citizen volunteers that help to ensure compliance with the NPDES Municipal Permit by increasing public awareness and encouraging stewardship of water resources

Implementation Measures

- A. Conduct the activities described in the County’s comprehensive Stormwater Quality Improvement Plan (SQIP), subject to modification through annual work plans, annual reports or regulatory changes/directives, as required by the NPDES Municipal Permit. The SQIP includes both activities to be conducted individually by the County and activities to be conducted regionally in collaboration with the other permittees. (DWR)
- B. Update stormwater quality development/design standards and guidelines, such as those described in the Stormwater Quality Design Manual for Sacramento and South Placer Regions, to apply to small development and redevelopment projects. Conduct a comprehensive water quality monitoring program as defined in the NPDES Municipal Permit, and maintain a database of monitoring results. (DWR)
- C. Participate in local activities and events which promote public education and stewardship of water resources, such as Creek Week. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Efficient Use of Municipal and Industrial Water

Objective #6: Manage municipal and industrial (M&I) water supplies efficiently to serve existing and proposed development within the Urban Policy Area.

Continued development within the Urban Policy Area necessitates the careful consideration available water supplies to ensure that current and future resident’s needs are met. This can be achieved by the implementation of policies that comply with applicable state law and allocate water supplies to development projects at the appropriate time in the planning process.

Policies

- CO-33. Support an adequate and reliable M&I water supply for development
- CO-34. Development applications shall be subject to compliance with applicable sections of the California Water Code and Government Code to determine the availability of an adequate and reliable water supply through the Water Supply Assessment and Written Verification processes.
- CO-35. New development that will generate additional water demand shall not be approved and building permits shall not be issued if sufficient water supply is not available, as demonstrated by Water Supply Assessment and Written Verification processes.
- CO-36. Water supply entitlements will be granted on a first come first serve basis to optimize the use of available water supplies.

Implementation Measures

- A. Coordinate with appropriate water purveyors to demonstrate adequate water supply for development. (PLANNING & ENVIRONMENTAL REVIEW)

SACRAMENTO COUNTY GENERAL PLAN CONSERVATION ELEMENT

SECTION II

MINERAL RESOURCES

GOAL: Mineral resource protected for economic extraction with minimal adverse impacts.

Introduction

Mineral resources in Sacramento County include natural gas, petroleum, sand, gravel, clay, gold, silver, peat, topsoil and lignite. The principal resources which are in production are aggregate (sand and gravel) and natural gas. The natural gas production areas are located mostly in the Delta's Rio Vista Field, one of California's largest producing areas. Asphaltic and Portland concrete are produced along with free gold and silver recovered from the crushing process. Clay is surface mined as well as topsoil. At present, peat and lignite deposits in the Delta are not commercially mined. Resource conservation issues associated with natural gas production and the lesser minerals are not significant. This plan focuses primarily on aggregate production.

All of the sand and gravel mined in Sacramento County is used for construction. Construction aggregates are an important, fundamental building material extensively used as a foundation and road base material, and with a Portland cement or asphaltic binder, in all types of road pavement and construction concrete.

Sacramento County's primary remaining aggregate deposits are located in the Old American River channel south of Rancho Cordova (Figures 1–3). To date, the County has been exemplary in designating and protecting these areas for future mining. However, the eastward progression of urban development, coupled with major changes at Mather, present important land use questions for aggregate resource lands. The General Plan recognizes the conflict and tries to accommodate both resource protection and urban growth. Policies address the need to carefully coordinate urban development and mining to minimize the inherent conflicts.

The need to conduct surface mining so as to minimize adverse environmental effects and ensure reclamation for future use is recognized by both state and County regulations, including the California Environmental Quality Act (CEQA). The Zoning Code requires surface mining combining zoning; and a conditional use permit addressing potential noise, dust, water quality, traffic and aesthetic problems, or alternatively, regulation through the procedures of an existing special planning area zoning designation. A reclamation plan for future use of mined areas is required prior to initiating mining in all zones. The County permitting process for mining areas is also included in the Zoning Code. The General Plan must provide support and direction for administering these regulations.

FIGURE 1

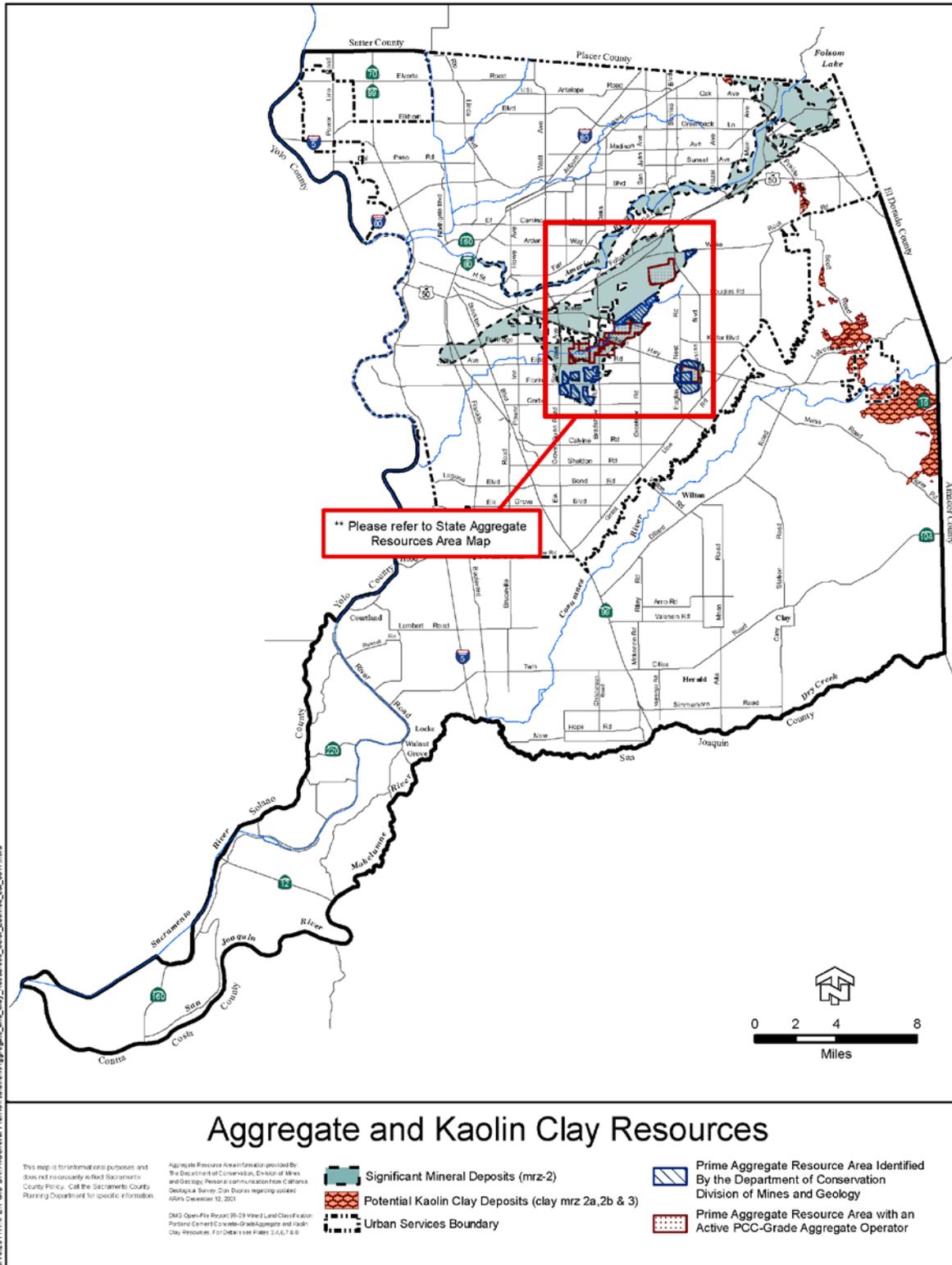


FIGURE 2

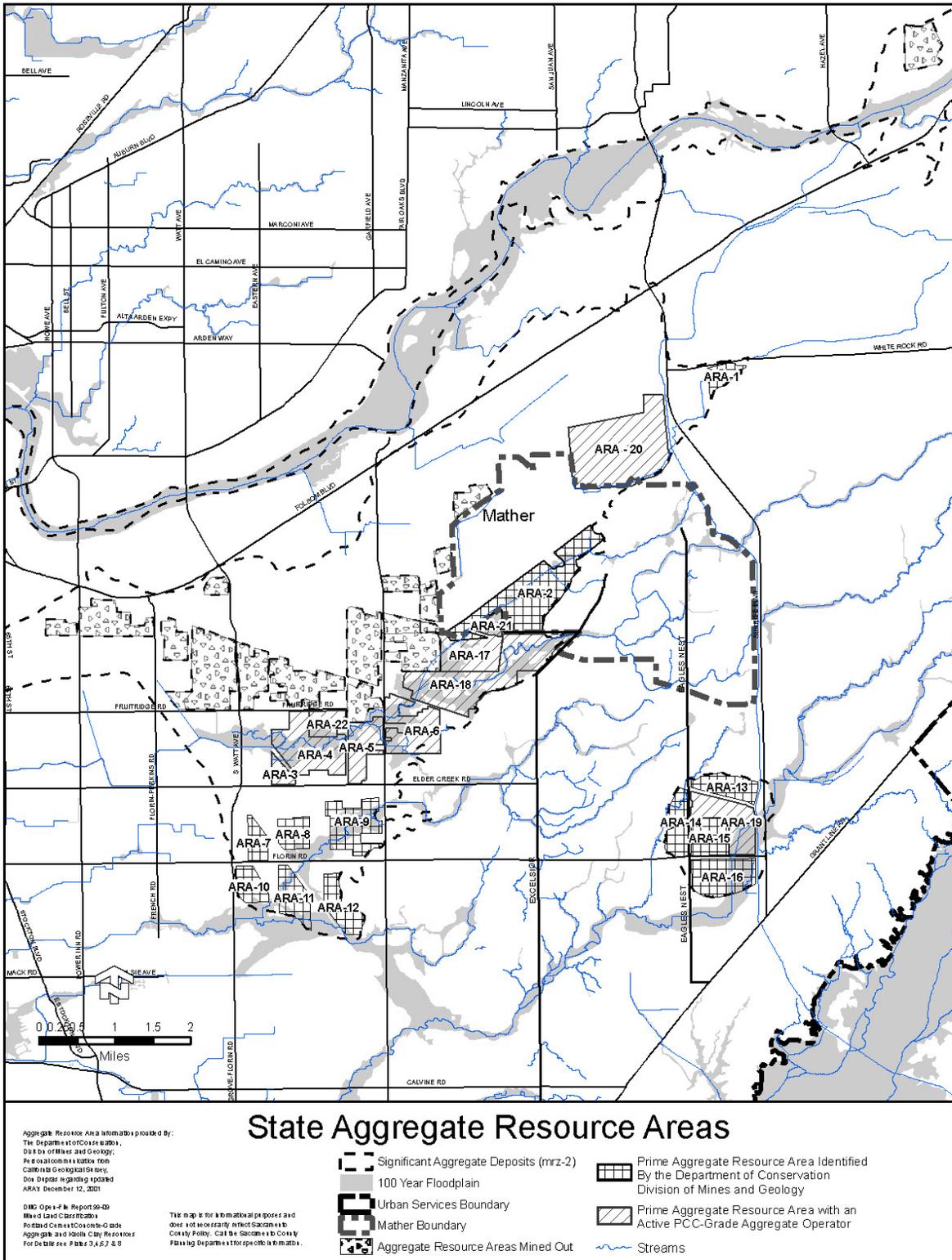
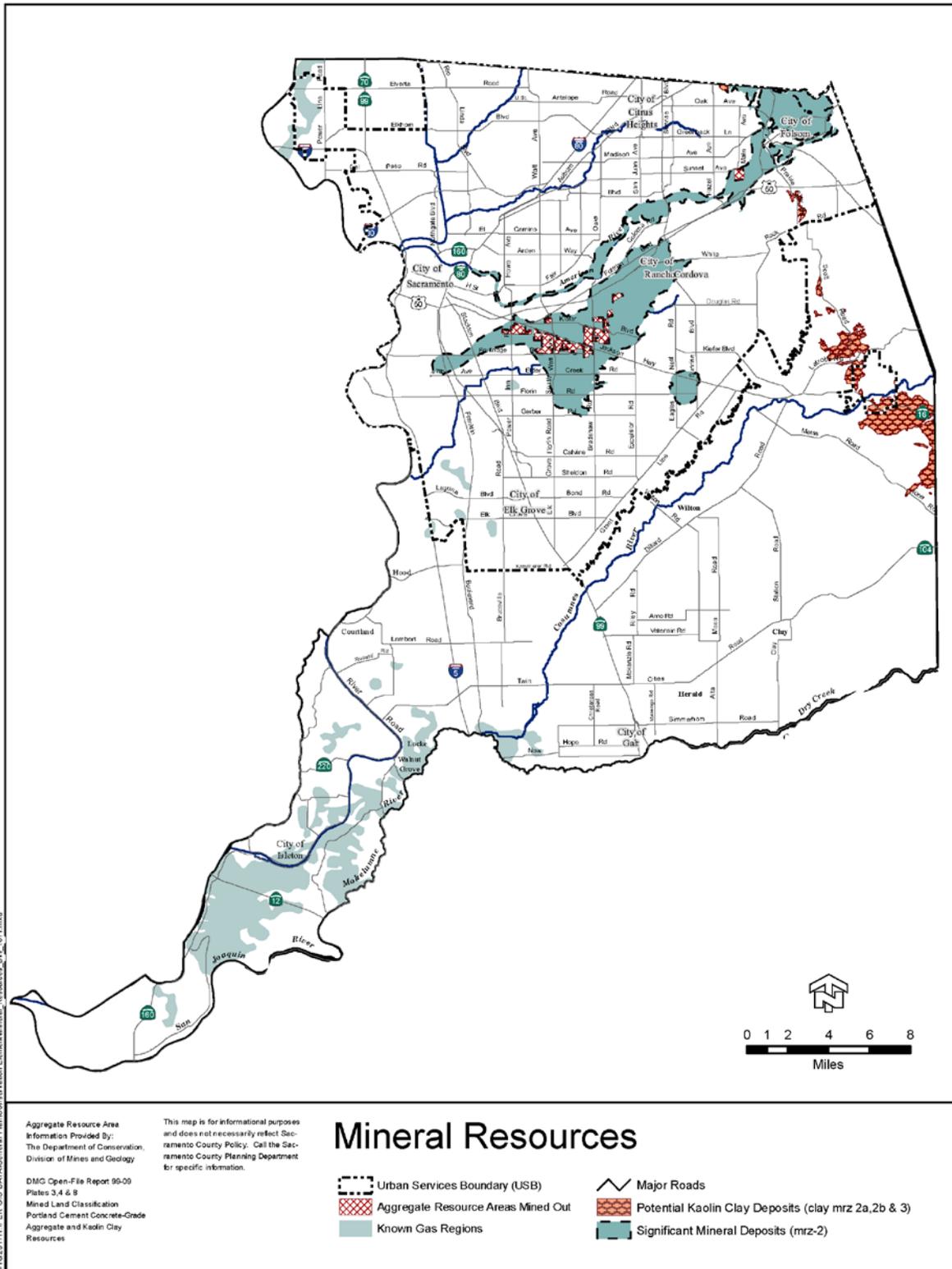


FIGURE 3



This section describes policies and programs under five objectives:

1. Known resources protected for future mining.
2. New resources located.
3. Orderly resource extraction with minimal adverse impacts.
4. Sequential timing of mining and urban development.
5. Concrete recycled.

Mineral Resources Protected

Objective: Known mineral resources protected from land uses which would preclude or inhibit timely mineral extraction to meet market demand.

Intent: The General Plan land use diagram identifies primary aggregate resources of the American River channel deposit with an aggregate resources combining land use designation. The first policy formalizes existing practice with respect to applying the combining land use category and Surface Mining Combining (SM) zone. The second policy calls to attention the need to plan sewer system extension carefully so as not to preclude mining or future reclamation options.

Policies:

- CO-37. Apply the aggregate resources combining land use category to additional areas as subsequent studies determine them to contain mineral resources which are feasible and appropriate for mining. The aggregate resources combining land use category shall not be a prerequisite to (SM) surface mining combining zoning or regulation through the procedures of an existing special planning area zoning designation in conjunction with proposed surface mining.
- CO-38. Sewer interceptor and trunk alignments shall be routed to avoid areas planned for aggregate resource mining to the extent practical. Where such alignments are impractical, they shall be designed to minimize aggregate resources which would be precluded from mining, and make reasonable attempt to preserve the future use of mined areas for flood control or recharge purposes.

Mineral Resource Evaluation and Management

Objective: Resources and options for future extraction identified within the context of an ongoing local resource evaluation and management program.

Intent: The California Geological Survey has the primary responsibility under the provisions of the Surface Mining and Reclamation Act of identifying aggregate resource areas (ARAs). The California Division of Mines and Geology (DMG) Open File Report 99-09 titled “*Mineral Land Classification: Portland Cement-Concrete-Grade Aggregate and Kaolin Clay Resources in Sacramento County*” includes information on the State process for designating ARAs.. Relying solely on local aggregate producers to identify resources will yield privately initiated and perhaps scattered rezones and use permit proposals, which would not allow the comprehensive planning perspective of a broad study followed by General Plan changes. Additional revenues are needed to fund a County resource evaluation effort and provide trained staff to deal with the full range of aggregate resource issues. The County should investigate establishing a resource extraction fee which might be payable in annual installments over the term of use permits.

Implementation Measures:

- A. Determine the extent and quality of aggregate resources west of Bradshaw Road between Florin and Elder Creek Roads, on Aerojet property, the Cosumnes River above Wilton Road and other locations with potential mineral resources. (PLANNING & ENVIRONMENTAL REVIEW)
- B. Study the feasibility of establishing, in conjunction with use permit approval for surface mining, a resource extraction fee to fund a staff geologist and consultant services as necessary to implement policies and programs relating to mineral resource protection. (PLANNING & ENVIRONMENTAL REVIEW)
- C. Establish regular coordination with the California Geological Survey, provide them with information regarding aggregate resource depletion in the County, and solicit financial and technical assistance for resource studies. (PLANNING & ENVIRONMENTAL REVIEW)

Extraction of Minerals

Objective: Orderly extraction of minerals and subsequent reclamation of mined areas with minimal adverse impacts on aquifers, streams, scenic values, and surrounding residential uses.

Intent: This objective is largely implemented through existing County Zoning Code provisions and CEQA. Policies below provide support. Cyanide leaching of gold does not currently occur in Sacramento and the prohibitive policies reflect its inappropriateness in an urban county. The County also has several thousand acres of disturbed and unreclaimed land from historical mining activities. This disturbed acreage consists mainly of dredger tailings. These tailings may support minimal vegetation, and may occupy land that is better suited for other development uses, and

they are a substantial local available source of construction grade aggregate. Some of these tailings have been studied and shown to provide habitat to the Valley Elderberry Longhorn Beetle and may provide habitat for other species.

Policies:

- CO-39. Surface mining operations shall be subject to appropriate mitigation measures and shall avoid creating any significant nuisances, hazards, and adverse environmental impacts, unless the Board of Supervisors makes the findings to override as required by CEQA Guidelines Section 15091.
- CO-40. Extractive uses and associated processing uses and facilities shall maintain adequate minimum setbacks to protect adjoining land uses.
- CO-41. Surface mining shall not be allowed without adequate plans for reclamation of mined areas. Reclamation plans should be based on a plan for post-mining land use that is consistent with the land use strategies of the General Plan.
- CO-42. Gold extraction utilizing cyanide leaching systems shall not be permitted.
- CO-43. Hardrock mining shall be conducted in a way that mitigates long-term undesirable impacts.

Implementation Measures:

- A. Continue to monitor implementation of use permit conditions approved for surface mining operations or regulation through the procedures of an existing special planning area zoning designation. (PLANNING & ENVIRONMENTAL REVIEW)
- B. Maintain and update information pertaining to appropriate state-of-the-art techniques for erosion control, reclamation, nuisance prevention and environmental impact mitigation relative to surface mining operations. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- C. Provide pertinent applications, plans and environmental documents to all agencies which may be involved with future reclamation uses, including service providers, parks agencies, and resource management agencies. (PLANNING & ENVIRONMENTAL REVIEW)
- D. Prepare a comprehensive plan for hard rock mining that helps to guide a cohesive and logical pattern for future mining activities based on estimated mineral supply needs, evaluation of environmental impacts and minimizing effects on adjacent land uses. (PLANNING & ENVIRONMENTAL REVIEW)

Surface Mining and Other Land Uses

Objective: Sequential timing for mining of aggregate areas linked to the timing of urban development.

Intent: Aggregate mining is an interim use of land. Mined and reclaimed sites can be reused for agriculture or open space uses either permanently or as additional interim uses until such time as final reuse plans are adopted. Continued urban development threatens areas with mineral resources. Within the Urban Services Boundary, it is important to balance the need for mineral resources, habitat protection and existing and future development.

Policy:

CO-44. Due to the predicted shortages of aggregates in Sacramento County, mining of mineral resources within the Urban Services Boundary (USB) is encouraged, where consistent with Habitat Conservation Plans or other County initiated conservation programs and where such mining does not preclude successful completion of these plans, to avoid the potential loss of these mineral resources as a result of potential urban development. This policy is not intended to preclude mining outside the USB.

Implementation Measures:

- A. Develop a strategy for mining within the USB that is consistent with other land uses and the preservation strategies that are currently being developed for the South Sacramento Habitat Conservation Plan. (PLANNING & ENVIRONMENTAL REVIEW)
- B. Develop a strategy for mining Mather AFB lands that is consistent with other land uses and the preservation strategies that are currently being developed for the South Sacramento Habitat Conservation Plan and the reuse needs for the Base. (PLANNING & ENVIRONMENTAL REVIEW, ECONOMIC DEVELOPMENT)

Aggregates Recycling

Objective: Ten percent and twenty percent of demand for aggregates met by recycled or substitute materials by 2010 and 2020 respectively.

Intent: Local aggregate producers primarily harvest PCC grade aggregate--the highest quality and the most easily processed in terms of production costs. Good quality aggregate is being rapidly depleted. Continuing to encourage that new road base material be partly comprised of recycled material could help initiate a market in this area. However, safeguards are essential to ensure that material recovery and processing is conducted without adverse impacts.

Policy:

CO-45. To the maximum extent possible, all base material utilized in County and private road construction shall be composed of recycled asphalt concrete and roadway base material.

Implementation Measures:

- A. Modify construction standards for County roads to utilize recycled products without altering the engineering properties per the Sacramento County Standard Construction Specifications, and upon approval of the Public Works and Infrastructure Agency. (SACDOT)
- B. Develop appropriate conditions applicable to projects involving private roads. (PLANNING & ENVIRONMENTAL REVIEW)
- C. Investigate the use of recycled concrete or substitute materials in other construction applications. (COUNTY ENGINEERING)
- D. Investigate concrete recycling operations elsewhere and determine appropriate mitigation measures. (PLANNING & ENVIRONMENTAL REVIEW)

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**SACRAMENTO COUNTY GENERAL PLAN
CONSERVATION ELEMENT**

SECTION III

MATERIALS RECYCLING

GOAL: Widespread use, reduction and recycling of materials by county residents and businesses leading to significant per capita waste reduction.

Introduction

Increased public recognition of rapidly growing solid waste generation, lack of suitable disposal sites, toxic contamination at many landfills, and the harmful environmental side effects of disposable packaging have resulted in many new government mandates to reduce solid waste. It is increasingly apparent that when we reuse and recycle materials, we also conserve virgin natural resources, reduce garbage in the environment and conserve landfill space.

According to the California Integrated Waste Management Board (CIWMB), waste generation rates for unincorporated Sacramento County and the City of Citrus Heights (these two jurisdictions are calculated together by the CIWMB) total approximately 14.58 pounds of solid waste per capita daily or more than 1.72 million tons annually.² Although the County currently has adequate landfill capacity, significant opportunities and local motivation exist to reduce solid waste. Additionally, California AB 939, adopted in 1989, requires that jurisdictions achieve 25 percent and 50 percent reduction in solid waste landfill volume by 1995 and 2000 respectively. In 2000, the CIWMB extended the requirements of AB 939 far into the foreseeable future. This section presents a policy framework to not only achieve solid waste reduction through recycling and reuse, but also to integrate materials reuse into the daily routines of County residents, businesses, and government agencies.

This section describes policies and implementation measures under three objectives:

- Maintain at least a 50 percent diversion rate of the waste stream from the landfills through source reduction, recycling, and composting.
- Continued participation for residents and businesses in a countywide recycling program.
- A sustainable market for all recycled materials supported by procurement of recycled or reusable products and materials purchased by the County.

Additional policies related to solid waste disposal are located in the Public Facilities Element, Solid Waste Section.

² Waste generation rates verified with Kyle Pogue of CIWMB, 7/31/06.

Solid Waste Reduction Plan

Objective: Maintain at least a 50 percent diversion rate of the waste stream from landfills through source reduction, recycling, and composting.

Intent: State law mandates a minimum of 50 percent reduction in the total solid waste stream that is disposed of in landfills. Ongoing analyses prepared by County staff show that current source reduction, recycling and composting programs are achieving at least a 50 percent solid waste reduction with a diversion rate of 62% for 2004 accepted by the CIWMB in 2006.³

Currently, however, the County lacks an environmentally friendly and cost-effective means of reducing residential garden refuse (green materials), which comprises approximately 20% of its solid waste. The introduction of a Sacramento County GreenCycle facility, to “recycle” green materials, therefore has potential to aid the County in its efforts to maintain a rate of solid waste reduction that exceeds the minimum state mandate. The Sacramento Regional Solid Waste Authority (SWA), a joint powers authority of Sacramento County and the cities of Sacramento and Citrus Heights that regulates solid waste collection, is currently implementing plans for a GreenCycle facility in Sacramento County. The proposed facility would recycle residential green materials into usable compost. The SWA is considering four possible sites for the facility throughout Sacramento County. The potential sites are undergoing environmental review to select a final site for the facility.

Policy:

CO-46. Reduce solid waste beyond the 50% minimum state mandate through a variety of recycling programs.

Implementation Measure:

- A. Continue to implement the County Source Reduction and Recycling Element programs required under Assembly Bill 939 which includes policies and programs for curbside recycling programs, recycling programs serving multi-family households, central commercial and residential waste processing facilities and recycling of garden refuse generated in the County. (WASTE MANAGEMENT AND RECYCLING)
- B. In cooperation with Sacramento Regional Solid Waste Authority (SWA), establish and operate a GreenCycle facility to significantly reduce the residential garden refuse generated in the unincorporated County. This facility should improve long-term stability and reliability, minimize potential nuisance issues with surrounding property owners and shorten distances for transporting green materials. (WASTE MANAGEMENT AND RECYCLING)

³ Information from Sacramento County Waste Management and Recycling, September 2006.

Residential & Business Participation in Recycling

Objective: Continued participation for residents and businesses in Countywide recycling programs.

Intent: The County of Sacramento has implemented a mixed recycling curbside program. Public education and promotional programs are designed to increase the public's awareness of the need to recycle and to demonstrate how easy it is to participate. Additional policies related to solid waste management are located in the Public Facilities Element, Solid Waste section.

Policies:

CO-47. Commit adequate funds from collection fees to advertise and promote public participation.

Implementation Measures:

- A. Identify and evaluate building design requirements which would facilitate recycling. (WASTE MANAGEMENT AND RECYCLING)
- B. Develop measures requiring specified commercial and industrial developments to prepare recycling implementation plans. (WASTE MANAGEMENT AND RECYCLING)

Recycling Market

Objective: A sustainable market for all recycled materials supported by procurement of recycled or reusable products and materials purchased by the County.

Intent: Successful recycling programs depend on a market for reusable materials sufficient to accommodate the volume of recyclable products collected. A County procurement program prioritizes the purchase of products and materials with a specific recycled content.

The Department of General Services developed a recycled content procurement program which encompasses the implementation measures of this element. This Environmental Purchasing Policy, approved by the Board of Supervisors in January 2003, specifies best procurement practices and waste prevention practices.

Policies:

CO-48. All County departments and agencies shall enforce the Environmental Purchasing Policy, approved by the Board of Supervisors in January 2003, which facilitate purchase of recycled, recyclable or reusable products and materials where feasible.

- CO-49. Outside contractors bidding to provide products or services to the County, including printing services, must demonstrate that they will comply with County recycled materials policies to the greatest extent feasible.
- CO-50. Actively promote a comprehensive, consistent and effective recycled materials procurement effort among other governmental agencies and local businesses.

Implementation Measures: (ALL GENERAL SERVICES)

- A. Maintain a list of preferred products which are made from recycled materials.
- B. Evaluate and recommend specific policies or programs to promote recycled product purchases, including commitments to purchase selected products only as recycled, establishment of "set asides" of total purchases, cooperative purchasing programs, and price preferences.
- C. Revise departmental procurement policies and procedures to ensure that performance standards for particular products can be met, the specifications are not overly stringent and that they incorporate reusable products and products designed to be recycled.
- D. Develop a monitoring program to assess progress towards reaching recycled products procurement objectives established in the County's Environmental Purchasing Policy.

**SACRAMENTO COUNTY GENERAL PLAN
CONSERVATION ELEMENT**

SECTION IV

SOIL RESOURCES

GOAL: Preserve and protect long-term health and resource value of agricultural soils.

Introduction

Sacramento County's agricultural economy is, and will remain, dependent upon soil productivity. Productive soils are generally found in three geomorphic regions: the ancient river terraces, the geologically recent river flood plains, and the Delta. The river terraces, or bench soils, have reduced organic material in the soil matrix, but are agriculturally productive. The flood basin soils are alluvium materials, with an increased percentage of organic and mineral compounds. Lastly, the Delta soils are primarily fertile peat comprised of slow-to-decay organic material.

Soil Conservation Agencies

The Natural Resource Conservation Service (NRCS) is a federal agency with offices in almost every county in the U.S. Office staff provides information, guidance and training to local organizations and individuals interested in conservation. A part of their charge is to assist in soil conservation. In addition, they maintain a Nationwide Land Inventory and Monitoring system. The Important Farmland categories used in the inventory are Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

Long term productivity of soils helps maintain agricultural viability for future generations and can include preventative measures against erosion and oxidation. To this end, farm community members have entered into agreements with the NRCS to create three Resource Conservation Districts in the southern portion of the County -- Florin, Lower Cosumnes, and Sloughouse. The NRCS provides technical and financial assistance to members of these districts.

Much of the Delta peat soils in the Lower Cosumnes Resource Conservation District are undergoing subsidence from oxidation (exposing peat to the drying factors of air) and subsequent shrinkage and wind erosion. Tillage and irrigation on islands experiencing high amounts of subsidence should be curtailed to slow the rate of soil loss and protect sinking levees and adjacent islands.

The State of California Department of Conservation (DOC), Farmland Mapping and Monitoring Program (FMMP) provides valuable data regarding soil quality and land use. The DOC also categorizes Important Farmlands in California, using modified definitions of the NRCS's categories. (See Section II of the Agricultural Element for a full explanation of the modified definitions for California). The most significant modification is that DOC Prime and Statewide

Importance farmlands must be irrigated. In addition, mapping of Grazing Land is unique to California. Every two years the FMMP maps the entire state using the DOC Land Categories.

Approximately half of the productive farmland in Sacramento County is classed as prime; farmlands statewide in importance, unique farmland, farmland of local importance, and grazing land comprise the remaining balance.

Urban expansion in much of the County has converted productive agricultural land into other uses. Between 1989 and 2004, total acreage in production fell from nearly 253,000 acres to below 217,000 acres⁴. Over that same time period, of the 636,083⁵ acres comprising the County, 40 percent were in production in 1989, while the figure dropped to 34 percent by the end of 2004. Lost acreage from conversion to urban uses is permanently withdrawing productive soils from agricultural production. Consideration of the inherent value of agricultural land should be closely examined when deciding to develop or not develop on fertile soils.

The Agricultural Element contains policies that support the conservation of farmland. In particular AG-5 addresses mitigation for projects impacting more than 50 acres of farmland. It calls for 1:1 mitigation of specific farmland categories. AG-6 allows some ag land mitigation through urban farming, when a project is associated with an approved master plan or community plan.

This section describes policies and programs under four objectives. In addition, the Agricultural Element of this General Plan includes additional objectives related to agriculture preservation and economic viability.

1. Loss of important agricultural soils compensated by long-term protection of land with similar productivity value and soil conservation practices.
2. Agriculturally productive Delta soils protected from the effects of oxidation, shrinkage, and erosion.
3. Widespread farmer participation in Resource Conservation District programs.
4. Mining of top soil to have minimal effect on soil productivity.

Development and Agricultural Soils

Objective: Compensate for the loss of important agricultural land by long-term protection of land with similar productivity value and soil conservation practices.

⁴ Information from the 1993 Sacramento Plan General Plan Background Report and the Sacramento County 2004 Crop & Livestock Report. Total productive acreage was derived by combining harvested acreage of field crops, fruit and nut crops, seed crops, vegetable crops and nursery production.

⁵ California Department of Conservation Farmland Mapping and Monitoring Program, Sacramento County 1988-2002 Land Use Summary.

Intent: In recent years productive cropland has been increasingly converted to urban uses. Between 1988 and 2002, nearly 22,000 acres of farmland and approximately 12,000 acres of grazing land were converted to urban uses.⁶ From the agricultural perspective, as conversion of productive farmland continues, it permanently commits this land to a nonproductive category. To curb this decline and protect soil productivity, policies to preserve agriculturally productive lands within the County need to be instigated. Due to the pressures of population growth, development, and economic expansion, maintaining the current inventory of farmland is not feasible. However, mitigation of farmland loss, whenever possible, is justified when development sets in motion processes which lead to additional conversion of nearby lands. As also referenced in the Agricultural Element, protection for the loss of prime, statewide importance, unique and local importance soils (as classified by the California Department of Conservation) is extremely important to help maintain the viability of agricultural in Sacramento County. Policy AG-5 in the Agricultural Element requires that projects resulting in the conversion of more than fifty (50) acres of specific farmland categories shall be mitigated at a 1:1 ratio.

Promoting farm practices that encourage conservation and preservation of productive soils is the primary responsibility of the NRCS. The goal of the NRCS, through research, technical assistance, financial aid, and public workshops, is to instill in agricultural land owners knowledge of sound soil management practices. The role of the County in this effort is limited. However, by working together with the NRCS towards their goal to preserve and protect soils throughout the area, the County can identify soil conservation as a priority when setting policy. To this end the County should work with the NRCS to promote wise and conservative use of productive soils.

Health and Safety Code Section 40724.5 (added by SB 700) requires the Sacramento Metropolitan Air Quality Management District (SMAQMD) to adopt a rule to reduce emissions of particulate matter (PM) from agricultural practices such as tilling, discing, cultivation, and raising of animals. SMAQMD plans to adopt a rule to limit fugitive dust emissions from agricultural-related activities.⁷

Policies:

- CO-51. Direct development away from prime or statewide importance farmlands or otherwise provide for mitigation as required by AG-5 slowing the loss of additional farmland conversion to other uses.
- CO-52. Recreational uses shall not be constructed on prime, statewide importance, unique or local farmland outside of the Urban Services Boundary where the use would impede agricultural practices.

⁶ California Department of Conservation Farmland Mapping and Monitoring Program, Sacramento County 1988-2002 Land Use Summary.

⁷ Information from Peter Christensen, SMAQMD, July 2006.

CO-53. Encourage BMP's and appropriate soil conservation practices regularly utilized by farmers and ranchers.

Implementation Measures:

- A. Protect farmland in the County designated as prime, statewide importance, unique and local importance to mitigate loss of agriculturally productive acreage. (PLANNING & ENVIRONMENTAL REVIEW, ECONOMIC DEVELOPMENT, AGRICULTURAL COMMISSIONER)
- B. Designate prime, statewide importance, unique and local importance farmland on Community Plan maps. (PLANNING & ENVIRONMENTAL REVIEW)
- C. Institute soil and water conservation measures on County owned lands, including but not limited to, erosion control devices, grazing schedule, seasonal planting of nitrogen fixing plants, and reintroduction of native bunch grasses. (REGIONAL PARKS, AIRPORTS)
- D. In consultation with Natural Resource Conservation Service staff, design interpretive display at an appropriate park site demonstrating sound soil conservation management practices. (REGIONAL PARKS)
- E. Work with SMAQMD to limit fugitive dust emissions from agricultural-related activities, consistent with Health and Safety Code Section 40724.5. (PLANNING & ENVIRONMENTAL REVIEW, AGRICULTURAL COMMISSIONER)

Oxidation of Delta Soils

Objective: Agriculturally productive Delta soils protected from the effects of oxidation, shrinkage, and erosion.

Intent: Cultivation on prime Delta farmland soils produces a high yield of crop commodities. However, crop production has also encouraged subsidence of the agricultural land and surrounding levees, threatening production on some Delta islands. The peat soils of the Delta, comprised of slow-to-decay organic material continually submerged, can shrink in volume by as much as 50 percent when exposed to the drying factors associated with air. This process, called oxidation, is the primary contributing factor to subsidence of Delta crop lands and has the potential to significantly alter agricultural production, which is the area's most important economic activity. In addition, Delta soils have been identified as highly erodible by the NRCS. Cultivation of such land owned by farmers receiving crop subsidies from the federal government is supposed to be regulated under provisions of the 1985 Farm Bill. However, current regulatory procedures only require documentation of agricultural management practices and have not had a significant effect in reducing oxidation of Delta soils.

To retard peat oxidation, minimal tillage, the practice of reducing repetitive cultivation, should be instigated to lessen soil loss from erosion and shrinkage. In addition, consideration should be given to significantly curtailing cultivation on islands adjacent to Suisun Bay to preserve their effectiveness as a buffer between up-Delta islands and the erosional forces of Bay tidal action.

Policies:

CO-54. Curtail tillage of peat-rich Delta soils to retard erosion and subsidence, and protect the agricultural productivity of Delta islands.

Implementation Measures:

- A. In conjunction with the U.S. Geological Survey (USGS) and the State of California's Department of Water Resources (DWR) continue monitoring subsidence in zones of organic material. (PLANNING & ENVIRONMENTAL REVIEW)
- B. In conjunction with Natural Resource Conservation Service [NRCS] and the associated Lower Cosumnes Resource District, present workshops or other similar public format programs to Delta residents regarding soil and water conservation measures appropriate to maintaining the area's agricultural viability. (AGRICULTURAL COMMISSIONER)

Resource Conservation District Program

Objective: Widespread farmer participation in Resource Conservation District programs.

Intent: Resource Conservation Districts are "special districts" of the state of California, created under Division 9 of the California Public Resources Code. Areas in Sacramento County are Sloughhouse, Florin and the Lower Cosumnes resource conservation districts. These identities serve approximately sixty percent of the county and address natural resource concerns and issues within each jurisdiction. They are locally governed agencies with their own locally appointed or elected board of directors. To provide technical or funding assistance to cooperators, Sacramento County RCDs rely on NRCS and partnerships with other groups and agencies⁸.

Membership and participation in the Resource Conservation District program provides area farmers and other landowners with readily available expertise in land stewardship. Programs have expanded to include education for urban residents and small landowners. The most recent long range work plan (years 2000-2005) for the Sacramento County RCDs identifies flooding, watershed outreach, conservation education, private property rights and regulation awareness weed management, water quality impaired by erosion and sedimentation, urban stream restoration and land subsidence/wildlife habitat enhancement as primary issues to be addressed in the coming years.⁹

⁸ From Sacramento County Resource Conservation Districts website: <http://www.carcd.org/wisp/florin/lr-plan.htm>

⁹ From Sacramento County Resource Conservation Districts website: <http://www.carcd.org/wisp/florin/lr-plan.htm>

Policies:

- CO-55. Support Resource Conservation Districts to promote soil and water conservation practices.
- CO-56. Support regional education and outreach efforts regarding local soil quality and the relevant current issues.

Implementation Measures:

- A. Assist in preparing documents to seek LAFCO's approval for a Resource Conservation District in Natomas area. (AGRICULTURAL COMMISSIONER)
- B. Work with existing Resource Conservation Districts to inform and educate urban residents and small landowners on soil and water conservation practices. (AGRICULTURAL COMMISSIONER).

Topsoil Mining

Objective: Mining of top soil to have minimal effect on soil productivity.

Intent: Top soil mining of productive soils in flood plain areas has little effect on soil productivity, provided that extraction methods do not remove more than the top 12 inches of soil. Flood plain soils, where such mining typically occurs, are generally 10 feet or more in thickness. However, the most productive layer of soil, based on organic content, is found within the top two feet of the soil profile. Mining of soils deeper than one foot decreases crop productivity by removing a major portion of the soil layer considered most productive. As mentioned in the introduction, long term productivity of soils helps maintain agricultural viability for future generations and can include preventative measures against erosion and oxidation. Although top soil mining has little effect on soil productivity, environmentally unsound surface mining and reclamation methods can be detrimental to topographic definition and hydrologic processes. See Surface Mining document for policies regarding resource extraction methodologies.

Policy:

- CO-57. In areas where top soil mining is permitted, it shall be done so as to maintain the long-term productivity of the soil.

SACRAMENTO COUNTY GENERAL PLAN CONSERVATION ELEMENT

SECTION V

VEGETATION AND WILDLIFE

Introduction

Sacramento County is home to a variety of important vegetation and wildlife. Natural habitats in the County include vernal pools, wetlands, special status species habitats, riparian, oak woodland and grassland prairies. Wetland and riparian areas in the County include historic backwater basins along the Sacramento River, the American River Parkway, and the nationally significant valley oak riparian forest along the lower Cosumnes River. The Beach/Stone Lakes area, a designated National Wildlife Refuge, hosts thousands of waterfowl migrating along the Central Valley leg of the Pacific Flyway. The area is a dynamic and vigorous habitat supporting, among other species, American white pelican, great blue heron, northern harrier, coyote, grey fox, beaver, and possibly bobcat. The County's American River Parkway, bisecting the urban environs, has protected a vibrant riparian forest stretching along the lower American River. The undammed Cosumnes, exemplary of what was once expansive woodlands, represents a comparatively unaltered Central Valley ecosystem with slough, wetland, and riparian habitats, each slightly different in its ecological balance. Other significant wetland and riparian areas exist along Delta sloughs and seasonal creeks flowing into the major drainages. Sacramento County is home to a variety of native tree and grassland habitats. The native tree habitats are defined as oak woodlands, oak savannah, and mixed riparian woodlands and the dominant grassland habitat being that of the California Prairie. These vegetative habitats are very important to the future of Sacramento County; however, due to the combined effects of urbanization, agricultural conversion, overgrazing, the introduction of invasive plant and wildlife species, climatic changes, and fuel wood harvesting, California's native vegetation have been unable to maintain existing populations.

The preservation and restoration of the diverse habitats located throughout the County is extremely important to help support ecosystem processes and functions. Each habitat type or plant community must be conserved to maintain a viable, self-perpetuating ecosystem. For instance, not only do nesting sites need to be preserved for the Swainson's Hawk, but foraging habitat must also be protected to provide a viable food source. A full range of native biodiversity, maintained in an integrated manner, helps promote sustainable habitat and wildlife populations. Large landscape level preserves interconnected by habitat corridors are increasingly recognized as the most effective method to protect species by preserving ecological landscapes.

This section addresses policies to help preserve and restore vegetation and wildlife throughout Sacramento County, including ways to ensure that these important natural resources are given adequate attention in development projects and master planning efforts. The Open Space Element describes additional protection measures and provides a management/acquisition

strategy for continued preservation and protection of the County's valuable natural resource habitats.

Habitat Protection and Management

GOAL: Preserve and manage natural habitats and their ecological functions throughout Sacramento County.

Increased pressures on natural areas caused by development have demonstrated the need for more careful consideration of the conservation of local vegetation and wildlife resources. This section addresses habitat protection, mitigation and management policies and implementation measures that apply to natural habitats throughout the County.

When evaluating these habitats, it is important to remember the different needs and purposes of urban versus rural habitats. Urban habitats, for the most part, have been greatly impacted by development pressures and must strike a balance between pragmatic needs for humans while still preserving ecosystem processes for valuable resources. Rural habitats, on the other hand, play a critical role in the protection of landscape level ecosystem processes. For instance, the urban forest provides ornamentation, shading and shelter. Albeit some wildlife habitat is provided, this is very limiting in size and species that can benefit from urban areas. Vegetative species that may not be desirable in a rural setting to enhance the natural ecosystem, can serve a positive purpose in an urban setting. This is an important differentiation in deciding what vegetative species should be planted. In the rural areas of the County, regeneration of oak woodlands helps to maintain this natural landscape. Likewise, the rural areas should be enhanced with native vegetative species to that area. In this way, we can strive to increase the ecosystem functions of our native habitats. These needs and purposes should be kept in mind when looking at habitat protection, mitigation and preservation in urban and rural areas.

Habitat Mitigation

Objective: Mitigate and restore for natural habitat and special status species loss.

Intent: Habitat mitigation helps to minimize the impacts on natural resources from development activities either through replacement of a resource or via other means of compensation. Mitigation is a tool that is widely used by federal, state and local agencies as well as being required through the CEQA process.

Mitigation actions should maintain species and habitat heterogeneity by providing permanently protected areas across a species' range. Mitigation should occur within close proximity to the impact to protect that portion of a species population that is being impacted. By preserving land within Sacramento County valuable open space will be provided for the enjoyment and use of citizens that live within the County.

In addition to identifying resources for mitigation, it is important to ensure that these resources are properly restored and maintained. Habitat restoration plans help to establish ongoing monitoring and management for these mitigation resources.

The policies below outline what types of mitigation should occur for different resources throughout the County, tools for creating and managing mitigation banks and the need for habitat restoration plans.

Policies:

CO-58. Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.

CO-59. Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function:

- vernal pools,
- wetlands,
- riparian,
- native vegetative habitat, and
- special status species habitat.

CO-60. Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps (please refer to the Open Space Element).

CO-61. Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

CO-62. Permanently protect land required as mitigation.

Implementation Measures:

A. Develop standards and requirements for all habitat restoration plans. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)

B. Develop a program to examine potential benefits of utilizing stream corridors for off-site mitigation of upland development. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

C. Habitat restoration plans for projects shall be reviewed and approved prior to the final project approval and must be consistent with the currently accepted scientific methods. (PLANNING & ENVIRONMENTAL REVIEW)

- D. Provide effective maintenance, monitoring, and reporting for all habitat restoration plans that meet established USFWS and/or USEPA requirements. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- E. Coordinate with other local jurisdictions and County departments to direct mitigation to appropriate locations on the Open Space Vision component maps. (PLANNING & ENVIRONMENTAL REVIEW)
- F. With cooperation from the project applicants, produce a performance report at the end of year 5 and 10 of habitat restoration plans detailing the performance of the restoration plantings since the inception of mitigation. (PLANNING & ENVIRONMENTAL REVIEW)

Habitat Preserve and Management

Objective: Establish and manage a preserve system with large core and landscape level preserves connected by wildlife corridors throughout Sacramento County to protect ecological functions and species populations.

Intent: Several preserve areas are identified on the County’s Land Use Diagram including Stone Lakes Preserve, the Sacramento Valley Vernal Pool Prairie Preserve, Cosumnes River Preserve, and Deer Creek Hills Preserve. These preserves set aside valuable ecological resources and, in some cases, provide recreational opportunities. Established preserves also help protect these resources from encroaching urbanization. The section below addresses the need to support the continued creation of preserves in the County and how best to handle their ongoing management. Preserves are identified as Resource Conservation Areas on the General Plan Land Use Diagram.

As explained in the glossary of this Plan, adaptive management is a scientific approach to resource management that combines management, monitoring and research to effectively manage complex ecosystems.¹⁰ This section also calls for an inventory of resources to be completed every five years. These inventories can establish a baseline to be able to measure success of preservation efforts as well as impacts to these resources from development.

Policies:

- CO-63. Vernal pools, wetlands, and streams within identified preserves shall not be drained, excavated, or filled for the purpose of converting the land to another use. If fill or modification is required for Drainage Master Plans, stormwater quality or levee

¹⁰ Atkinson, A. J., P. C. Trenham, R. N. Fisher, S. A. Hathaway, B. S. Johnson, S.G. Torres, and Y. C. Moore. 2004. Designing monitoring programs in an adaptive management context for regional multiple species conservation plans. U.S. Geological Survey Technical Report. USGS Western Ecological Research Center, Sacramento, CA. 69 pages.

maintenance, creation or restoration of an equal amount must occur within the boundaries of the preserve to achieve no net loss consistent with policy CO-58.

- CO-64. Consistent with overall land use policies, the County shall support and facilitate the creation and biological enhancement of large natural preserves or wildlife refuges by other government entities or by private individuals or organizations.
- CO-65. Create a network of preserves linked by wildlife corridors of sufficient size to facilitate the movement of species.
- CO-66. Mitigation sites shall have a monitoring and management program including an adaptive management component including an established funding mechanism. The programs shall be consistent with Habitat Conservation Plans that have been adopted or are in draft format.
- CO-67. Preserves and conservation areas should have an established funding mechanism, and where needed, an acquisition strategy for its operation and management in perpetuity. This includes existing preserves such as the American River Parkway, Dry Creek Parkway, Cosumnes River Preserve and other plans in progress for riparian areas like Laguna Creek.
- CO-68. Preserves shall be planned and managed to the extent feasible so as to avoid conflicts with adjacent agricultural activities (Please also refer to the Agricultural Element).
- CO-69. Avoid, to the extent possible, the placement of new major infrastructure through preserves unless located along disturbed areas, such as existing roadways.

Implementation Measures:

- A. Complete an inventory of the following resources, and update every five (5) years:
- riparian habitat;
 - seasonal and permanent wetland habitat; and
 - vernal pools. (PLANNING & ENVIRONMENTAL REVIEW)
- B. Adopt a zoning ordinance creating a Natural Preserve zone which would permit agricultural and passive recreation uses, subject to consistency with Plan policies, and apply to designated natural preserves. (PLANNING & ENVIRONMENTAL REVIEW)
- C. Review, coordinate and modify development and management plans for areas identified as natural preserves that are publicly owned and amend as appropriate. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS, DWR, WASTE MANAGEMENT AND RECYCLING)

- D. Work with state and federal resource agencies to identify opportunities for establishing and maintaining preserves, consistent with adopted or draft Habitat Conservation Plans and state and federal recovery plans. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- E. Identify and restore watershed areas deemed to be in ecological distress. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- F. Prepare monitoring and management programs including adaptive management protocols that are consistent with adopted or draft Habitat Conservation Plans for preserved areas. (PLANNING & ENVIRONMENTAL REVIEW)
- G. Prepare procedures in cooperation with local fire districts for maintaining fire protection within natural stream and river corridors and all preserves. (PLANNING & ENVIRONMENTAL REVIEW, DWR, REGIONAL PARKS)
- H. In cooperation with appropriate agencies, incorporate habitat restoration objectives and programs into policy plans addressing recreational and natural resource areas, including but not limited to, the:
- American River Parkway Plan;
 - Master Plan for Dry Creek Parkway;
 - Floodplain Management Plans for creeks;
 - Cosumnes River Preserve;
 - Laguna Creek;
 - Sacramento River; and
 - Deer Creek Hills
(PLANNING & ENVIRONMENTAL REVIEW, DWR, REGIONAL PARKS)
- I. Identify local land trusts that are appropriate to hold land and identify funding sources for the acquisition of land and the preparation of monitoring, management, and adaptive management plans for protected lands within Sacramento County. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS, WASTE MANAGEMENT AND RECYCLING, DWR)

Habitat Protection and Project Review

Objective: Review development plans and projects to ensure a balance between essential growth needs and the protection and preservation of natural habitats and special status species.

Intent: When a project is designed in concert with natural features, significant environmental impacts can be minimized. Addressing natural features early in the planning processes helps to integrate these resources into projects while minimizing delays to project implementation. The policies and implementation measures below address the important role that Sacramento County's habitat and wildlife should play during discretionary review.

Policies:

CO-70. Community Plans, Specific Plans, Master Plans and development projects shall:

- include the location, extent, proximity and diversity of existing natural habitats and special status species in order to determine potential impacts, necessary mitigation and opportunities for preservation and restoration.
- be reviewed for the potential to identify nondevelopment areas and establish preserves, mitigation banks and restore natural habitats, including those for special status species, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of wetland habitat.
- be reviewed for applicability of protection zones identified in this Element, including the Floodplain Protection Zone, Stream Corridor Ordinance, Cosumnes River Protection Combining Zone and the Laguna Creek Combining Zone.

CO-71. Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain,
- Ensuring development adjacent to stream corridors and vernal pools provide, where physically reasonable, a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry.
- Projects adjacent to rivers and streams shall integrate amenities, such as trail connectivity, that will serve as benefits to the community and ecological function.

- Siting of wetlands near residential and commercial areas should consider appropriate measures to minimize potential for mosquito habitation.
- Development adjacent to stream corridors and vernal pools shall be designed in such a manner as to prevent unauthorized vehicular entry into protected areas.

CO-72. If land within river and stream watersheds in existing agricultural areas is developed for non-agricultural purposes, the County should actively pursue easement dedication for recreation trails within such development as a condition of approval.

CO-73. Secure easement or fee title to open space lands within stream corridors as a condition of development approval.

CO-74. Evaluate feasible on-site alternatives early on in the planning process and prior to the environmental review process that reduce impacts on wetland and riparian habitat and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria.

Implementation Measures:

A. Require that Community Plans, Specific Plans, Master Plans and development projects:

- Include a complete inventory of seasonal and permanent wetlands, natural habitats and special status species. (PLANNING & ENVIRONMENTAL REVIEW)
- Identify suitable habitat for special status species in conjunction with State and Federal Resource Agencies. (PLANNING & ENVIRONMENTAL REVIEW)
- Where applicable, in cooperation with SAFCA, develop a tree plan that lists a specific baseline of river and upland species trees that can be supported by the substrate for the specific geographic area. (REGIONAL PARKS)
- Address ownership and maintenance of dedicated/reserved parcels as follows:
 - Prior to the adoption of a Community Plan, Specific Plan or Master Plan or filing of a final map for a development project, ownership and maintenance for any dedicated/reserved parcels must be identified, including appropriate funding mechanisms. (PLANNING & ENVIRONMENTAL REVIEW, COUNTY ENGINEERING)
 - Dedicated/reserved parcels with natural resource values will be placed in an in perpetuity easement with an organization acceptable to County Planning prior to filing of a final map. (PLANNING & ENVIRONMENTAL REVIEW, COUNTY ENGINEERING)

- Dedicated/reserved parcels for schools, fire stations and other community services must have identified ownership, a management plan and a funding mechanism. (PLANNING & ENVIRONMENTAL REVIEW, COUNTY ENGINEERING)

B. In cooperation with the Sacramento-Yolo Mosquito & Vector Control District (SYMVCD), siting and design of wetlands near residential and commercial areas should consider the SYMVCD Best Management Practices and the County's Stormwater Quality Design Manual. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Special Status Species and Their Respective Habitats

GOAL: Preserve, enhance and restore special status species habitat in Sacramento County to aid in the recovery of these species.

In this document, the term "special status" refers to threatened, endangered, species of concern, and species of special concern listed by the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife and the California Native Plant Society. State and local biologists view most threatened (defined as likely to become endangered without special protection) and endangered (in danger of extinction) species populations as declining, signaling a continuing degradation in the quality of the County's ecosystems.

Sacramento County is positioned geographically to include a large portion of the Pacific Flyway for many migratory bird species. In addition, Sacramento County possesses species listed by the California Native Plant Society as being in danger of extinction. The County's riparian environs along the Sacramento, American, and Cosumnes Rivers and other drainages provide some of the most important habitat areas for threatened and endangered species.

Protection of Special Status Species Habitat

Objective: Protect and maintain habitat for special status species.

Intent: Many policies throughout this Element and the Open Space Element focus on the preservation of habitat. However, habitat protection must not be the only focus of efforts to protect special status species. There remains the need to identify specific habitats which meet the specialized requirements of special status threatened and endangered species, assess the potential for reintroduction of special status species, encourage state and federally sponsored population recovery programs, aiding in the recovery of special status species and provide for interlinking habitats with natural corridors. Such intervention prior to significant further decline in population can increase propagation, ensure genetic diversity, and ultimately remove the need for protected status.

Policies:

CO-75. Maintain viable populations of special status species through the protection of habitat in preserves and linked with natural wildlife corridors.

- CO-76. Habitat conservation plans shall be adopted by the County to provide a comprehensive strategy to protect and aid in the recovery of special status species.
- CO-77. Development of open space acquisition programs within natural areas shall consider whether the area is occupied by special status species.
- CO-78. Plans for urban development and flood control shall incorporate habitat corridors linking habitat sites for special status species. (Please also refer to the Open Space Element for related policies.)

Implementation Measures:

- A. Coordinate with the State and Federal Resource Agencies and SAFCA in planning and developing programs to encourage species recovery. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW, WASTE MANAGEMENT AND RECYCLING, DWR)
- B. Assist habitat management programs in conjunction with State and Federal Resource Agencies aimed at responding to declining populations of special status species. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- C. In conjunction with State Resource Agencies, monitor populations of special status species utilizing available resources. (PLANNING & ENVIRONMENTAL REVIEW)

Manage Lands for Special Status Species

Objective: Manage and maintain special status species and their respective habitat in a manner that resolves conflicts with adjacent privately owned-land and agricultural operations.

Intent: Proper management and maintenance of special status species habitats must include minimizing potential impacts from activities that may be detrimental to these species, such as active recreation, levee protection measures, and development. Wildlife preserves, native grassland propagation, riparian area protection, and natural area buffer zones should be given priority over recreation, ranching, channelization, and development expansion in areas known to or having the potential to contain special status species.

Policies:

- CO-79. Manage vegetation on public lands with special status species to encourage locally native species and discourage nonnative invasive species.
- CO-80. Control human access to sensitive habitat areas on public lands to minimize impact upon and disturbance of special status species.

CO-81. Protect sensitive habitat areas on public lands and seek agreements with adjacent property owners to reduce/minimize pesticide and other similar chemical applications.

CO-82. Ensure that mosquito control measures have the least effect on non-target species.

Implementation Measures:

- A. In conjunction with State and Federal Agencies, determine sensitive habitat areas containing special status species and develop appropriate management. (PLANNING & ENVIRONMENTAL REVIEW)
- B. In conjunction with the Sacramento-Yolo Vector Control District, seek easements or agreements which would limit aerial pesticide spraying within 1/4 mile of sensitive habitat areas located on public and preserved lands and containing special status species. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS, AGRICULTURAL COMMISSIONER)
- C. The County shall work with the mosquito abatement district to ensure that mosquito control measures having the least effect on non-target species are implemented in preserved wetlands throughout the County. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- D. Identify funding mechanisms via state or federal grant processes to allow either acquisition of sensitive habitat or development of restoration projects in concert with the willingness of the landowner. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)

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SACRAMENTO COUNTY GENERAL PLAN CONSERVATION ELEMENT

SECTION VI

AQUATIC RESOURCES

GOAL: Preserve, protect, and manage the health and integrity of aquatic resources in Sacramento County.

Aquatic resources in Sacramento County include vernal pools, wetlands, rivers, streams, creeks, riparian habitat, in-channel habitat, fisheries and their macroinvertebrate food sources. Protection of these resources from impacts related to development is critical due to their importance to wildlife habitat, water purification, scenic values, and unique and sensitive plant life. Many preservation efforts are currently underway to protect and restore aquatic resources and include the South Sacramento Habitat Conservation Plan, the American River Parkway Plan, the Dry Creek Master Plan, the Sacramento River Floodway Corridor Planning Forum, the Cosumnes River Preserve and the Upper Laguna Creek Collaborative. However, as the County continues to see growth and development, expanded and new preservation measures must be achieved to ensure the health and integrity of these valuable resources.

Vernal Pools

GOAL: Preserve and enhance self-sustaining vernal pool habitats.

Vernal pools are depressions on the landscape that collect seasonal rains and are supported by a unique hydrological regime. This results in a habitat that supports a unique and specialized group of plant and animal species, some identified as special status species. Spring brings a burst of tiny flowering plants encircling the pools, which are also used by waterfowl, wading birds, and terrestrial animals. Typically, semi-impermeable soil underlies most vernal pools and restricts downward percolation of collected water. As a result, pool water slowly evaporates during the warming spring months and by summer the shallow basins are often well defined, but dry.

Today only scattered remnants of this once-expansive resource remain. Reduced vernal pool habitat threatens the continued existence of the many dependent plant and animal species living within them and reduces habitat for migratory waterfowl, shorebirds, and wading birds. Currently the greatest impacts to vernal pool habitat are residential, commercial, and industrial development in areas with extensive natural open space.

Vernal Pools Preserves

Objective: Establish vernal pool preserves that enhance and protect the ecological integrity of vernal pool resources.

Intent: Vernal pools are worthy of protection for their unique plant and animal life, age, and seasonal habitat benefits. A viable and biologically successful vernal pool preservation program should preserve a diverse range of vernal pool types. This can be accomplished by preserving vernal pools across several different geologic landforms and by preserving a representative portion of pool complexes of varying densities.

The policies below give guidance for creating a network of vernal pool preserves, including prioritizing sites based on evaluation criteria and identifying pressures detrimental to the resource.

Policies:

- CO-83. Preserve a representative portion of vernal pool resources across their range by protecting vernal pools on various geologic landforms, vernal pools that vary in depth and size, and vernal pool complexes of varying densities; in order to maintain the ecological integrity of a vernal pool ecosystem.
- CO-84. Ensure that vernal pool preserves are large enough to protect vernal pool ecosystems that provide intact watersheds and an adequate buffer, have sufficient number and extent of pools to support adequate species populations and a range of vernal pool types.
- CO-85. Utilize proper vernal pool restoration techniques as approved by United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) and the Army Corps of Engineers (CORPS).
- CO-86. Limit land uses within established preserves to activities deemed compatible with maintenance of the vernal pool resource, which may include ranching, grazing, scientific study and education.

Implementation Measures:

- A. Work with state and federal resource agencies to identify, evaluate, and rank candidate vernal pool preserve sites. This shall include identifying opportunities for establishing and maintaining vernal pool preserves that encompass all vernal pool types across all geologic formations. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- B. Utilize evaluation criteria as prescribed by the Vernal Pool Conservation Strategy prepared for the South Sacramento HCP when establishing vernal pool preserves (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS).

- C. Utilize the “Vernal Pool Habitat Analysis” section of the South Sacramento Habitat Conservation Plan, or comparable analysis, to evaluate feasible on-site alternatives that reduce impacts on vernal pools and provide effective on-site preservation. (PLANNING & ENVIRONMENTAL REVIEW)

Rivers and Streams

GOAL: Preserve, protect, and enhance natural open space functions of riparian, stream and river corridors.

Sacramento County is traversed by a multitude of naturally occurring water courses. Rivers located in the County include the Sacramento, American, Cosumnes and Mokelumne. Streams are located in both the urban and rural areas of the County. Urban and urbanizing streams are those located within the Urban Services Boundary. In addition, urban stream corridors include streams that are considered jurisdictional waters by the U.S. Army Corp of Engineers. In much of the urban area, these rivers, creeks, streams, and tributaries are the only significant natural areas containing open space and associated values. Urban streams found in the northeast section of the County flow through a developed urban landscape and are zoned (NS) to protect natural features and regulate fill to preserve flood control values. Urbanizing streams occur predominantly south of the American River, have wider floodplains, and meander through relatively flat terrain. Much of the property adjacent to these stream corridors are within areas planned for urban development. These streams include Morrison, Elder, Laguna Creeks and Dry Creek in Rio Linda, north of the American River. Rural streams are those located outside of the Urban Services Boundary.

Preservation of floodplain, water quality, recreation, and habitat values of river and stream corridors is increasingly important. Natural floodplains provide necessary drainage and storage of water during storm runoff, minimizing flooding impacts of most seasonal storms. Decreasing our floodplains however, we decrease safe storage of water in those areas. Recreational attributes of river and stream corridors provide walking, hiking, bicycling, and nature observation opportunities. Such activities are appropriate with the natural character of stream corridors and have minimal impact upon wildlife. Habitat values of river and stream corridors are beneficial to wildlife allowing healthy interaction between species, broadening feeding ranges and breeding opportunities, and maintaining genetic diversity. Habitat corridor preservation is increasingly recognized as the most effective method to protect species by preserving ecological landscapes.

A multi-functional approach for our rivers and streams can help to meet the preservation needs listed above. These corridors can accommodate flood flows, wetlands, contiguous recreation trails, stream, wetland & upland vegetation and provide for ecological function, water quality benefits and neighborhood amenities.

Several efforts utilizing this multi-functional approach are currently underway and include: the Sacramento River Corridor Floodway Planning Forum, the American River Parkway Plan, the Cosumnes River Preserve and the Upper Laguna Creek Collaborative. These efforts are described in more detail in the related subsections that follow.

The following policies and implementation measures outline ways to protect the many functions of our waterways. Topics covered include riparian corridors, limitation of fill in floodplains, bank stabilization, protection of rivers, channel modifications, land use adjacent to rivers and streams, maintenance of rivers and streams, and restoration of rivers and streams.

Riparian Habitat

Objective: Manage riparian corridors to protect natural, recreational, economic, agricultural and cultural resources as well as water quality, supply and conveyance.

Intent: Riparian habitat occurs adjacent to streams, creeks and rivers and supports high levels of biological diversity. In addition, riparian corridors can assist in protecting water quality, water supply and conveyance. Shaded riverine aquatic habitat (SRA) is the habitat along a waterway that shades the water. Shading the waterway helps moderate water temperatures in the summer, keeping water temperatures cooler for fish and other aquatic species. Cool temperatures are critical for the spawning of fish. SRA can also provide in-channel habitat for spawning and refuge from predators.

The policies and implementation measures that follow address the need to protect, enhance and restore riparian habitat.

Policies:

- CO-87. Encourage private landowners to protect, enhance and restore riparian habitat.
- CO-88. Where removal of riparian habitat is necessary for channel maintenance, it will be planned and mitigated so as to minimize unavoidable impacts upon biological resources.
- CO-89. Protect, enhance and maintain riparian habitat in Sacramento County.
- CO-90. Increase riparian woodland, valley oak riparian woodland and riparian scrub habitat along select waterways within Sacramento County.
- CO-91. Discourage introductions of invasive non-native aquatic plants and animals.
- CO-92. Enhance and protect shaded riverine aquatic habitat along rivers and streams.

Implementation Measures:

- A. Assess riparian ecosystems resources in order to identify areas for enhancing protecting riparian vegetation to effectively increase the aquatic and terrestrial ecosystem functions. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW, DWR)
- B. Identify locations for riparian habitat restoration and creation including those areas that can support a shaded riverine aquatic habitat that may be enhanced in conjunction with development projects, flood control or federally/state mandated species protection projects. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW, DWR)
- C. Develop a plan to create and restore riparian habitat. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW, DWR)
- D. Develop outreach materials that encourage and educate land owners as to the benefits of intact riparian ecosystems. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW, DWR)

Limitation of Fill in Floodplains

Objective: Maintain the natural character of the 100-year floodplain by limiting fill and excavation.

Intent: Drainage capacity and hydrologic character of streams can be significantly changed by urban development. In the County's Zoning Code, the 100-year floodplain is defined as the area adjoining a river, stream, or watercourse which is subject to inundation by the 100-year flood, or that which has a 1% chance of flooding every year. Land filling of floodplains and increased impervious surface areas associated with urbanization cause alterations in the hydrology, hydraulics, and flood flow capacity of stream channels. To protect the natural character of the floodplain, programs must be implemented which control or eliminate fill within the 100-year floodplain. The objective is to rely predominantly on the natural character of the floodplain to carry future flood flows. In addition, developing an enforcement program to help limit illegal fill will also assist in preserving the floodplains. Please refer to the Safety Element (Flood section) and the Land Use Adjacent to Rivers and Streams section of this Element for additional policies.

Policies:

- CO-93. Discourage fill in the 100-year floodplain (Please also refer to CO-117).
- CO-94. Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks or rivers shall be:
- Consistent with policies to protect wetlands and riparian areas; and
 - Limited to land uses that can support seasonal inundation.

CO-95. Development within the 100-year floodplain should occur in concert with the development of the Floodplain Protection Zone (please refer to Land Uses Adjacent to Rivers and Streams for information on this Zone).

Implementation Measures:

- A. Develop an enforcement program to address fill in the 100-year floodplain by modifying County Code Chapters 16.44.050(1) and 16.18.401 to outline illegal fill and stream blockages as nuisances. (PLANNING & ENVIRONMENTAL REVIEW, DWR, COUNTY COUNSEL)
- B. Review all development projects for fill policy compliance. (PLANNING & ENVIRONMENTAL REVIEW, DWR, COUNTY ENGINEERING)

Bank Stabilization

Objectives: Maintain levee protection, riparian vegetation, function and topographic diversity by stream channel and bank stabilization projects.

AND

Stabilize riverbanks to protect levees, water conveyance and riparian functions.

Intent: Bank stabilization has a variety of benefits, including protecting levees, water conveyance and riparian functions. The U.S. Army Corps of Engineers and various reclamation districts undertake levee maintenance and stabilization for flood control. Maintenance and stabilization of levees involves repair of erosion damage, placement of slope protection cover, and riparian vegetation removal, control, and strategic planting. In some cases current stabilization methods have proven inadequate to protect levees from erosional forces, such as wave action generated from wind and boat wakes. The erosive force of waves is a major factor destabilizing some Delta levees. To decrease the impact of wave generated erosion and lengthen the effective life of levees, erosive wake activity should be curtailed, especially in areas identified as highly erodible.

Dependence upon conventional levee construction and stream channel and bank stabilization methods, such as riprapping, has destroyed much riparian habitat and reduced the biological productivity of in-stream and bankside plant and animal species. Measures to enhance fisheries and the riparian environment should play an important role in stream channel and bank stabilization projects. Riparian habitat and vegetation, while providing food, breeding, and nesting sites for a plethora of riparian fauna, can also moderate the erosive force of flood waters. The intent of these policies is not to enhance riparian values at the expense of sound flood control management. However, whenever possible, biotechnical or non-structural alternatives should be considered in place of conventional methods of flood control.

Policies:

- CO-96. Reduce dependence on traditional levee protection methods where those methods conflict with habitat preservation efforts and where alternate methods exist which are compatible with preservation efforts and offer an acceptable level of bank stabilization.
- CO-97. Work with appropriate regulatory agencies to reduce bank and levee erosion by minimizing erosive wake activity generated by recreational and commercial boating.
- CO-98. Coordinate with federal, state and local agencies overseeing levee and bank stabilization to investigate and, whenever possible, utilize biotechnical or non-structural alternatives to other conventional stabilization methods.
- CO-99. Encourage habitat restoration and recreational opportunities as an integral part of bank and levee stabilization efforts.
- CO-100. Encourage construction of structures for flood control and stormwater quality purposes using currently approved scientific methods to prevent erosion and stabilize the banks.
- CO-101. Stabilize the banks of rivers and streams in a manner that increases flood protection and increases riparian habitat functions.

Implementation Measures:

- A. In cooperation with SAFCA and flood control districts, determine the extent of bank erosion and undercutting of vegetation along Delta Sloughs, American and Sacramento Rivers and identify priority areas for no-wake speed protection. (REGIONAL PARKS)
- B. Integrate biotechnical and non-structural alternatives associated with bank and levee stabilization methods. (DWR)
- C. In coordination with the Sacramento Tree Foundation and SAFCA, plant appropriate native trees, shrubs, and native grasses along waterways if advantageous to stabilize the shoreline and enhance riparian habitat, without disruption to levees, flood conveyance and maintenance, or creating hazards to navigation. (DWR, REGIONAL PARKS)
- D. Enforce no-wake laws. (SHERIFF)
- E. Post vandal-resistant, no-wake zones along all County navigable waterways, where wave action is undercutting levees. Place notices of enforcement laws at all marinas and replace both as necessary on a semiannual basis. (SHERIFF, REGIONAL PARKS)

Protection of Rivers

Objective: Conserve and protect the Sacramento, Cosumnes, Mokelumne and American Rivers to preserve natural habitat and recreational opportunities.

Intent: Rivers located within Sacramento County include the Sacramento, Cosumnes, Mokelumne and American. Several efforts and plans currently exist to protect these important waterways. Sacramento County entered into a Memorandum of Understanding in 2002 with several other jurisdictions to create the Sacramento River Corridor Floodway Planning Forum. This forum was tasked with developing a floodway management plan for the Sacramento River corridor that would include recommendations on sound flood control management goals and policies, including guidelines for riparian habitat protection, public access and recreation, and riverfront development. The American River Parkway Plan, an Element of this General Plan, was last adopted in 1985 and is in the process of being updated¹¹. The Parkway Plan serves as a guide to land use decisions affecting the Parkway and stresses the importance of preserving water conveyance, water quality, habitat function and recreational opportunities. The Cosumnes River Preserve, established in 1987 protects portions of the river in addition to thousands of acres of wetlands and adjacent uplands. The Preserve now encompasses over 46,000 acres and is a collaborative effort between many private and public land owning partners¹².

Policies and implementation measures below seek to continue existing preservation efforts and establish new preservation mechanisms for the Cosumnes and Mokelumne Rivers.

Policies:

- CO-102. Promote and encourage habitat restoration efforts on and adjacent to our river floodways.
- CO-103. Protect the Cosumnes River Corridor by promoting the preservation of agriculture, natural habitat and limited recreational uses adjacent to the river channel, and when feasible by acquiring appropriate lands or easements adjacent to the river.
- CO-104. Promote the preservation of the Mokelumne River.

Implementation Measures:

- A. Prepare an acquisition strategy that prioritizes high value areas adjacent to the Cosumnes River. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- B. Continue to support and implement the Sacramento River Floodway Corridor Management Plan. (PLANNING & ENVIRONMENTAL REVIEW)

¹¹ Information from the Sacramento Area Flood Control Agency website: www.safca.org

¹² Information from the Cosumnes River Preserve website: www.cosumnes.org

- C. Assess and implement an operations and maintenance levee setback for the Sacramento River. Seek to incorporate this setback into the Sacramento River Floodway Corridor Management Plan. (PLANNING & ENVIRONMENTAL REVIEW)
- D. Work with San Joaquin County regarding protection of the Mokelumne River. (PLANNING & ENVIRONMENTAL REVIEW)

Channel Modifications

Objective: Protect and restore natural stream functions.

Intent: Stream courses provide necessary drainage for stormwater runoff, as well as provide open space, aesthetic, and recreational values to urban neighborhoods where the stream course may be the only nearby area to contain, or have the potential to contain, natural functions. In addition, stream corridors cool and cleanse the air, improve water quality through natural filtration processes, provide habitat for wildlife, and potentially link larger habitat areas together. Modification of stream corridors for flood control purposes should consider and demonstrate sensitivity toward topographic variations of naturally occurring streams and ecological diversity of wildlife species and associated stream-side habitat. To this end, any modifications to channels need to reduce adverse effects on dependent wildlife habitats and natural functions. Stream channel modifications for urban, urbanizing, and rural streams require a permit from the State Fish and Wildlife Department.

Policies:

- CO-105. Channel modification projects shall be considered for approval by the Board of Supervisors only after conducting a noticed public hearing examining the full range of alternatives, relative costs and benefits, and environmental, economic, and social benefits.
- CO-105a. Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity. **(Added 2016)**
- CO-106. Realigned or modified channels should retain topographic diversity including maintaining meandering characteristics, varied berm width, naturalized side slope, and varied channel bottom elevation.
- CO-107. Maintain and protect natural function of channels in developed, newly developing, and rural areas.
- CO-108. Channel lowering should occur after consideration of alternatives and only when it is necessary to accommodate the gravity drainage of storm runoff and/or accommodate floodflows under existing bridge structures.

- CO-109. Channel modifications should not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or ground water recharge.
- CO-110. Improvements in watercourses will be designed for low maintenance. Appropriate Manning's "n"¹³ values will be used in design of the watercourses to reflect future vegetative growth (including mitigation plantings) associated with the low maintenance concept.
- CO-111. Channel modifications shall retain wetland and riparian vegetation whenever possible or otherwise recreate the natural channel consistent with the historical ecological integrity of the stream or river.
- CO-112. The use of concrete and impervious materials is discouraged where it is inconsistent with the existing adjacent watercourse and overall ecological function of the stream.
- CO-113. Encourage revegetation of native plant species appropriate to natural substrate conditions and avoid introduction of nonindigenous species.

Implementation Measure:

- A. Work with Urban Creeks Council and appropriate state and federal agencies to develop guidelines for natural channel modifications. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- B. Work with Urban Creeks Council and appropriate state and federal agencies to develop guidelines for low-flow channels. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Land Use Adjacent to Rivers and Streams

Objective: Land uses within and development adjacent to stream corridors are to be consistent with natural values.

Intent: Development near or within stream corridors affects the area's natural integrity and can, if appropriately designed, enhance habitat value, decrease flood damage potential, increase water quality, and generally heighten the natural values of a water course for wildlife use and human enjoyment.

A nearby stream corridor should be considered an attribute to any developing community. By integrating stream values into plan design, new development proximal to a stream corridor will realize benefits in the form of recreational opportunities, greenbelt amenities, and neighborhood identity. In addition, natural habitats will be protected and can provide vital linkages and

¹³ The Manning's "n" is the resistant coefficient used in hydraulic calculations. (Information from Sacramento County Department of Water Resources, Drainage Development Review/Hydrology)

corridors. To this end, multi-functional setbacks should be established along stream corridors and stream channels to allow for water quality protection, bank stabilization, flood attenuation, habitat protection, recreational opportunities and stormwater detention. Policy CO-115 below outlines the specific requirements and widths for these setbacks.

An example of this multi-functional approach is currently underway for the upper portions of Laguna Creek. An Upper Laguna Creek Master Plan is being drafted to preserve and enhance water quality, ecological functions and natural hydrologic and geomorphic characteristics of the creek, upstream of Bond Road. This special planning effort has involved representatives from several local jurisdictions as part of the Upper Laguna Creek Collaborative.

This section also introduces a Floodplain Protection Zone adjacent to rivers, streams and creeks, which aim to protect the water conveyance of the overall system while preserving and enhancing the riparian habitat and its function. The development of a Stream Corridor Ordinance is also included to implement the multi-functional setbacks described above as well as to achieve Clean Water Act permit streamlining. Please refer to the Limitation of Fill in Floodplains section of this Element for related policies.

Policies:

CO-114. Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve and enhance habitat, and offer recreational and educational opportunities.

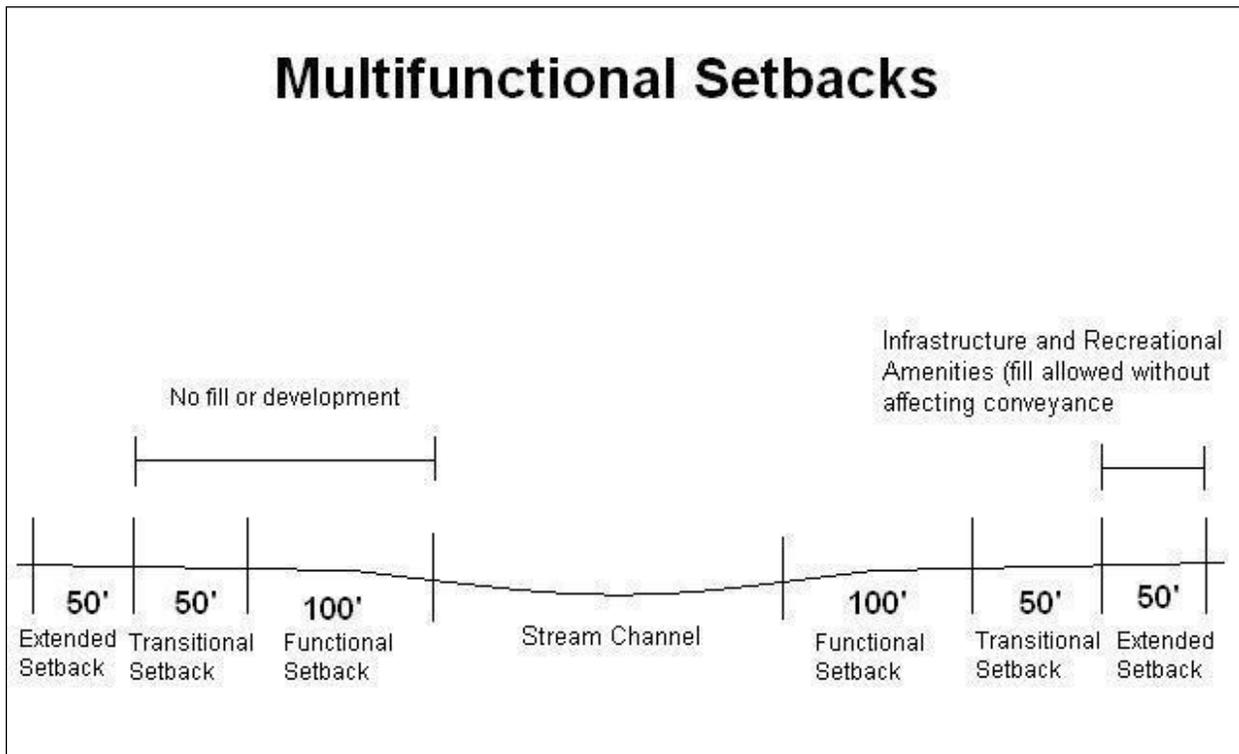
CO-115. Provide setbacks along stream corridors and stream channels to protect riparian habitat functions (Figure 1).

- A functional setback of at least 100 feet and measured from the outside edge of the stream bank should be retained on each side of a stream corridor that prohibits development or agricultural activity. This buffer is necessary to protect riparian functions by allowing for the filtering of sediment, pesticides, phosphorus and nitrogen, organic matter and other contaminants that are known to degrade water quality. This buffer also provides for the protection of vegetation along the stream bank which provides bank stability, erosion control and flood attenuation.
- A transitional setback of at least 50 feet in width beyond the functional buffer should be retained along all stream corridors. This buffer is necessary to protect hydrogeomorphic functions that regulate water temperature, regulate micro-climate, maintain channel complexity and retain hydrologic flow regimes. This buffer also provides corridors to facilitate the movement of wildlife.
- An extended setback of at least 50 feet in width beyond the transitional setback should be retained along all stream corridors. This setback will allow for

recreational uses such as bike, pedestrian and/or equestrian trails and will allow for the placement of infrastructure such as water and sewer lines.

- Stormwater discharge ponds or other features used for improving stormwater quality may be located within the extended or transitional setback area. However, in order to protect stream habitat and floodplain value, the width of the setback shall not be based upon the width of the pollutant discharge pond. The ponds shall be landscaped and maintained with vegetation native to the surrounding area. Detention ponds or other features implementing pollutant discharge requirements, other than approved regional stormwater quality practices that are designed and operated to complement the corridor functionally and aesthetically, are prohibited.
- Setback averaging within individual development projects or as otherwise specified in a County-adopted master plan will be permitted except when riparian woodland will be lost. The minimum width of setbacks cannot fall below 50 feet.
- Master drainage plans may provide for other standards that meet the intent of this policy.

FIGURE 1: POLICY CO-115



- CO-116. Encourage filter strips using appropriate native vegetation and substrate along riparian streambanks adjacent to irrigated croplands.
- CO-117. Public roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings and for purposes of extending or setting back levees. The construction of public roads and parking should utilize structural materials to facilitate permeability. Crossings shall be minimized and be aesthetically compatible with naturalistic values of the stream channel.
- CO-118. Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.
- CO-119. Preserve and enhance Laguna Creek Parkway by:
- Supporting efforts by the Upper Laguna Creek Collaborative planning process to develop an Upper Laguna Creek Master Plan and associated environmental permits to guide future development and conservation along Laguna Creek upstream of Bond Road;
 - Preserving, enhancing and restoring water quality and the ecological functions and values of Laguna Creek and the natural hydrologic and geomorphic characteristics of the creek, upstream of Bond Road; and
 - Managing development of the watershed of Upper Laguna Creek (upstream of Waterman Road) consistent with the Upper Laguna Creek Master Plan.

Implementation Measures

- A. Prepare a stream corridor ordinance to implement CO-114 and to fulfill the intent of the state and federal Clean Water Act policies. The ordinance will be written to achieve Clean Water Act permit streamlining and will be developed in coordination with the EPA, ACE and the State Water Quality Control Board. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- B. Work in concert with NRCS and RCD's to develop effective filter strips. (AGRICULTURAL COMMISSIONER)
- C. Amend the Zoning Code to create a Floodplain Protection Zone adjacent to all rivers, streams and creeks to implement Policy CO-115. When levees are present, this zone shall provide for a buffer between the landside toe of the levee and adjacent development to ensure the availability for levee inspection and maintenance. (PLANNING & ENVIRONMENTAL REVIEW)

- D. Assess the Natural Streams Combining Zone for consistency with the Floodplain Protection Zone and the Stream Corridor Ordinance. (PLANNING & ENVIRONMENTAL REVIEW)
- E. Assist in the efforts to develop and implement the Upper Laguna Creek Master Plan by:
- Work with the Upper Laguna Creek Collaborative to:
 - Define the outer boundaries of the Laguna Creek Parkway (the Parkway);
 - Define the boundaries of the natural preserve corridor along Laguna Creek to meet riparian species conservation and habitat connectivity goals of the South Sacramento Habitat Conservation Plan;
 - Identify alignment of future trails and maintenance roads within the Parkway;
 - Identify a combining zone and describe the nature of activities permitted therein, including:
 - Stormwater management and treatment zones(s);
 - Infrastructure reserve zone(s) to accommodate future installation of linear infrastructure, including the Laguna interceptor sewer;
 - Open space, education and recreation (PLANNING & ENVIRONMENTAL REVIEW, DWR, REGIONAL PARKS)
 - Work with local and state organizations to help preserve and restore water quality and the ecological values by:
 - Prior to adoption of the Upper Laguna Creek Master Plan, avoid encroachment of development into the existing floodplain of Laguna Creek upstream of Bond Road.
 - Retain and restore the natural hydrologic and hydraulic characteristics of the watershed of upper Laguna Creek.
 - Direct riparian habitat mitigation and restoration toward the Laguna Creek Parkway and adjacent lands. (PLANNING & ENVIRONMENTAL REVIEW, DWR, REGIONAL PARKS)
 - Adopting the Upper Laguna Creek Master Plan. (PLANNING & ENVIRONMENTAL REVIEW)
 - Amending the Zoning Code to create a Laguna Creek Combining Zone that includes the provisions outlined in Part 1(d) above. (PLANNING & ENVIRONMENTAL REVIEW)
 - Flag parcels within the Master Plan watershed and require that projects within this area be reviewed by the Laguna Creek Parkway Review Committee. (PLANNING & ENVIRONMENTAL REVIEW)

Maintenance of Rivers and Streams

Objective: Properly manage and fund the maintenance of rivers and streams to protect and enhance natural functions.

Intent: Normal maintenance of rivers and streams consists primarily of removing drainage obstructions, abating weeds, maintaining recreational facilities, collecting refuse, and, when desirable, removing exotic plants and replanting with native species. The dumping of trash onto the floodplain degrades stream values and water quality by reducing aesthetics, modifying stream flow, and polluting the water. Vegetation removal programs should consider the benefits of plant life for enhancing habitat and water quality values compared to the effect of the increased coefficient of friction on flood flows. To ensure that river and stream corridor values are maintained and enhanced, regular maintenance should be conducted and citations issued for illegal dumping.

Policies:

- CO-120. Development projects adjacent to rivers and streams shall provide unencumbered maintenance access.
- CO-121. No grading, clearing, tree cutting, debris disposal or any other despoiling action shall be allowed in rivers and streams except for normal channel maintenance, restoration activities, and road crossings.
- CO-122. River and stream maintenance should allow natural vegetation in and along the channel to assist in removal of nutrients, pollutants, and sediment and to increase bank stabilization, while minimizing impacts on conveyance.
- CO-123. The use of native plant species shall be encouraged on revegetation plans.
- CO-124. Maintain and manage rivers and streams to encourage special status species.

Implementation Measures:

- A. Regularly survey and maintain river and stream channels to remove trash debris and clear obstructions which present a drainage hazard. (DWR)
- B. Expand illegal dumping program to include trash removal from rivers and streams and recover program costs from responsible agencies. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- C. Modify channel maintenance procedures and guidelines to incorporate the protection of stream corridors in order to enhance water quality, provide public amenities, maintain flood control objectives, preserve and enhance habitat, and offer recreational and educational opportunities. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

- D. In coordination with other agencies, such as SAFCA, develop levee maintenance guidelines and procedures to encourage multiple use and seek adoption by local reclamation and flood control districts. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Restoration of Rivers and Streams

Objective: Restore concrete sections of rivers and streams to increase natural functions.

Intent: Efforts toward increasing natural values of channelized sections of rivers and streams, some of which are concrete lined, may be restricted to planting and maintaining native vegetation and stabilizing eroding banks. Limited vegetation restoration adjacent to channels and minor bank reconstruction sensitive to wildlife needs can moderate water temperature, increase species propagation, and provide nesting sites, cover and food without impacting flood control functions. In addition, such restoration of channelized sections can significantly enhance aesthetic and recreation values. To implement restoration procedures, concrete channels should be identified, resource inventories conducted, and restoration plans developed. Funding for restoration in urbanizing areas should come from developer fees or from public and private grants.

Policies:

- CO-125. Restore concrete sections of rivers and streams to natural or naturalized channels, where feasible for increased flood or conveyance capacity and groundwater recharge.

Implementation Measures:

- A. Survey all channelized streams in the unincorporated area and identify restoration opportunities. (DWR, PLANNING & ENVIRONMENTAL REVIEW)
- B. Develop and implement Creek Restoration Plans. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- C. Research and apply for stream restoration grants. (PLANNING & ENVIRONMENTAL REVIEW, DWR)
- D. Assess and identify/target existing concrete-lined channels for future restoration. (PLANNING & ENVIRONMENTAL REVIEW, DWR)

Fisheries

GOAL: Preserve and protect fisheries in County waterways and water bodies.

The drainages and water bodies within or passing through Sacramento County provide habitat for a diversity of fish, including both anadromous and resident species. Anadromous fish include chinook salmon, steelhead trout, striped bass, shad, sturgeon, and lamprey. Resident fish can be separated into warm water fish (such as bass, crappie, catfish, bullhead, sunfish, and carp), and cold water fish (such as rainbow and brown trout and salmon).

The most popular fish for sport and commercial catch are anadromous. Chinook salmon, economically the most important fishery in the County, is harvested in the fall, steelhead trout in winter, and shad in late spring. Fishing for resident species, although less important economically, attracts many fishing enthusiasts. Resident fish are also a major component in the predator-prey relationship with anadromous species and are vital in maintaining the ecological balance of County water ways.

Fisheries have declined with expanding development and habitat neglect. The loss has been generated by water diversion, habitat destruction, water temperature increases, and pollution. Spawning areas, such as gravel shoals for salmon and shade pools for warm water fish, have diminished. Both commercial and sport fishers are observing declines in population and reduced fishing success. (Please also refer to Water Quality in Section 1 of this Element for related policies.)

The State Department of Fish and Wildlife has primary responsibility to maintain the County fisheries resources. However, to successfully reverse fisheries decline, the County, through its policies, should pursue programs that increase propagation, preserve and protect existing aquatic environments, and preserve and restore migratory routes.

In-Stream Functions

Objective: Provide and protect high quality in-stream habitat, water quality and water flows to support fisheries propagation, development, and migration.

Intent: Diversion of water and changes in discharge volume and timing have impacted habitat and reduced both anadromous and resident fisheries, especially in the Sacramento and American Rivers. For example, prior to Folsom Dam, peak discharge of the American River occurred during March, April, May, and June. Post Folsom Dam discharges peak during January, February, and March. Such changes in discharge levels impact sediment load, water temperature, migration patterns, gravel accumulations, and stream side vegetation to the detriment of fisheries. Diversion and obstruction of water from moderate and small streams for local flood control, agricultural water reservoirs, and stock ponds have also contributed to the decline of fisheries by destroying in stream and bank side vegetation, changing sediment loads, increasing runoff, and altering migratory routes.

The Bureau of Reclamation, State Water Resources Control Board, and other regulatory agencies have the coordinated responsibility for setting minimum flows in the American River for water quality purposes and to sustain fisheries. In 2006, a Flow Management Standard was agreed upon to regulate water flow timing and amount to support the lower American River fisheries.

Sacramento County, through its policies, can support minimum flow requirements in the American River and other waterways under its authority.

New developments proximal to natural drainages have significantly changed water quality and runoff patterns. Water flowing over roofs, sidewalks, driveways, and streets collects oil, pesticide, and other chemical residues which are deposited into aquatic habitats. Reduction of natural catchment basins and permeable surface areas has increased runoff and erosional processes causing stream bed and bank deterioration. To maintain fisheries and associated habitat, runoff should be periodically tested for toxicity and, if necessary, treated before release into natural drainage. To enhance percolation processes and reduce destructive erosional forces permeable surface areas should be maintained. Please refer to the Water Quality section of this Element for related policies.

Please refer to Section I of this Element - Water Supply, Quality and Conservation – for related policies on minimum flow requirements and water quality.

Policies:

- CO-126. Prohibit obstruction or underground diversion of natural waterways.
- CO-127. Protect, preserve, and restore migratory routes for anadromous species.
- CO-128. Require screens on diversion pumps or similar bypass apparatus to reduce fish mortality.
- CO-129. Require screening on all public water diversion facilities.
- CO-130. Protect, enhance and restore riparian, in-channel and shaded riverine aquatic habitat for:
 - spawning and rearing of fish species, including native and recreational non-native, non-invasive species, where they currently spawn;
 - potential areas where natural spawning could be sustainable; and
 - supporting other aquatic species

Implementation Measures:

- A. In cooperation with SAFCA, ARFCD, Water Reclamation Districts and State Agencies, survey and map County waterways to identify priority areas for restoration in order to protect, and enhance fisheries and their habitats. (DWR, PLANNING & ENVIRONMENTAL REVIEW)

- B. Water diversion screens shall meet State Department of Fish and Wildlife screen design criteria standards. (DWR, PLANNING & ENVIRONMENTAL REVIEW)

SACRAMENTO COUNTY GENERAL PLAN CONSERVATION ELEMENT

SECTION VII

TERRESTRIAL RESOURCES

GOAL: Sacramento County vegetative habitats preserved, protected, and enhanced.

Introduction

Sacramento County terrestrial resources include a variety of native and non-native trees and vegetation in both rural and urban environments. Trees native to the County include the valley oak, blue oak, interior live oak, cottonwood, sycamore, and willow. These trees, found in rural and urban areas, propagate and grow under natural conditions. Non-native trees are predominate in the urban environment having been selected and planted because of ornamental value, shade producing characteristics, general resistance to particular pests, or proven adaptation to urbanization. Additional policies pertinent to riparian vegetation are found in the riparian portion of the Rivers and Streams section of this element.

Over the years, a significant number of native trees have been removed to facilitate urban development and infrastructure improvements, accommodate agriculture, provide fuelwood or have been milled for building materials. It is clear that with continued urban and rural development, the County's oak woodlands and isolated groves will diminish unless concerted efforts are pursued to protect the resource. To ensure native woodlands remain a viable element of the County's natural landscape, land management must be sensitive to healthy propagation of native trees. To this end, County policy should protect the habitat value, historical attributes, and future values of rural woodlands and riparian habitat that still exist beyond the urban area.

Trees in urban areas provide aesthetic and environmental benefits to residential and commercial areas. Trees enhance a community's livability by softening street noise and enhancing pedestrian use. Urban trees provide stormwater quality benefits by intercepting small, more frequent rain and compensating, to some extent, the impact of paved areas. Trees also provide a cool green canopy of shade to reduce the heating effects of summer sun and consequently reduced energy consumption to cool buildings. The urban forest in Sacramento has provided distinct identities for local neighborhoods and has reduced summertime temperatures by minimizing reflective heat. As the County's urbanized area expands the need for trees and associated canopy cover will increase. Since an urban forest is not static, the planting and maintenance of trees will be required to encourage healthy growth and to protect the biologic well being of the urban forest. It is the intent of this section to form a framework which shall preserve and protect Sacramento County's tree resources and guide the County in formulating a comprehensive tree management and propagation program.

This section describes policies and programs under four objectives:

- Tree and vegetation management practices to promote regeneration in designated woodland resource conservation areas.
- Heritage and landmark tree resources preserved and protected for their historic, economic and environmental functions.
- A coordinated, funded Urban Tree Management Plan and program sufficient to achieve a doubling of the County's tree canopy by 2050 and promote trees as economic and environmental resources for the use, education, and enjoyment of current and future generations.
- One million new trees planted within the urban area between now and 2030.

Native Vegetation Protection, Restoration and Enhancement

Objective: Tree and native vegetation management practices to promote regeneration in designated resource conservation areas.

Intent: Sacramento County is home to a variety of native tree and grassland habitats. The native tree habitats are defined as Oak Woodlands, Oak Savannah, and Mixed Riparian and the dominant grassland habitat being that of the California Prairie. These native vegetative habitats are very important to the future of Sacramento County. However, due to the combined effects of overgrazing, the introduction of non-native exotic competitive grasses, decreased deer populations, climatic changes, and fuel wood harvesting, California's native vegetation have been unable to maintain existing populations. The California Department of Forestry and Department of Fish and Wildlife have recognized the statewide decrease in oak tree propagation, and have developed the Integrated Hardwood Range Management Program to improve oak regeneration. In support of the State's efforts, Sacramento County will initiate cooperative programs with the State to protect the native vegetative habitats. The programs will implement such management techniques as habitat enhancement, sustained yield fuelwood harvesting, and grazing practices that encourage propagation. Implementation of these programs will require an expansion of resource protection measures and increase funding for vegetation and tree management programs. These programs will help ensure future regeneration of native tree and grassland prairie habitats by increasing opportunities for propagation of these habitats within the County.

Additional programs to acquire and protect representative examples of established native vegetative habitats areas are included as part of the open space preservation strategy (Please refer to the Open Space Element).

Policies:

- CO-131. Fuel wood production cut for sale shall occur only on a sustainable yield basis.
- CO-132. Protect native vegetative habitats from improper grazing regimes on public lands and inform private land operators of how they may minimize impacts to these habitats.
- CO-133. Prohibit native vegetative habitat mitigation and/or other public plantings onto incompatible substrates i.e., tree planting in vernal pool hardpan.
- CO-134. Maintain and establish a diversity of native vegetative species in Sacramento County.
- CO-135. Protect the ecological integrity of California Prairie habitat.
- CO-136. Prohibit the loss of mitigated resource areas.
- CO-137. Mitigate for the loss of native trees for road expansion and development consistent with General Plan policies and/or the County Tree Preservation Ordinance.

Implementation Measures:

- A. Develop a program that permits commercial firewood cutting that considers the following:
 - Whether removing the trees would have a significant negative environmental impact;
 - Whether the proposed removal would not result in clear-cutting, thinning, or stand improvement;
 - Whether replanting would be necessary to ensure adequate regeneration;
 - Whether the removal would create the potential for soil erosion and/or water quality impacts;
 - Whether any other limitations or conditions should be imposed in accordance with sound tree management practices; and
- B. Establish penalties for non-compliance with appropriate permitting for commercial firewood cutting. (PLANNING & ENVIRONMENTAL REVIEW)
- C. Determine current extent and diversity of native tree woodland resources in Sacramento County. (PLANNING & ENVIRONMENTAL REVIEW)

- D. Cooperate with and assist the California Department of Forestry & Fire Protection, and other Resources agencies and private conservancies, in studies to identify factors inhibiting native tree regeneration, techniques to increase the rate of native tree propagation, and monitor the health and status of existing and future native tree woodland resources. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- E. Develop native woodland monitoring, management and adaptive management programs. The programs should include the following components:
- Restoration and Enhancement Strategy;
 - Grazing Management Program;
 - Harvesting Plan;
 - Compliance Monitoring Program;
 - Effectiveness Monitoring Program;
 - General Preserve Management Program;
 - Adaptive Management Program; and
 - Data Management and Reporting Guidelines.
- (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- F. Provide educational materials and workshops for landowners and the public to educate them on native tree resource management. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- G. Amend the Zoning Code Ordinance to require a use permit for commercial harvesting of oaks subject to a Planning and Environmental Review or arborist approved revegetation plan. (PLANNING & ENVIRONMENTAL REVIEW)
- H. Amend the Tree Ordinance to allow land acquisition and acorn and seedling plantings as acceptable alternatives for native tree mitigation and provide an endowment for long-term preservation. (PLANNING & ENVIRONMENTAL REVIEW)
- I. Identify high priority areas for protection based on existing prairie vegetation assemblages. (PLANNING & ENVIRONMENTAL REVIEW)
- J. Target areas for restoration based on soil profiles that favor California Prairie plant species. (PLANNING & ENVIRONMENTAL REVIEW)

- K. Create parcel tags that will track and monitor mitigated areas. (PLANNING & ENVIRONMENTAL REVIEW)

Landmark and Heritage Tree Protection

Objective: Heritage and landmark tree resources preserved and protected for their historic, economic, and environmental functions.

Intent: Preservation of heritage and landmark trees enhances the County's landscape, increases property values, conserves energy, reduces soil erosion, provides natural wildlife habitat, natural water filtration, and preserves natural heritage values. To preserve these values an inventory of the County, conducted over a number of years by staff, interns and volunteers, will identify existing mature native and landmark trees for protection. A heritage tree is defined as a native oak (Valley Oak, Interior Live Oak, Blue Oak, and Oracle Oak) that exceed 60 inches in circumference (18 to 20 inches in diameter at breast height). A Landmark Tree must be stately, prominent, and have exceptional habitat values.

The County's current Tree Preservation Ordinance does recognize the value of preserving trees and seeks to protect the resource by preserving all trees through its development review process. However, the ordinance does have shortcomings which additional policies and programs seek to remedy by providing guidance for directing tree preservation efforts. One such shortcoming is the tendency to preserve mature trees, especially oaks, with inadequate consideration for regeneration opportunities or tree canopy. Tree canopy is the plain view of a tree's crown at full foliage. Maintaining an area's tree canopy can provide opportunities for second generation growth which will eventually replace first generation growth. In addition, the canopy provides aesthetic values and energy conservation benefits. It should be noted the intent of these policies is to preserve and protect the tree resource, not to saddle property owners with regulations that overly interfere with development.

Conservation of native tree species other than oaks and preservation of native oaks¹⁴ and landmark¹⁵ trees is the primary intent of the policies in the section. However, if preservation cannot be attained, then loss of the protected trees shall be compensated. Compensation for tree loss may be achieved by on-site or off-site replacement or payment into a Tree Preservation fund.

Finally, consistent with CEQA's guidelines, these policies set a threshold of significance for the loss of protected trees. These thresholds are intended to serve as a guideline for determining significant impact. In general terms, projects that result in tree loss below the threshold would be considered to have less than a significant impact and projects that meet or exceed the threshold would be considered to have a significant environmental impact. In either case, mitigation

¹⁴ Native oak trees with a single trunk measuring six inches in diameter or with an aggregate of multiple trunks measuring ten inches in diameter at breast height are also protected under provisions of the County Tree Ordinance

¹⁵ As defined in the County Tree Ordinance, Landmark trees are especially prominent or stately trees on any land in Sacramento County, including privately owned land

measures will be applied. Tree impacts tend to be circumstantial. In some cases, projects resulting in tree loss that meet or exceed the threshold may have a potential for significant impact even after replacement tree mitigation is applied. Conversely, tree loss of some species that exceeds the threshold in certain situations may not constitute a significant impact. In other cases, the loss of a single heritage tree may be considered a significant impact. Final determination of significance will be made by the County Environmental Coordinator.

Policies

- CO-138. Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.
- CO-139. Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.
- CO-140. For projects involving native oak woodlands, oak savannah or mixed riparian areas, ensure mitigation through either of the following methods:
- An adopted habitat conservation plan.
 - Ensure no net loss of canopy area through a combination of the following: (1) preserving the main, central portions of consolidated and isolated groves constituting the existing canopy and (2) provide an area on-site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on-site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration.
 - Removal of native oaks shall be compensated with native oak species with a minimum of a one to one dbh replacement.
 - A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary.
 - If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated may be paid to the County's Tree Preservation Fund or another appropriate tree preservation fund.
 - If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all of the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity,

preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as a suitable site for replacement tree plantings required by ordinances or other mitigations.

- Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;
- Adjacent to protected stream corridor or other preserved natural areas;
- Supports a significant number of native broadleaf trees; and
- Offers good potential for continued regeneration of an integrated woodland community.

CO-141. In 15 years the native oak canopy within on-site mitigation areas shall be 50 percent canopy coverage for valley oak and 30 percent canopy coverage for blue oak and other native oaks.

Implementation Measures:

A. Through aerial photo interpretation and other means, survey County and identify existing mature, native, and landmark trees for protection. Develop an inventory of those trees to be protected. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)

B. Amend the County Tree Preservation Ordinance to:

- Apply to the entire County (PLANNING & ENVIRONMENTAL REVIEW)
- Include the protection of the native and landmark trees consistent with General Plan policies on lands zoned for urban and agriculture/residential use. (PLANNING & ENVIRONMENTAL REVIEW, SACDOT)
- Accord the same protection now provided for native oaks to other native trees appropriate to Sac Co. (SACDOT, REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)
- Develop and periodically review native tree lists. (SACDOT, REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)
- Require equivalent compensation of a minimum tree replacement value as follows:
 - One deepot seedling = 1 inch dbh
 - One 15-gallon tree = 1 inch dbh
 - One 24-inch box tree = 2 inch dbh
 - One 36-inch box tree = 3 inch dbhdbh = diameter at breast height
(SACDOT, REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)
- To include protection for species no longer covered by the requirements of the Mitigation Monitoring and Reporting Program (MMRP) and which may not yet be 6

inches diameter at breast height (DBH) that would otherwise be covered by County regulations. (SACDOT, REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)

- C. During project review require exhibits identifying all tree species, tree locations, and tree diameters, at 4.5 feet above ground for all projects. Identify trees that have been previously counted for mitigation. (PLANNING & ENVIRONMENTAL REVIEW)
- D. Indicate on development plans existing native oak canopy, oak canopy cover to be preserved, and on-site mitigation area to replace lost canopy cover to ensure oak regeneration opportunities, conservation of oak species, and mitigation measures where applicable. (DWR, SACDOT, PLANNING & ENVIRONMENTAL REVIEW)
- E. Amend building permit requirements to require identification of trees on plans and review plans to ensure protection of trees. (BUILDING PERMITS & INSPECTION)
- F. Look at minimum sizes for different species of landmark trees. (PLANNING & ENVIRONMENTAL REVIEW)
- G. Establish the replacement cost of trees in accordance with the Council of Tree and Landscape Appraiser's standards, or equivalent group, for appraising trees. Also allow for the option to acquire land. (PLANNING & ENVIRONMENTAL REVIEW)

Urban Forest Management

Objective: A coordinated, funded Urban Tree Management Plan and program sufficient to achieve a doubling of the County's tree canopy by 2050 and promote trees as economic and environmental resources for the use, education, and enjoyment of current and future generations.

Intent: Community support, from public agencies, private organizations, and individuals form the foundation of a well balanced urban forestry program. Support for an urban forest program requires public education and outreach regarding the importance of trees in or near urban environs. To facilitate increased public awareness private organizations and public agencies should develop educational materials which inform the public on urban forest issues. In addition, local utilities, particularly Sacramento Municipal Utilities District (SMUD), should be involved in the placement and planting of new trees to maximize energy conservation and air quality benefits provided by an urban forest. Sacramento Tree Foundation introduced Greenprint, previously called the Sacramento Regional Urban Forest Framework, as an initiative to double the tree canopy in forty years. Greenprint aims at improving air quality, water quality, energy, real estate, and businesses by increasing our region's average shade coverage to 35%. Encouraging these tree benefits can aid in Greenprint's goal to create the best national urban forest. Adoption of the Greenprint will set tree canopy goals and strategies for each municipality within the region. Working with these 28 local governments in the six-County region will form a

collaborative effort to green our communities. Currently, 26 SACOG jurisdictions have signed on to the Greenprint, including Sacramento County.

Greenprint emphasizes environmental sustainability and responsibility. Three key elements to a successful urban forest program include management of public trees, policies and ordinances, and community partnerships. Greenprint offers a step-by-step implementation to urban forest growth. Support for such a program requires public education and outreach on the benefits of trees, as well as private organizations and public agency efforts. Following this regional approach of integrating trees into the urban environment supports and protects the urban forest while planning new development.

Policies:

- CO-142. Provide funds for education, programs, and materials emphasizing the value and importance of trees.
- CO-143. Work cooperatively with local utilities to assure that new trees are planted in locations that will maximize energy conservation and air quality benefits.
- CO-144. Support a regional approach consistent with the provisions of Greenprint for the protection, replacement, and mitigation of trees.
- CO-145. Removal of non-native tree canopy for development shall be mitigated by creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. New tree canopy acreage shall be calculated using the 15-year shade cover values for tree species.
- CO-146. If new tree canopy cannot be created onsite to mitigate for the non-native tree canopy removed for new development, project proponents (including public agencies) shall contribute to the Greenprint funding in an amount proportional to the tree canopy of the specific project.

Implementation Measures:

- A. Adopt an urban forest master plan consistent with the Greenprint that includes the following:
 - Establish a task force to develop tree planting and maintenance policies, formation of a tree commission, and recommend action on financing measures to support a tree program. Specifically the plan shall address the following:
 - Street and park tree preservation.
 - Street, median, and parking lot planting and design guidelines.
 - A tree care program which regularly assesses tree growth and health.
- (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS, SACDOT)

- Determine current funding support for tree programs, and if necessary, implement sustainable funding for urban forest activities. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
 - Prepare and adopt an ordinance for tree canopy standards and identify development requirements for tree protection. (PLANNING & ENVIRONMENTAL REVIEW)
 - In cooperation with Greenprint Clearinghouse, provide community outreach programs and educational materials on the benefits of trees. (PLANNING & ENVIRONMENTAL REVIEW)
 - Develop an interdepartmental urban forest stakeholder working group. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS, SACDOT)
- B. Proclaim Arbor Day and commemorate it by a public Tree Planting event. (REGIONAL PARKS)
- C. In cooperation with local agencies, provide public awareness materials on the value of trees for property owners and for decreasing the "urban heat island effect". (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- D. In cooperation with local agencies, produce curriculum for school age children and other education materials to promote the preservation and historical importance of oak trees. (REGIONAL PARKS)

New Urban Trees

Objective: One million new trees planted within the urban area between now and 2030.

Intent: Sacramento County's urban forest is an integral element of its natural and urban landscape and contributes significantly to the quality of urban life. Trees offer many benefits to the community and its visitors, which include creating an aesthetically pleasing environment, increasing property value, and reducing noise. In addition, trees are known to combat the "urban heat island effect" by reflecting ten (10) to twenty-five (25) percent of the solar radiation that reaches the earth and dissipating much of the absorbed radiation through evaporation which reduces household energy requirements. Furthermore, trees can improve air quality by providing effective filtering of particulate matter and absorption of certain gaseous pollutants.

Currently private tree foundations are actively working to meet the 1,000,000 new trees objective. A complete tracking program to monitor progress is under development. SMUD is also developing a major tree planting program to increase shade around buildings. The County should actively support these and other efforts to increase trees in the unincorporated area.

The County, recognizing the advantages trees offer, has an established Tree Ordinance. However, County tree provisions presently require only 30% to 50% tree canopy coverage in parking lots, depending upon lot size, delineate narrow tree easement strips, and do not require tree planting in new residential areas. To maximize potential tree planting sites amendments to the Zoning Code and Tree Ordinance shall seek additional shade cover. Policies and programs below seek to expand the canopy by increasing shade coverage in most parking areas, enlarging tree easement in residential areas, and requiring tree planting or funding of planting by developers.

Policies:

- CO-147. Increase the number of trees planted within residential lots and within new and existing parking lots.
- CO-148. Support private foundations with local funds for their tree planting efforts.
- CO-149. Trees planted within new or existing parking lots should utilize pervious cement and structured soils in a radius from the base of the tree necessary to maximize water infiltration sufficient to sustain the tree at full growth.

Implementation Measures:

- A. In cooperation with private tree foundations and local print media and nurseries, produce annual pre-Arbor Day newspaper supplement on the value of urban trees including coupons from local nurseries for discounts on tree purchases. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)
- B. Amend the County Department of Transportation's tree planting specifications and installation requirements to better facilitate street and median trees on streets and throughways. (SACDOT)
- C. Establish a 12.5' tree planting easement in new development and residential areas. (PLANNING & ENVIRONMENTAL REVIEW)
- D. Prepare and adopt an ordinance requiring the planting a minimum of one 15 gallon street tree on each new residential lot and two 15 gal street trees on each new residential corner lot. Provide developers the option of planting trees or depositing monies into a tree planting fund equal to the cost of providing, planting, and initial irrigation of the trees and earmark proceeds toward tree planting in the same development. (PLANNING & ENVIRONMENTAL REVIEW, SACDOT)
- E. Amend Zoning Code commercial parking provisions to require, within 15 years, provisions for a minimum of 50% shade within any parking lot, a minimum 8' x 8' area for planting strips, use of pervious cement and structured soils near trees, and landscape modifications to bring existing parking lots up to code standards for any development expansion or

improvement exceeding 10 percent of the existing building's interior square footage. (PLANNING & ENVIRONMENTAL REVIEW)

- F. Establish a recommended street tree list which does not include non-native invasive species. (SACDOT, PLANNING & ENVIRONMENTAL REVIEW)
- G. Establish a recommended parking lot tree list which does not include non-native invasive species that are fast-growing, hardy, and result in a large canopy. (SACDOT)

**SACRAMENTO COUNTY GENERAL PLAN
CONSERVATION ELEMENT**

SECTION VIII

CULTURAL RESOURCES

GOAL: Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economical importance.

Introduction

The foundation of a cultural community rests upon the attributes and artifacts of its predecessors. Preserving and understanding these cultural resources needs to be an element of consideration when planning for future growth.

Sacramento County is fortunate to have a rich and varied collection of historic and prehistoric features which record events in the county's long history of human habitation and covers time from prehistory to our recent past. Exemplary archaeological sites of Nisenan-Maidu and Plains Miwok Indians have been identified along river terraces. Their location is fiercely protected by researchers who feel, without protection, the sites would be disturbed if the locations were disclosed. History represents a variety of ethnic and cultural groups and ranges broadly through social, economic, military and political subjects. The County currently houses numerous prehistoric, ethnohistoric and historic sites, as well as historic architecture that is registered on the National Register of Historic Places and the California Register of Historic Resources.

Preserving and stabilizing remnants of our past require that we address problems leading to the rapid deterioration of our cultural resources. Problems include inadequate data regarding site locations, insufficient monitoring of development proximal to sensitive areas, poor cultural resource training for County staff charged with construction monitoring and the lack of a County Cultural Resources Committee to coordinate preservation efforts. Additional problems include insufficient funding to protect sites through public purchase, private conservancies, and easements; inadequate access limitations and regulation enforcement; and poor methods of preserving, cataloging, and storing artifacts. The County needs to demonstrate an organized and method driven commitment to preserving and protecting sites. The term site refers to sites, buildings, structures, and human alterations to the natural environment as well as the artifacts contained on or within a site. In addition, a site may also be a sacred place with no physical man-made remnant, such as a rock outcropping, tree or confluence of water bodies. Preservation of such sites representing the county's rich and historic past ensures that future residents will have the opportunity to learn about the important contributions past inhabitants have had on the area's development. The need to establish policies protecting cultural resources is all the more urgent as the area continues to grow and urbanize. One key component in this section is the creation of a Cultural Resources Committee for Sacramento County. This committee would help

protect the local cultural resources in the County, including creating inventories of resources as well as measures to ensure that development projects adequately preserve these resources.

This section describes policies and programs under six objectives:

1. Comprehensive knowledge of archeological and historic site locations.
2. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.
3. Structures with architectural or historical importance preserved to maintain contributing design elements.
4. Known cultural resources protected from vandalism unauthorized excavation, or accidental destruction.
5. Properly stored and classified artifacts for ongoing study.
6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

Cultural Resource Surveys

Objective: Comprehensive knowledge of archeological and historic site locations.

Intent: A survey and inventory cataloging historic structures, old farmsteads, and recorded Native American sites would assist the county in protecting areas of cultural significance while planning for development. The Sacramento Museum and History Center has tried unsuccessfully in the past to obtain grant monies from the State Office of Historic Preservation to initiate a survey of the entire County. This effort should continue. It should be noted that in 2005, the California Public Records Act was amended to permit any state or local agency to deny a public records act request and withhold from public disclosure certain records related to Native American sites (please refer to Government Code Sections 6254 (r) and 6254.10 for further information).

Implementation Measures:

- A. In cooperation with the North Central Information Center (NCIC) and cultural resources professionals, conduct:
 - A comprehensive survey to record location of prehistoric, ethnohistoric and historic sites. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)

- A comprehensive survey to identify historically and architecturally important structures. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)

Archeological Site Protection During Development

Objective: Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to cultural and ethnic values of all affected.

Intent: Questionable measures throughout the state have incited Native Americans to strongly protest the disrespectful and improper destruction of their heritage and to seek regulations protecting remnants of their past. In 2004, California Senate Bill 18 was signed into law in order to ensure that local jurisdictions and Native American tribes have meaningful consultations during the early stages of the land use planning process. Under this bill, local jurisdictions work with the State Native American Heritage Commission to obtain Native American Tribal contact information as well as contact information for peoples of Native American Descent that may be able to provide input on proposed projects in the County that involve a General Plan or Specific Plan adoption/amendment or include an Open Space designation. These tribes are then contacted by the jurisdiction with information about the project and, at the tribes' request, can enter into a consultation process to discuss the project and ways to minimize any negative impacts on cultural resources. Throughout this process, local governments must recognize the sensitivity of resources and respect confidentiality requests regarding site specific information. In 2005, the California Public Records Act was amended to permit any state or local agency to deny a public records act request and withhold from public disclosure certain records related to Native American sites (please refer to Government Code Sections 6254 (r) and 6254.10 for further information).

Another important step in protecting cultural resources is to become a member of the Certified Local Government (CLG) program through the California Office of Historic Preservation and the National Park Service. Becoming a CLG member allows local jurisdictions to strengthen decision-making regarding historic places at the local level. The program also offers technical assistance, an opportunity to apply for grant funds and adds credibility to local cultural resource programs and standards.¹⁶

Paleontology is the scientific study of life forms in the geologic past, which involves detailed analysis of plant and animal fossils. Paleontological resources are useful in education in that they promote the understanding of the history of life and the diversity of the Earth's biota. Additionally, these resources document evolutionary history of now extinct biota while helping to reconstruct environmental changes that have impacted life on Earth. Of particular importance, paleontological resources have helped to reconstruct paleoclimatology and the changes in the

¹⁶ Source: California Office of Historic Preservation (<http://ohp.parks.ca.gov>) and the National Park Service (www.cr.nps.gov/hps/clg/clg_p.htm)

earth's climate which have occurred throughout history. As these resources are nonrenewable once destroyed, paleontological resources have been afforded protections under CEQA.

There are at least five recorded sites in Sacramento County which have revealed fossil remains dating back to 100,000 years ago. Policies CO-150 through CO-163 help to ensure that future finds of this valuable resource are protected.

Policies:

- CO-150. Utilize local, state and national resources, such as the NCIC, to assist in determining the need for a cultural resources survey during project review.
- CO-151. Projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space shall be noticed to all appropriate Native American tribes in order to aid in the protection of traditional tribal cultural places.
- CO-152. Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.
- CO-153. Refer projects with identified archeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend appropriate means of protection and mitigation. The Committee shall coordinate with the Native American Heritage Commission in developing recommendations.
- CO-154. Protection of significant prehistoric, ethnohistoric and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity. □
- CO-155. Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.
- CO-156. The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.
- CO-157. Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.
- CO-158. As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

- CO-159. Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.
- CO-160. County Planning and Environmental Review staff shall take historical and cultural resources into consideration when conducting planning studies and documents in preparation of, including but not limited to, areas plans, corridor plans, community plans, and specific plans.
- CO-161. As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.
- CO-162. Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards and procedures.
- CO-163. Require that a certified geologist or paleoresources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

Implementation Measures:

- A. Develop a Cultural Resources Committee (appointed by the Board of Supervisors) to establish procedures and criteria for preservation and mitigation for cultural resources by utilizing information available from the Sacramento Archives and Museum Collection Center (SAMCC) and the North Central Information Center (NCIC). (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- B. At the beginning of projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space, notify the California Native American Heritage Commission and the appropriate Native American tribes regarding the project and, if requested by the tribes, set up consultation regarding the protection of traditional tribal cultural places. This notification and consultation process shall be carried out in accordance with Government Code Sections 65040.2, 65092, 65351, 65352, 65352.3, 65352.4, 65560, 65562.5; Public Resources Code Sections 5097.9, 5097.993; and Civil Code Section 815.3 and shall prevent public exposure of sensitive cultural resources. (PLANNING & ENVIRONMENTAL REVIEW)
- C. Establish procedures to:
- Conduct periodic training programs for County Public Works and Infrastructure Agency and County Airports construction and maintenance personnel to facilitate their awareness of archeological site indicators and proper procedures. (PLANNING & ENVIRONMENTAL REVIEW)

- Utilize mitigation monitoring and reporting programs to provide for on-site monitoring during construction adjacent to known sites. (PLANNING & ENVIRONMENTAL REVIEW)
 - Write letters during the environmental review process, to peoples of Native American descent based on a contact list provided by the Native American Heritage Commission, to request a Native American statement regarding a proposed project when that project is located on a site with known cultural resources. (PLANNING & ENVIRONMENTAL REVIEW)
- D. Pursue becoming a certified local government and establish a local County registry to document and protect cultural resources that are significant to the County of Sacramento. This registry should be administered through the Cultural Resources Committee (please refer to Implementation Measure A under Archeological Site Protection During Development). (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- E. Create a new section in the Conservation Element on Paleontological Resources that includes background on paleontology in general and also specific to Sacramento County. (PLANNING & ENVIRONMENTAL REVIEW)

Historic Structure Preservation

Objective: Preserve structures such as buildings, bridges, or other permanent structures with architectural or historical importance to maintain contributing design elements.

Intent

Too often, development destroys buildings that can identify a neighborhood or link the past to the present. This objective seeks to cement architectural importance and historical significance with design elements of future development. Such buildings or areas, when preserved, help to define community character. Sacramento County's noteworthy but limited array of historically significant structures, and diverse structural styles, lend themselves well to promoting development that recognizes the value of historic and archeological preservation.

Policies

- CO-164. Structures having historical and architectural importance shall be preserved and protected.
- CO-165. Refer projects involving structures or within districts having historical or architectural importance to the Cultural Resources Committee to recommend appropriate means of protection and mitigation.

- CO-166. Development surrounding areas of historic significance shall have compatible design in order to protect and enhance the historic quality of the areas.
- CO-167. When conducting planning studies, County Planning and Environmental Review staff, shall encourage the adaptive reuse of historic resources when the original use is no longer feasible or allowed under proposed area planning efforts.
- CO-168. County-owned historic and cultural resources shall be preserved and maintained, such that modifications, alterations, and rehabilitations are conducted in a manner that is consistent with the U.S. Secretary of the Interiors Standards for the Treatment of Historic Properties.

Implementation Measures

- A. Develop a program to help protect historic resources. Potential elements of the program includes:
- Conducting surveys for structures with architectural or historical importance;
 - Developing design guidelines for areas adjacent to or within historic sites;
 - Promoting the use of the State Historic Building Code to protect historic resources;
 - Encouraging owners of eligible historic properties to apply for State and federal registration and to participate in tax incentive programs for historic restoration;
 - Identifying funding mechanisms to support programs to preserve, restore, and enhance unique historic sites;
 - Acquiring and preserving historic sites, and/or acquire easements over sites and building facades; and
 - Developing and periodically updating a comprehensive inventory of properties that contain structures that are listed on the National or California Register, California Historic Landmarks and California Points of Interest.
(REGIONAL PARKS, BUILDING PERMITS & INSPECTION, PLANNING & ENVIRONMENTAL REVIEW)

Destruction of Cultural Resource Sites

Objective: Protect any known cultural resources from vandalism, unauthorized excavation, or accidental destruction.

Intent

This objective seeks to prevent wanton or accidental destruction of archeological sites and, when desirable, to preserve artifacts in situ. The science of archeology attempts to understand and interpret human behavior and cultural traits through reconstruction of prehistoric and historic sites. Disturbance of sites and illegal removal of artifacts compromise a site's integrity and severely limit the interpretation of cultural attributes, especially within the historical context of the area. Contrary to popular belief, federal legislation such as the federal Antiquities Act does not protect archeological, historic, or cultural resources except on federal land. Protection of resources on other public or private land is dependent largely upon state and local legislation.

Policies

- CO-169. Restrict the circulation of cultural resource location information to prevent potential site vandalism. This information is exempt from the "Freedom of Information Act".
- CO-170. Cooperate with other agencies to enforce laws and aggressively prosecute illegal collection of artifacts.
- CO-171. Design and implement interpretive programs about known archeological or historical sites on public lands or in public facilities. Interpretation near or upon known sites should be undertaken only when adequate security is available to protect the site and its resources.

Implementation Measures

- A. Develop a plan in conjunction with Archeological Conservancy to secure easements, agreements, or other appropriate mechanisms to protect known cultural sites from disturbance or erosion. (REGIONAL PARKS, PLANNING & ENVIRONMENTAL REVIEW)
- B. Periodic patrol of County owned and managed archeological sites by park rangers. (REGIONAL PARKS)
- C. Implement a program within County departments which manage or patrol properties with known cultural resources to facilitate their awareness of archaeological site indicators and proper procedures in handling cultural resources. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)

Artifact Study and Storage

Objective: Properly stored and classified artifacts for ongoing study.

Intent: Existing facilities for artifact storage are insufficient. Because of this, local universities and museums are no longer accepting new artifacts for their anthropology collections. Materials collected for scientific research during project mitigation are now being stored uncataloged in

unspecified locations. Yet, mitigation measures undertaken during redevelopment to satisfy CEQA provision continue to yield an ever increasing inventory of artifacts. There is a demonstrated and critical need to establish a storage facility. Funding for such a facility should be provided from developer mitigation fees and agreements should be reached with local postsecondary educational institutions to preserve and protect remnants of past cultures.

Implementation Measures:

- A. Initiate discussions regarding the preparation of a comprehensive regional study design for the excavation, cataloging and analysis of cultural resource artifacts and the synthesis of available information. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)
- B. Identify a repository for cataloging and storage of excavated cultural artifacts. (PLANNING & ENVIRONMENTAL REVIEW, REGIONAL PARKS)

Public Awareness of Cultural Resources

Objective: Increase public education, awareness and appreciation of both visible and intangible cultural resources.

Intent

If preservation efforts are to be successful, the County will need to make a unified effort to protect critical sites as public parks and to educate residents on the value of preserving remnants of our collective past. The County will continue to support the exhibits, public education programs and curation facilities at local history museums and continue to support the expansion of collections on local history and archaeology housed by the County/City library system as well as the History and Science Division at the Sacramento Archives and Museum Collection Center.

Policies

- CO-172. Provide historic and cultural interpretive displays, trails, programs, living history presentations, and public access to the preserved artifacts recovered from excavations.
- CO-173. Interpretive elements involving Native American cultural resources shall be located at village sites (provided any unexcavated resources are properly protected) representative of different physical environments found in the County.
- CO-174. Promote and support the California Indian Heritage Center.
- CO-175. The County shall support efforts to develop Cultural Resources Tourism program within the County as a tool to preserve important cultural resources and in order to encourage economic development of resources within the County.

Implementation Measures:

A. In cooperation with local cultural resources experts:

- Present educational programs to school age children. (REGIONAL PARKS)
- Design educational criteria guidelines and study units for incorporation in county school curricula. (REGIONAL PARKS, COUNTY OFFICE of EDUCATION)