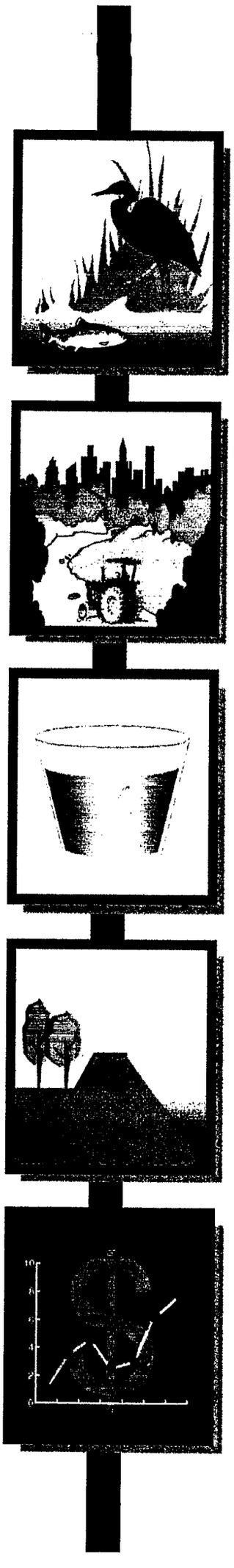

CALFED
BAY-DELTA
PROGRAM

Affected Environment and Environmental Impacts

Land Use Economics

Draft Technical Report
September 1997

CALFED/707

CALFED Bay-Delta Program
LAND USE TECHNICAL REPORT
AFFECTED ENVIRONMENT
AUGUST 25, 1997 DRAFT

Table of Contents

List of Tables

CALFED Bay-Delta Program
LAND USE TECHNICAL REPORT
AFFECTED ENVIRONMENT
AUGUST 25, 1997 DRAFT

1.0 SUMMARY

The CALFED Program Study Area comprises five regions in the State of California: the Delta Region, Bay Region, Sacramento River Region, San Joaquin Valley Region, and the SWP and CVP service areas. The three basic categories of land use identified in this report -- agriculture, open space/habitat, and developed -- account for land uses within these regions to varying degrees, and form the affected environment for potential land use impacts of the CALFED Program.

Both the State of California and local planning jurisdictions govern land use issues related to the CALFED Program. Land use planning regulations include state laws (general plans, zoning, subdivisions, and environmental quality), Delta-specific laws (protection and preservation acts, management programs, and actions plans), and county general plans.

Historical and existing land uses in the five geographic regions identified above generally reflect the State's ongoing challenges between increased urbanization and preservation of open space and other lands.

2.0 INTRODUCTION

2.1 OVERVIEW

The purpose of this technical report is to provide a description of the affected environment for land use. In order to accurately describe the affected environment for land use it will be necessary to define not only the current conditions but also the historical conditions. The historical conditions are described to place current conditions in perspective. The report describes the relevant regulatory context, historical land use trends, and existing general land uses and patterns for the study area. The current and historic conditions will be described in this report for each of the five regions within the study area; Delta Region, Bay Region, Sacramento River Region, San Joaquin River Region, and the SWP and CVP Service Areas. The executive summary contained in this technical report in conjunction with other information, data, and modeling developed during pre-feasibility will be used to prepare the affected environment section of the Programmatic EIR/EIS.

2.2 TERMINOLOGY

This technical report discusses three basic categories of land use: agriculture; open space/habitat; and developed. General definitions for these categories are as follows:

Agriculture comprises those land uses designated for farming. Crop types include: fruit, nut, and vine crops; grain and hay; vegetables; field crops; pasture land; idle land; and other undefined agricultural uses. The U.S. Department of Agriculture, Natural Resources Conservation Service, distinguishes among four basic designations of farmland.

- **Prime Farmland** is land best suited for producing food, feed, forage, fiber, and oilseed crops, and also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built up land or water). Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields or crops economically when treated and managed, including water management, according to modern farming methods.

- **Additional Farmland of Statewide Importance** is land other than Prime Farmland that has a good combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built up land or water).

- **Unique Farmland** is land other than Prime and Additional Farmland of Statewide Importance that is currently used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods. Examples of such crops are citrus, olives, avocados, fruit, and vegetables.

- **Additional Farmland of Local Importance** is land used for the production of food, feed, forage, fiber, and oilseed crops, even though these lands are not identified as having national or statewide importance. These lands are to be identified by a local committee made up of concerned agencies, and called together by the Soil Conservation Service District Conservationist designated as county representative. The local committee will review the lands under this category on at least a five-year basis.

For purposes of this technical report, no distinction is made among these four designations of agricultural uses when describing the affected environment and potential land use impacts of the project alternatives.

Open Space/Habitat comprises those land uses designated as native lands and open water. Native lands include upland native vegetation, riparian and wetland vegetation, and barren lands. Open water includes lakes, reservoirs, rivers, and canals. Typical open space land uses include public parks and wildlife refuges.

Developed comprises those land uses designated for various types of urban development. Principal types of developed uses include residential, commercial, light industrial, and industrial lands, and transportation facilities.

3.0 SOURCES OF INFORMATION

Information for this report was compiled from a variety of sources, including the California Department of Water Resources' *California Water Plan Update* (1994), existing technical studies, County General Plans, and personal communication with offices of the State, regional Councils of Government, and counties. A list of written materials used for preparing this report is provided in Section 5.0, References.

4.0 ENVIRONMENTAL SETTING

4.1 STUDY AREA

The study area for this report comprises the regions identified in Section 2.0. These regions are generally described below.

4.1.1 Delta Region

The Delta has its legal boundaries established in California Water Code Section 12220, and is generally bordered by the cities of Sacramento, Stockton, Tracy, and Pittsburg. The Delta comprises about 738,000 acres, most of which is devoted to farming (about 520,000 acres), and is interlaced with about 700 miles of waterways and an 1,100-mile network of levees designed to protect the Delta's islands and tracts.

Counties in the Delta Region include: nearly all of Contra Costa; about half of both Sacramento and San Joaquin; one-third of Solano; and about one fifth of Yolo. Although no major cities are entirely within the Delta, it does include a portion of Stockton, Sacramento, West Sacramento; the small cities of Antioch, Brentwood, Isleton, Pittsburg, and Tracy; plus about 14 unincorporated towns and villages. The population in the local Delta is about 200,000, most of it in upland areas on the eastern and western fringes.

4.1.2 Bay Region

San Francisco Bay -- including Suisun, San Pablo, Central, and South bays -- extends about 85 miles from the east and Chipps Island, near the City of Antioch westward and southward to the mouth of Coyote Creek, near the City of San Jose. The Golden Gate connects San Francisco Bay with the Pacific Ocean. The surface area of San Francisco Bay is about 400 square miles at mean tide.

Counties in the Bay Region include: Alameda; about 2% of Contra Costa; Marin; Napa; San Francisco; San Mateo; Santa Clara; and Sonoma. The Bay area is one of the largest metropolitan areas in the United States, with a population estimated to reach 6.7 million by 2005.

4.1.3 Sacramento River Region

The Sacramento River Region extends from Shasta Lake at the end of the Sacramento Valley to the Delta, and encompasses the drainage areas of the Sacramento River. Valley lands comprise the western drainage of the Sierra Nevada and the Cascade Range, the eastern drainage of the Coast Ranges, and the Valley floor.

Counties in the Sacramento River Region include: Butte; Colusa; Glenn; Lake; Lassen; Nevada; Placer; Plumas; about half of Sacramento; Shasta; Sierra; about three-fourths of Solano; Sutter; Tehama; most of Yolo; and Yuba. The 1985 population for the Sacramento Valley region exceeded 1.8 million. Urban areas include Sacramento,

West Sacramento, Redding, Chico, Davis, Placerville, Woodland, Roseville, Yuba City, Auburn, Marysville, Oroville, Willows, Red Bluff, Quincy, Nevada City, and Alturas.

4.1.4 San Joaquin River Region

The San Joaquin River Region comprises most of California's Central Valley. Counties in the San Joaquin River Region include: Amador; Calaveras; Fresno; Kern; Kings; Madera; Mariposa; Merced; about half of San Joaquin; Stanislaus; Tuolumne; and Tulare. Urban areas include the cities of Bakersfield, Fresno, Visalia, and Merced. The population of the Region was about 1.4 million in 1990.

4.1.5 SWP and CVP Service Areas Outside Central Valley

The SWP is a water conveyance system that includes storage facilities, pumping plants, pumping-generating plants, hydroelectric power plants, and various canals and pipelines. The SWP captures and conveys water from the Feather River watershed and the Sacramento-San Joaquin Delta to areas of need in the San Francisco Bay area, the San Joaquin Valley, southern California, and the Central Coast. CVP facilities include several dams and reservoirs built between the 1930s and 1960s by a combination of state and federal agencies

Counties in SWP and CVP Service Areas Outside the Central Valley include: Imperial; Los Angeles; Orange; Riverside; San Bernardino; San Diego; San Luis Obispo; Santa Barbara; and Ventura.

The 30 long-term water supply contractors of the SWP are organized into six service areas: Feather River, North Bay, South Bay, Central Coast, San Joaquin Valley, and Southern California. The Feather River service area has area-of-origin priorities for SWP supplies. The other service areas are described briefly below:

- North Bay Service Area: The North Bay service area is located at the northern end of San Francisco Bay. Napa and Solano counties make up the total service area and encompass 1.1 million acres.

- South Bay Service Area: The South Bay service area includes portions of Alameda and Santa Clara counties around the southern half of San Francisco Bay. Counties in the South Bay service area encompass about 1,184,000 acres.

- Central Coast Service Area: The Central Coast Service Area, consisting of San Luis Obispo and Santa Barbara Counties, encompasses about 3.9 million acres.

- San Joaquin Valley Service Area: The San Joaquin Valley service area, which occupies the southern part of the San Joaquin Valley, is situated primarily in Kern and Kings Counties, and includes a very small area of Stanislaus County.

- Southern California Service Area: The Southern California service area includes Ventura, Los Angeles, and Orange Counties; and parts of San Diego, Riverside, Imperial, San Bernardino, and Kern Counties.

4.2 REGULATORY CONTEXT

Several State laws establish the basic legal framework governing land use

planning in California. These laws are summarized in Section 4.2.1. Regulations specific to the Bay-Delta are summarized in Section 4.2.2. County general plans are discussed in Sections 4.3 through 4.7, as applicable to a given region.

4.2.1 State of California

Land use planning in California is governed principally through the following state laws (references are to the Government Code unless otherwise noted):

- establishment of planning agencies, commissions, and departments (65100 et seq.);
- general plans and specific plans (65300 et seq.);
- zoning regulations (65800 et seq.);
- Subdivision Map Act (66410 et seq.); and
- California Environmental Quality Act (Public Resources Code 21000 et seq,).

Laws and statutes governing procedure are established by the Ralph M. Brown Act (54950 et seq.), property development agreements (65864 et seq.), and the Permit Streamlining Act (65920 et seq.).

Planning agencies, commissions, and departments are established by cities, counties, regional agencies, and the State to review matters related to planning and development. Responsibilities may include: preparing and updating general, community, or specific plans; preparing and revising zoning ordinances; acting on subdivision maps; reviewing capital improvements programs; evaluating the appropriateness of land acquisition or disposal; undertaking special studies; and coordinating with other public agencies.

General Plans set forth goals, objectives, principles, and standards for the comprehensive, long-term development of cities and counties. General Plans must include the following mandatory elements: land use; circulation; housing; conservation; open space; noise; and safety. Optional elements may be added as appropriate. Specific Plans establish goals and policies for more-defined geographical areas or communities.

Zoning regulations divide cities into various districts for the purpose of applying different regulations in those districts. Zoning regulations may generally be divided into two classes: 1) those which regulate the structural and architectural design of buildings; and 2) those which prescribe the use to which buildings within certain designated districts may be put. With certain exceptions, a city's zoning must be consistent with its general plan.

The Subdivision Map Act governs the division of land for the purpose of sale, lease, or financing. With certain exceptions, such division of property requires city approval of the tentative subdivision map, and filing with the County Recorder of a final map based on a qualified survey of the land to be subdivided.

The California Environmental Quality Act requires environmental review of a project to: 1) inform decision makers and the public about the potential environmental effects of proposed activities; 2) identify ways in which adverse environmental effects can be avoided or significantly reduced; 3) prevent significant, avoidable environmental

damage by requiring changes in projects, adopting alternatives, or imposing mitigation measures; and 4) disclose to the public why a project was approved if that project would have significant environmental effects.

Procedures under by the Ralph M. Brown Act establish requirements to be followed by local agencies in conducting their meetings. Pursuant to the Act, all meetings must be open and public. Property development agreement procedures establish the rules by which local agencies may enter into, modify, and terminate such agreements with developers. The Permit Streamlining Act applies to certain local land use decisions and requires a city to follow a standardized process, finish their reviews, and make their decisions on development projects within strict time limits.

4.2.2 Bay-Delta

Both the State of California and local planning jurisdictions (six counties and six cities) govern land in the Bay-Delta Region. The California State Legislature passed laws resulting in State policy that guides land uses in the study area. Local jurisdictions govern land use through general plans and the development review process. Several State and federal agencies also have jurisdiction for certain resources such as water quality and biological resources.

California Delta Protection Act of 1992

The California State Legislature passed the Delta Protection Act of 1992, which created the Delta Protection Commission (Commission) to provide regional coordination. The Commission developed the long-term Land Use and Resource Management Plan for the Primary Zone of the Delta. The 487,265-acre Delta Primary Zone (71% of the legal Delta) and 250,614-acre Delta Secondary Zone are shown in Figure 3.2-1 (Delta Protection Commission 1995). The following are relevant land use goals provided in the management plan:

- Preserve and protect the natural resources of the Delta, including soils. Promote protection of remnants of riparian habitat. Promote seasonal flooding and agricultural practices on agricultural lands to maximize wildlife use of the hundreds of thousands of acres of land in the Delta. Promote levee maintenance and rehabilitation to preserve the land areas and channel configurations in the Delta.

- Protect the unique character and qualities of the Primary Zone by preserving the cultural heritage and strong agricultural base of the Primary Zone. Direct new residential, commercial, and industrial development within the existing communities as currently designated and where appropriate services are available.

- Support long-term viability of commercial agriculture and discourage inappropriate development of agricultural lands.

All local general plans for areas within the Delta Primary Zone are required to be consistent with the regional plan. These include plans within the following local jurisdictions: Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties (Figure 3.2-2). Plans for areas located in the Delta Secondary Zone (Alameda county) are not required to be consistent with the regional plan. (California Department of Water Resources 1993a).

California Suisun Marsh Preservation Act of 1974

The California State Legislature recognized the threat of urbanization to the Suisun Marsh and enacted the Suisun Marsh Preservation Act in 1974 (Act) which required that a protection plan be developed for the Marsh. The Act directed the San Francisco Bay Conservation and Development Commission (BCDC) and the California Department of Fish and Game (DFG) to prepare the Suisun Marsh Protection Plan (Protection Plan) "to preserve the integrity and assure continued wildlife use" of the Suisun Marsh. The Protection Plan objectives are to preserve and enhance the quality and diversity of the Suisun Marsh aquatic and wildlife habitats and to ensure retention of upland areas adjacent to the Marsh in uses compatible with its protection (San Francisco Bay Conservation and Development Commission 1976).

Suisun Marsh Plan of Protection

In 1978, the State Water Resources Control Board issued Decision 1485 (D-1485), which set water salinity standards for Suisun Marsh from October through May to preserve the area as a brackish water tidal marsh and to provide optimum conditions for plant production as food for waterfowl. Decision D-1485 also placed operational conditions on the water rights permits of the federal Central Valley Project (CVP) and State Water Project (SWP). Order 7 of the decision required the permittees to develop and fully implement a plan, in cooperation with other agencies, to ensure that the channel salinity standards are met. (California Department of Water Resources 1994b).

In response to D-1485. the U.S. Bureau of Reclamation, California Department of Water Resources, DFG, and Suisun Resource Conservation District (with significant input from the U.S. Fish and Wildlife Service) prepared the Suisun Marsh Plan of Protection Including and Environmental Impact Report in 1984 (Plan of Protection). The Plan of Protection proposes staged implementation of several activities such as water quality monitoring, a wetland management program for marsh landowners, physical facilities for water supply, and supplemental releases of water from CVP and SWP reservoirs. The four agencies that prepared the Plan of Protection entered into the Suisun Marsh Preservation Agreement as authorized by an Act of Congress in Public Law 99-546 (California Department of Water Resources 1994b).

The Suisun Marsh Management Program

The Suisun Resource Conservation District (SRCD) and DFG sponsored Senate Bill (SB) 1981, which required a long-range protection plan for the Suisun Marsh. The bill was enacted and gave BCDC responsibility for implementation of the Protection Plan and SRCD local responsibility over habitat management practices in the Suisun Marsh. In 1980, SRCD prepared the Suisun Marsh Management Program, which is designed to preserve, protect, and enhance the plant and wildlife communities within the primary management area of the Suisun Marsh. (Suisun Resource Conservation District 1980).

Delta Action Plan and Watercourse Use Program

The five primary counties of the Delta region (Contra Costa, Sacramento, San Joaquin, Solano, and Yolo) organized the

Delta Advisory Planning Council, which, in 1976, produced the Delta Action Plan and Watercourse Use Program, a preliminary comprehensive resource plan and program for the Sacramento and San Joaquin Delta. The Delta Action Plan identifies a number of areas of significant recreational and scenic value including Sandy Beach Park, Prospect Slough, Lindsey-Haas-Barker Sloughs, Sacramento River Bluffs, and State Route 84 Ryer Island (Solano County Planning Department 1995).

Primary Zone of the Delta

All public and private management and development activities within the Primary Zone of the Delta shall be consistent with the goals, policies, and provisions of the "Land Use and Resource Management Plan for the Primary Zone of the Delta" as adopted and as may be amended by the Delta Protection Commission.

Local Counties

The 865,724-acre study area shown in Figure 3.2-1 comprises portions of six counties: Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo. The following are brief descriptions of the relevant local general plans and specific goals for the study area. Specific policies for the study area vary considerably among the jurisdictions; some have several policies and others have few.

Alameda County General Plan

A 4,676-acre portion of the study area (entirely within the Delta Secondary Zone) is in Alameda County (California Department of Water Resources 1993b). The East County Area Plan, adopted in May 1994, does not include any specific goals or policies relevant to the legal Delta or Suisun Bay/Marsh (Alameda County Planning Department 1994).

Contra Costa County General Plan

A 112,988-acre portion of the legal Delta area (46,793 acres within the Delta Primary Zone and 66,357 acres within the Delta Secondary Zone) is in Contra Costa County (California Department of Water resources 1993b). The Contra Costa County General Plan 1990-2005 was adopted in January 1991 (Contra Costa County Community Development Department 1991). The general plan includes the following goal relevant to the Delta and Suisun Bay and Marsh.

Sacramento County General Plan

A 118,594-acre portion of the study area (95,301 acres within the Delta Primary Zone and 23,293 acres within the Delta Secondary Zone) is in Sacramento County (California Department of Water Resources 1993b). The County of Sacramento General Plan was adopted in December 1993 and includes the following goals and objectives relevant to the Delta (Sacramento County Planning and Community Development Department 1993):

- agriculturally productive Delta soils protected from the effects of oxidation, shrinkage, and erosion;
- healthy, well-managed marsh and riparian woodlands along Sacramento County's waterways;
- marsh and riparian habitat protected;
- a 10 percent increase in marsh and riparian woodland habitat by 2010;

- riverbanks stabilized to protect levees and riparian values; and

- agriculturally productive Delta soils protected from the effects of oxidation, shrinkage, and erosion.

Delta Community Area Plan

The Delta Community Area Plan (Area Plan) is part of the Sacramento County General Plan and was adopted in March 1983 (Sacramento County Planning Department 1983). The Area Plan is intended to augment the Sacramento County General Plan and to provide specific direction for implementing its goals and policies to the Delta area. The Area Plan does not contain specific goals for the Delta, but refers to the goals and policies described in the Sacramento County General Plan.

San Joaquin County General Plan

A 317,902-acre portion of the study area (188,524 acres within the Delta Primary Zone and 129,379 acres within the Delta Secondary Zone) is in San Joaquin County (California Department of Water Resources 1993b). The San Joaquin County General Plan was adopted in July 1992 and includes the following objective relevant to the Delta (San Joaquin County Planning Division 1992); ensure the preservation of the Delta and the opportunity for the public to learn about and enjoy this unique recreation resource.

Solano County General Plan

A 92,557-acre portion of the legal Delta (86,200 acres within the Delta Primary Zone and 6,357 acres within the Delta Secondary Zone) is in Solano County (California Department of Water Resources 1993b). The Solano County Land Use and Circulation Element, part of the Solano County General Plan, was adopted in November 1980 and was last amended in July 1995 (Solano County Planning Department 1995). The land use and circulation element of the general plan includes the following goals and objectives relevant to the Delta and Suisun Bay and Marsh.

- Maintain and enhance environmental quality of Solano County as it relates to the use of land, water, and air by managing and preserving the diverse natural resources of the county and the use and enrichment of the lives of present and future generations.

- Preserve and enhance the quality and diversity of marsh aquatic and wildlife habitats.

- Preserve and enhance the water resources available to Solano county and protect significant waterways and their habitats.

Yolo County General Plan

A 91,775-acre portion of the study area (74,956 acres within the Delta Primary Zone and 16,819 acres within the Delta Secondary Zone) is in Yolo County (California Department of Water Resources 1993b). The Yolo County General Plan was adopted in July 1983 and includes the following goal relevant to the Delta and Suisun Bay and Marsh (Yolo County Community Development Agency 1983): conserve and manage water resources (groundwater, stream, and the Delta).

Local Cities and Communities

Six incorporated cites, Antioch, Brentwood, Isleton, Pittsburg, Rio Vista, and Tracy, are located entirely within the legal

Delta and three incorporated cities. Sacramento, Stockton, and West Sacramento, are located partially within the Delta (Figure 3.2-2) (California Department of Water Resources 1993a). Each incorporated city has a local general plan with goals and policies specific to its jurisdiction.

Fourteen unincorporated towns and villages are located within the legal Delta, the most notable being on Andrus-Brannan, Bethel, Byron, Grand, Hotchkiss, and New Hope Islands (California Department of Water Resources 1993a). These unincorporated areas have not adopted general plans for their communities.

4.3 DELTA REGION

The purpose of this section is to describe the affected environment associated with land use in the San Francisco Bay/ Sacramento-San Joaquin Delta (Delta) region (Figure 3.2-1). For purposes of this discussion, this region includes the 738,238-acre legal Delta and the 127,485-acre Suisun Marsh and Bay, totaling 865,724 acres.

4.3.1 Historical Perspective

Land Use Prior to 1850

Until the 1850s, the Delta region was mostly a tidal marsh, part of an interconnected estuary system that included the Suisun Marsh and San Francisco Bay. During the flood season, the Delta became a great inland lake, and when the floodwaters receded, the network of sloughs and channels reappeared throughout the marsh. Land surveys were the first step in developing the Delta. The Delta channels were surveyed in 1841 and again in 1849 by the U.S. Navy. These surveys facilitated transportation and helped open the Delta and upstream communities to increased trade with the San Francisco Bay area. Already experiencing a population boom because of the Gold Rush, Delta and northern California communities expanded even more as travel to the area became easier and less expensive (California Department of Water Resources 1994b).

Land Use after 1850

The Delta, 1850-1920

Historical records indicate agriculture and irrigation development in the study area began in the mid-1800s. Prior to the extensive levee system and water development facilities in the Delta, agriculture in the region consisted primarily of dryland farming or irrigated agriculture from artesian wells, groundwater pumping, and some creek canals. Reports indicate that the number of irrigated acres in the Sacramento Valley and San Joaquin River Basin regions were gradually increasing from the 1880s through the 1920s.

Development of the Delta began in late 1850 when the Federal Swamp Land Act conveyed ownership of all swamp and overflow land, including Delta marshes, from the federal government to the State of California. Proceeds from the State's sale of swampland were to go toward reclaiming them, primarily for conversion to agricultural land. In 1861, the State legislature created the Board of Swamp and Overflowed Commissioners to manage reclamation projects. In 1866, the board's authority was transferred to county boards of supervisors. The first reclamation projects began in 1869, when developers constructed 4-foot-high by 12-foot-wide levees on Sherman and Twitchell Islands using the past soils of the Delta. Since then, levee construction has improved and expanded to

1,100 miles throughout the Delta to protect agricultural and urban lands against flooding (California Department of Water Resources 1993a, 1994b).

Shortly after the completion of the levees in 1913, the construction of a complicated series of human-made waterways and water development facilities began in the Delta. The purpose of constructed waterways was to provide navigation, improve water circulation, or to obtain material for levee construction. Water development facilities were constructed to ship water from the Delta to other parts of the State for agricultural, urban, and other uses (California Department of Water Resources 1993a).

Suisun Marsh, 1850-1930s

Reclamation of Suisun Marsh lands began in 1850 with construction of levees to reclaim land for agricultural use. By 1930, 44,600 acres had been developed. During this period, the generally good quality of the water available in the marsh made growing beans, tomatoes, asparagus, corn, and wheat both practical and profitable. However, by the early 1930s, most commercial agriculture in the marsh ceased because upstream water intrusion and development had reduced freshwater overflows from the Delta, resulting in greater tidal intrusion of highly saline water from San Francisco Bay. This, in turn, produced salt levels in the soils that exceeded the tolerance of commercial crops (Suisun Resource Conservation District 1980.)

Land Use from the 1920s to 1950

Accounts of urban land development (i.e., urban acreage calculations) in California were not recorded and, therefore, are not readily available prior to 1920. In general, the San Francisco Bay and southern California geographic regions were developing into urban centers, Urban development in the Central Valley also began during this period, following construction of the railroads.

In the study area, the extensive levee system, constructed waterways (e.g., contra Costa Canal, Stockton Deep Water Channel), water development facilities, groundwater development, and railroads enabled irrigated agriculture and urban communities to extend deeper into the Delta. Between 1920 and 1950, irrigated agriculture development increased rapidly from 2.7 million acres to over 4.7 million acres for the entire Central Valley. During the same period, urban land use also expanded. Private water development projects by cities and utility districts assisted in the expansion of urban development throughout California.

Land Use Since 1950

The expansion of irrigated agriculture and urban growth has continued since 1950. Increased water development projects, such as CVP and SWP, in addition to local water projects, secured more dependable water supplies for the Central Valley and Southern California regions. However, more recently, urban development has surpassed agricultural development, encroaching on agricultural land and reducing the total amount of agricultural land in the Delta (California Department of Water Resources 1993b).

Between 1976 and 1993, the total agricultural land in the legal Delta was reduced by about 14,500 acres, almost all of which occurred in the Secondary Zone. The areas where large acreages of agricultural land were reclassified to urban lands were

the Brentwood and Oakley area in Contra Costa County, the Pocket area in Sacramento County adjacent to the Sacramento River, the West Sacramento area in Yolo County, and the Stockton and Tracy areas in San Joaquin County. A significant amount of natural open-space land (about 25,000 acres) was reclassified to agricultural land, two-thirds of which occurred in the Primary Zone. A similar amount of acreage was reclassified from agriculture to native land, with the majority occurring in the central part of the Delta (California Department of Water Resources 1993b.)

Between 1976 and 1993, urban land in the legal Delta increased by approximately 22,700 acres, again with the majority occurring in the Delta Secondary Zone. In 1993, there were about 44,400 acres of land classified as urban land and 83,000 acres classified as native land in the legal Delta the majority of which were located in the Delta Secondary Zone and Delta Primary Zone, respectively. Since 1976, approximately 12,000 acres of native land, mostly in the Secondary Zone, was lost in the legal Delta (California Department of Water Resources 1993b). Table 4.3-1 summarizes the land use acreage changes between 1976 and 1993.

Table 4.3-1 Land Use Acreage Changes Between 1976 and 1993 in the Legal Delta

Land Use	1976	1993	Net Change
Agriculture	541,820	527,309	-14,511
Urban	44,474	67,219	+22,745
Open Space	95,021	82,846	-12,175
Water Surface	57,178	61,119	+3,941
Source: California Department of Water Resources 1993b.			

Suisun Marsh

Although current agricultural practices include some cattle grazing and limited dry farming of grain crops where suitable soils exists, most of the reclaimed marshland has been converted to private duck clubs and State wildlife areas, both of which use the levee systems developed for agriculture as a management tool to provide habitat for wildlife (Suisun Resource Conservation District 1980).

In summary, prior to the 1850s, the Delta was an extensive tidal marsh that was subject to seasonal flooding. Land surveys conducted in the 1840s facilitated travel and development of the Delta. The construction of levees to reclaim the Delta began in 1869 and continued through 1913. The protection that levees provided against flooding allowed for irrigated agriculture and urban communities to develop at the expense of open space/native lands. The amount of irrigated agricultural and urban lands in the Delta increased steadily through the 1950s. In less than 100 years, hundreds of thousands of acres of land went into agricultural production; however, since the 1950s, the land use trends in the Delta

region include a reduction in agricultural acreage, an increase in urban development and acreage, and the continued loss of open-space lands. Today the vast majority of Suisun Marsh is open-space lands and wetlands (managed wetlands, tidal marshes, and seasonal marshes) (California Department of Water Resources 1994a).

4.3.2 Existing Resources and Conditions

A summary of existing land uses in the study area is shown in Table 4.3-2.

Agricultural Uses

Today, the legal Delta comprises about 500,000 acres of rich farmland, much of which is now below sea level (California Department of Water Resources 1994b). Agricultural lands in the Suisun Marsh and Bay total less than 2,000 acres (California Department of Water Resources 1994a).

The study area's rich peat and mineral soil supports several types of agriculture (California Department of Water Resources 1993b). Table 4.3-3 summarizes the types of agriculture in the study area.

Table 4.3-2 Types of Land Use in the Study Area

Type of Land Use	Approximate Acres in Study Area (% of study area)
Agriculture	546,270 (63%)
Open space	247,900 (29%)
Urban development	71,330 (8%)
Source: California Department of Water Resources 1991, 1994a.	

Table 4.3-3 Agriculture in the Study Area

Crop Type	Approximate Acres in Study Area (% of study area)
Fruit/nut/vine crops (e.g., apples, cherries, walnuts, almonds, table grapes, wine grapes)	32,407 (4%)
Grain and hay crops (e.g., rice, barley, wheat, oats)	97,440 (11%)
Vegetable crops (e.g., artichokes, asparagus, tomatoes, melons)	82,940 (10%)
Field crops (e.g., flax, sunflowers, corn, hops)	181,500 (21%)
Pasture land (e.g., alfalfa, clover, mixed and native pasture)	110,510 (13%)
Idle land	33,600 (4%)
Other agriculture (undefined agriculture use)	7,800 (less than 1%)
Source: California Department of Water Resources 1991, 1994a.	

Crop Trends

The types of crops grown in the Delta region have changed over time. Early crops (i.e., prior to 1950s) were grains, fruits, and vegetables that were marketed to nearby cities. Specialty crops such as wheat, barley, beans, and potatoes, were also grown in the Delta region. A greater variety of crops were planted in the Delta as they grew in popularity (e.g., asparagus, sugar beets, tomatoes, and celery) (Delta Protection Commission 1995). Currently, the Delta region raises over 70 different types of grains, fruits, nuts, and vegetables (California Department of Water Resources 1993b).

Open Space

For purposes of this discussion, existing open space in the study area consists of native lands and open water (Table 4.3-4).

Native Lands and Open Water

Approximately 248,000 acres of native land (upland native vegetation, riparian and wetland vegetation, and barren lands) are located in the study area, most of which occur along some sloughs, rivers, and small channel islands in Contra Costa and San Joaquin Counties (California Department of Water Resources 1991, 1994a). The more than 300,000 acres of open water in the study area are located throughout the Delta (California Department of Water Resources 1991, 1994a). The following table summarizes the types and amount of open-space/native land in the study area.

Table 4.3-4 Open-Space/Native Lands in the Study Area

Type	Approximate Acres in Study Area (% of study area)
Upland native vegetation	33,200 (4%)
Riparian and wetland vegetation	97,100 (11%)
Open water (e.g., lakes, reservoirs, rivers, canals)	91,478 (11%)
Sources: U.S. Fish and Wildlife Service 1985; University of California, Santa Barbara 1991; and California Department of Water Resources 1991, 1994a.	

Public Parks And Wildlife Refuges

Much of the open space in the Delta is used for public parks and wildlife refuges. The California State Department of Parks and recreation owns 5,000 acres in the Delta, including Brannan Island, a State recreation area since 1954; Franks Tract (flooded) for recreation; Delta Meadows, a scenic waterway near Locke, popular with boaters; and over 1,000 acres in the Stone Lakes Wildlife Refuge (Delta Protection Commission 1995).

Significant amounts of acres in the Delta Primary Zone have been purchased in recent years by State, federal, and nonprofit agencies for enhancement and management

as wildlife habitat. For example, DFG owns 8,080 acres of land in the Delta Primary Zone including underwater land in the Lower Sherman Island Wildlife Area, portions of the Yolo Bypass, Woodbridge Ecological Reserve, Calhoun Cut Ecological Reserve, and Webb Tract Berms and Islands, along with several small islands.

Approximately 59% of the total area within the statutory boundaries of Suisun Marsh is publicly owned by State and federal agencies and approximately 41% is privately owned by hunting clubs and other landowners including ranchers (Suisun Resources Conservation District 1980, Solano County Farmlands and Open Space Foundation 1989). DFG owns and manages approximately 15,300 acres in the Suisun Marsh. Grizzly Island Wildlife Area is open to the public for hunting seasons prescribed by the State of California. Also included within the 15,300 acres are approximately 13,150 acres owned and operated by DFG for recreational uses. Areas within the march that are managed by DFG include portions of Grizzly Island and Joyce Island, Hill Slough Wildlife Area, Montezuma Slough, and Peytonia Slough Ecological Reserve. The privately owned 2,070-acre Rush Ranch, located at the north end of Suisun Marsh, was acquired by the Solano County Farmlands and Open Space Foundation in the late 1980s and was developed for recreational and educational uses.

Developed Uses

Approximately 71,000 acres of the study area are developed for urban uses, with most of the development located on the periphery of the study area in Sacramento, San Joaquin, and Contra Costa Counties. The majority of urban development is located in the legal Delta, with less than 1,800 acres of developed land in the Suisun Marsh and Bay area. Urban development includes residential, commercial, industrial, and other urban uses. Table 4.3-5 summarizes the types and amount of urban development in the study area.

Table 4.3-5 Developed Lands in the Study Area

Urban Development Type	Approximate Acres in Study Area (%) of the Study Area
Residential (e.g., one-and two-family units including trailer courts)	4,830 (0.6%)
Commercial (e.g., retailers, hotels, apartments, institutions)	1,660 (0.2%)
Industrial (e.g., manufacturing, extractive industries, sewage treatment plants)	6,340 (0.7%)
Other (freeways, airports, cemeteries, vacant land, undefined urban development)	58,510 (6.8%)
Sources: California Department of Water Resources 1991, 1994a.	

Much of the urban development in the study area is located in the incorporated cities. (Antioch, Brentwood, Isleton, Pittsburg, Rio Vista, and Tracy are located entirely within the Delta and Sacramento, Stockton, and West Sacramento are located partially within the legal Delta), and the 14 unincorporated communities within the legal

Delta (Discovery Bay, Oakley, Bethel, Courtland, Freeport, Hood, Ryde, Walnut Grove, Byron, Terminous, Thornton, Hastings Tract, and Clarksburg) (California Department of Water Resources 1993a).

4.4 BAY REGION

4.4.1 Historical Perspective

Prior to the 1940's, land uses in the Bay Region were principally urban in the City of San Francisco, and rural in other portions of the Region. Over the last 50 years, however, land uses throughout the Region have become progressively more urbanized. Post-World War II urbanization in the metropolitan San Francisco area was the principal catalyst for this development, along with growth in the cities of Oakland and San Jose. Since the 1970's, the southern portion of the Bay Region has become a hub for companies providing high-technology products and services. Suburban sprawl, characterized by low density residential and light manufacturing land uses, occupies much of the Bay Region outside of the San Francisco area.

4.4.2 Current Resource Conditions

The Bay Region comprises the San Francisco Bay Hydrologic Region (excluding that portion described as part of the Delta Region in Section 4.3). Land uses in the Bay Region are diverse, and include the Napa Valley and Sonoma County wine industry; international business and tourism in San Francisco; technological development and production in the Silicon Valley; as well as urban, suburban, and rural living. Urban land accounts for about 23 percent (655,600 acres) of the land area. Major urban areas include the San Francisco, Oakland, and San Jose metropolitan areas. There are large undeveloped areas in the western, northern, and southern parts of the region. Forecasted land use reflects an increase in urban areas to 870,900 acres, or 37 percent of the region's land area, by 2020. Federal and State parks and reservoirs make up a small portion of the total region.

Agricultural land use in the region is strongly influenced by climactic and urban growth factors. Irrigated agricultural land in 1990 was about 61,400 acres, and comprised a wide variety of crops. In the North Bay (the northern portion of the Region), vineyards account for over three-fourths of the irrigated acres in Sonoma and Napa counties. There are about 4,200 acres of pasture and 3,900 acres of deciduous trees (primarily walnuts, prunes, and pears in Solano County) in the North Bay. The coastal area of the South Bay (the southern portion of the Region) supports rangeland, flowers, and high-value specialty vegetables, such as artichokes. Vegetables, flowers, vineyards, and suburban ranchettes with irrigated pastures are found in the Santa Clara Valley. Alfalfa, truck crops, and wine grapes are grown in the Livermore Valley.

The distribution of general land uses in the Bay Region are summarized in Table 4.4-1.

4.5 SACRAMENTO RIVER REGION

4.5.1 Historical Perspective

Agriculture and open space have historically comprised the majority of land in the Sacramento River Region. Since the 1970's, however, urban land uses in the greater metropolitan Sacramento area have begun to supplant some agricultural uses. With the exception of Sacramento County, the Region generally contains large

Table 4.4-1 Types of Land Use in the Bay Region

Type of Land Use	Approximate Acres in Region (% of Region)
Agriculture	61,400 (2%)
Open Space	2,133,435 (75%)
Urban Development	655,600 (23%)
Source: California Department of Water Resources, *California Water Plan Update, Volume 2*, Bulletin 160-93, October 1994.	

quantities of parklands, forests, and other open space, and has preserved its traditionally rural nature.

4.5.2 Current Resource Conditions

The Sacramento River Region comprises the Sacramento River Hydrologic Region (excluding that portion described as part of the Delta Region in Section 4.3); and that portion of the North Coast Hydrologic Region identified as the Trinity River Watershed.

Sacramento River Hydrologic Region

Land uses in the Sacramento River Hydrologic Region are principally agricultural and open space, with urban development focused in the City of Sacramento. More than half the region's population lives in the greater metropolitan Sacramento area. Other fast-growing communities include Vacaville, Dixon, Redding, Chico, and various Sierra Nevada foothill towns. Urban development has occurred along major highway corridors in Placer, El Dorado, Yolo, Solano, and Sutter counties, and has taken some irrigated agricultural land out of production. Suburban ranchette homes on relatively large parcels surround many of the urban areas, and often include irrigated pastures or small orchards.

The region supports about 2,145,000 acres of irrigated agriculture. About 1,847,000 acres are irrigated on the valley floor; the surrounding mountain valleys within the region add about 298,000 irrigated acres (primarily pasture and alfalfa) to the region's total. The region produces a significant amount of the overall agricultural tonnage in California, especially rice, grain, tomatoes, field crops, fruit, and nuts. The largest acreage of any crop is rice, which represents about 23 percent of the total.

Trinity River Watershed

The Trinity River Watershed comprises about 20% of the North County Hydrologic Region. Nearly all of the land area in the Trinity River Watershed is forest or range land.

The distribution of general land uses in the Sacramento River Region are summarized in Table 4.5-1.

Table 4.4-2 Land Use Features of Counties in the Bay Region

County	Agriculture	Open Space	Urban
Alameda	Cropland, located mostly in the East County.	Redwood Regional Park, Anthony Chabot Regional Park, Lake Chabot, Upper San Leandro Reservoir, other parks, watershed lands, and natural resource land uses, extensive hills and open space in the East Valley.	Urban uses in the Cities of Berkeley, Oakland, and Alameda; other urban and suburban areas in San Leandro, Hayward, Pleasanton, Livermore, and Fremont.
Contra Costa	Various cropland in valley areas.	Briones Regional Park, Mt. Diablo State Park, Widcat and Tilden Regional Parks, other undeveloped areas throughout the County.	Urban and suburban areas in the cities of Richmond, Walnut Creek, and Concord. Rural areas in the East County.
Marin	Dairy, cattle, poultry, eggs, lambs, wool, hay, nursery crops, fruits, nuts, and vegetables.	Point Reyes National Seashore, Golden Gate National Recreation Area, Samuel P. Taylor State Park, Mount Tamalpais State Park, Marin Municipal Water District watershed lands.	Generally suburban, with most development along City-Centered Corridor adjacent to Highway 101.
Napa	Principally varietal grapes for premium wines; Napa Valley and Wooden Valley Agricultural Preserves.	Lake Berryessa, several State Parks; majority of the County is undeveloped land.	Suburban uses in the City of Napa; rural uses throughout the County.
San Francisco	Limited agricultural acreage.	Golden Gate Park, Presidio of San Francisco, other parks and open space areas.	High-density residential and commercial development in the City of San Francisco, becoming progressively less dense in other areas of the County.
San Mateo	Crops and specialty crops, livestock grazing, principally in the Coastal Zone.	San Andreas Lake, Upper and Lower Crystal Springs Reservoirs, Half Moon Bay State Beach, other open space preserves managed by the Midpeninsula Regional Open Space District.	Urban and suburban development in the cities of Daly City, San Mateo, Foster City, Redwood City, Palo Alto, and others.
Santa Clara	Nursery crops, mushrooms, cut flowers, fruits, nuts, berries, vegetables, and grains, mostly in the valley areas of South County.	Henry W. Coe State Park, other parks and open space preserves managed by the Midpeninsula Regional Open Space District, and the San Francisco Bay National Wildlife Refuge.	Dense urban development in the City of San Jose; other urban and suburban areas include the cities of Sunnyvale and Santa Clara. High-technology industrial uses throughout the Silicon Valley.
Sonoma	Primarily vineyard with various speciality crops.	Sonoma Coast State Beach, Austin Creek State Recreational Area, Annadel State Park, numerous other state parks and recreational areas.	Urban and suburban uses in Santa Rosa; suburban and rural uses in the cities of Petaluma, Sonoma, Rohnert Park, and others. Rural communities throughout the County.

Table 4.5-1 Types of Land Use in the Sacramento River Region

Type of Land Use	Approximate Acres in Region (% of Region)
Agriculture	2,145,000 (11%)
Open Space	16,754,200 (85%)
Urban Development	862,720 (4%)
Source: California Department of Water Resources, *California Water Plan Update, Volume 2*, Bulletin 160-93, October 1994.	

4.6 SAN JOAQUIN RIVER REGION

4.6.1 Historical Perspective

Prior to the 1960's, land uses in the San Joaquin River Region were principally agriculture and open space, with urban uses limited to small farm communities. Although agriculture and food processing are still the Region's major industries, expansion from the San Francisco Bay area and Sacramento over the past 30 years have resulted in the creation of major urban centers throughout the Region. Open space uses, including national forest and park lands, state parks and recreational areas, and Bureau of Land Management and military properties, have historically comprised about one-third of the Region.

4.6.2 Current Resource Conditions

The San Joaquin River Region comprises two hydrologic regions in California: the San Joaquin River Hydrologic Region (excluding that portion described as part of the Delta Region in Section 4.3); and the Tulare Lake Hydrologic Region.

San Joaquin River Hydrologic Region

Land uses in the San Joaquin River Hydrologic Region are predominantly open space in the mountain and foothill areas, and agricultural in the San Joaquin Valley area. Urban land usage in 1990 totaled 295,300 acres. Urban areas include the cities of Stockton, Modesto, Merced, and Tracy, as well as smaller communities such as Lodi, Galt, Madera, and Manteca. In contrast to the large valley urban centers, separated by flat agricultural fields and linked by freeways, the foothills are sprinkled with small communities connected by small two-lane roads. Off from the north-south trending Highway 49 is a series of roads that lead to Sierra Nevada mountain passes. The western side of the region, south of Tracy, is sparsely populated. Small farming communities provide services for farms and ranches in the area, all relatively close to Interstate 5.

The Sierra Nevada Range includes the El Dorado, Stanislaus, and Sierra National Forests, and Yosemite National Park. The eastern foothills and mountains total about 5,800,000 acres, and the western coastal mountains comprise about 900,000 acres. Public lands amount to about one-third of the region. The national forest and park lands encompass over 2,900,000 acres; state parks and recreational areas and other State-

Table 4.5-2 Land Use Features of Counties in the Sacramento River Region

County	Agriculture	Open Space	Urban
Butte	Various orchard and field crops including see, vegetables, trees, vines, and nursery stock.	Open space includes substantial timber lands; more than one-third of the County is forested. Significant water resource areas include Lake Oroville and the Sacramento River.	Urban areas are centered in the cities of Chico, Oroville, and Paradise. Small communities are scattered throughout the County.
Colusa	Various cropland and rangeland, including rice, orchards, row crops, and cattle and sheep ranches.	About 10% of the Mendocino National Forest is located in the western part of the County. Other open space includes the Snow Mountains Wilderness Area, and wildlife refuges.	Urban uses in the cities of Williams and Colusa; other small communities along the Interstate 5 and State Route 20 transportation corridors.
Glenn	Various field crops, including grain, hay, vines, vegetables, and fruit and nut trees.	The Mendocino National Forest occupies the western part of the County. Other open space includes the Stony Gorge Reservoir, Black Butte Lake, the Sacramento River, and the Sacramento National Wildlife Refuge.	Principal cities are Willows and Orland. Smaller towns are located along the State Route 45 corridor, near the Sacramento River.
Lake	Pears, grapes, and walnuts are the main crops which are grown throughout the entire County.	The Mendocino National Forest occupies the northern third of the County. Other open space includes Clear Lake, Indian Valley Reservoir, and Boggs Mountain State Forest.	The primary urban area in the County is the City of Lakeport. Several smaller communities are located around the perimeter of Clear Lake.
Lassen	The most predominant crops in Lassen County are grain and hay, including wheat, barley, oats, and alfalfa. Timber harvesting and livestock production are also important.	County open space in the Sacramento River Region lies mostly lies west and north of Eagle Lake, and comprises portions of Lassen Volcanic State Park, Lassen National Forest, and Modoc National Forest.	Small communities are scattered throughout the County.
Nevada	Fruit, vegetables, field crops (primarily wine grapes), and nursery, wool, and apiary products.	The Tahoe National Forest occupies the eastern half of the County. The Bear River borders the County to the south.	Primary cities are Grass Valley and Nevada City. Smaller communities align State Routes 20 and 49, and Interstate 80.
Placer	Agricultural land uses are primarily located in the western portion of the County.	Open space includes Folsom Lake State Recreation Area; also timberland located in the eastern portion of the County.	Urban centers include the cities of Roseville, Placerville, and Auburn.
Plumas	Primarily pasture and range land with some field crops, including hay and alfalfa.	The Plumas National Forest covers the majority of the County. Lake Almanor is located in the northwestern portion of the County. Several smaller lakes are scattered throughout the County.	Towns include the cities of Quincy, Greenville, Chester, and Portola. Most smaller communities are located around Lake Almanor, or along State Routes 70 or 89.
Sacramento	Various crops, primarily located adjacent to the Sacramento and Cosumnes Rivers.	Southwest portion of the Folsom Lake State Recreation Area, open space corridors (American River Parkway, Stone Lake/Snodgrass Slough, others).	Urban uses in the City of Sacramento; smaller urban and suburban areas in Folsom, Galt, and Elk Grove.

Table 4.5-2 Land Use Features of Counties in the Sacramento River Region

County	Agriculture	Open Space	Urban
Shasta	Croplands in the Sacramento and Fall River Valley areas, and the irrigated meadows of the Cascade Range; timber harvesting is concentrated in the mountain areas.	Numerous federal and State-owned lands, including Whiskeytown-Shasta-Trinity National Recreation Area, Lassen National Park, Latour State Forest, and others. Other open space includes floodplains and wildlife habitat areas.	Urban development is located primarily in the City of Redding, and along the Interstate 5 and Highway 273 transportation corridors.
Sierra	Primarily pasture and range land with some field crops, including hay and alfalfa.	Nearly all of the County lies within the Tahoe National Forest.	Principal towns are Sierra City and Downieville. Other communities are located along State Route 49.
Solano	The Dixon-Yolano area is the dominant agricultural area of the County. Sugar beets, field corn, and tomatoes are the leading crops. There are also various fruit, nut and seed crops.	Open space along the Sacramento River is located within the Bay-Delta Region. Travis Air Force Base is near the center of the County.	Urban centers are the cities of Fairfield and Vacaville. Smaller communities are located along Interstates 80 and 505.
Sutter	Over 80% of the County's land area is used for farming. Agricultural uses include field crops, seed, vegetables, fruits and nuts, and nursery stock.	Sutter Buttes, a significant landform visible from most of the County; and the Sutter National Wildlife Refuge.	Yuba City and Live Oak are the County's two incorporated cities. Other small communities are scattered throughout the County.
Tehama	Higher value agricultural lands in the Sacramento Valley area include fruit, tree, and field crops. Lesser value lands are located in the upland areas and are used for grazing.	Numerous federal and State-owned lands, including Lassen National Forest, Mendocino National Forest, Black Butte Reservoir, the Tehama Wildlife Management Area, and others.	Urban development is located primarily in the cities of Red Bluff, Corning, and Tehama, along the Interstate 5 and State Route 99 transportation corridors.
Yolo	Diversified farming, beef, and livestock production, including sheep wool, poultry, eggs, and milk. Crops and fruits include almonds, rice, sugar beets, tomatoes, spinach, potatoes, apricots, prunes, apples, pears, and melons.	Flood plain areas under open space protection are located along Putah and Cache Creeks, and in the Sacramento/Yolo Bypass region.	Urbanized areas of the County are centered principally in the cities of Davis, Woodland, and Winters. The Port of Sacramento is located in the southern part of West Sacramento. Small farm community centers are scattered throughout the County.

Table 4.5-2 Land Use Features of Counties in the Sacramento River Region

County	Agriculture	Open Space	Urban
Yuba	Agricultural croplands and pasture, the best of which are located along the Feather River, Bear River, and Reclamation District 10.	Open space is concentrated in the northeast and southwestern portions of the County, and includes timber/forest, various lakes, Beale Air Force Base, the Yuba River Recreation Area, and wildlife areas.	The primary urban center is Marysville. Smaller rural communities are located throughout the County.

owned property account for about 80,000 acres; and Bureau of Land Management and military properties occupy some 221,000 and 37,000 acres, respectively.

The valley constitutes about 3,500,000 acres of the region. About 1,955,000 of the region's 10,200,000 acres were devoted to irrigated agriculture in 1990. Some of the major crops include almonds, alfalfa, pasture, grain, grapes, cotton, and field corn.

Tulare Lake Hydrologic Region

Land uses in the Tulare Lake Region are principally agricultural, with urban development and anticipated population growth focused in the cities of Fresno, Bakersfield, Visalia, and Tulare. Many small agricultural communities dot the eastern side of the southern San Joaquin Valley. Overall, urban uses comprise about 176,300 acres of the region.

State and federal governments own about 3 percent of the land in the region, including about 1,700,000 acres of national forest, 800,000 acres of national parks and recreation areas, and 500,000 acres of land managed by the U.S. Bureau of Land Management. The region's foothills border Kings Canyon and Sequoia National Parks and Sierra National Forest.

Irrigated agriculture accounts for over 3,000,000 acres of the region. Other agricultural lands and areas with native vegetation cover an additional 1,400,000 acres. The principal crops grown in the region are cotton, grapes, and deciduous fruits. Substantial acreages of almonds and pistachios are also grown, as well as increasing acreages of truck crops, such as tomatoes and corn. In the eastern Sierra foothills, agriculture and timber production account for most of the land use. Deciduous and citrus trees are the main agricultural crops in the lower foothills, while timber harvesting occurs throughout many of the higher elevation areas.

The distribution of general land uses in the San Joaquin River Region are summarized in Table 4.6-1.

4.7 SWP AND CVP SERVICE AREAS

4.7.1 Historical Perspective

The development of SWP and CVP Service Areas outside the Central Valley has steadily increased since the 1880's. Urban land uses grew quickly during and after World War II, as the combination of major industries (defense, tourism, entertainment), international trade, and an expanding interstate highway system brought thousands of new residents to the greater Los Angeles and San Diego metropolitan areas.

areas. Since the 1970's, suburban sprawl has grown to comprise the majority of coastal and inland valley land uses. Open space uses, including national forest and park lands, and state parks and recreational areas, have historically comprised about one-third of the Region.

4.7.2 Current Resource Conditions

The SWP and CVP Service Areas outside the Central Valley comprise portions of four hydrologic regions in California: the Central Coast Hydrologic Region (excluding Monterey County, Santa Cruz County, and Benito County); the South Coast Hydrologic Region (excluding a small portion of southeastern San Diego County); the South Lahontan Hydrologic Region (excluding Mono County, Inyo County, and eastern San

Table 4.6-1 Types of Land Use in the San Joaquin River Region

Type of Land Use	Approximate Acres in Region (% of Region)
Agriculture	6,355,000 (31%)
Open Space	13,946,200 (67%)
Urban Development	471,600 (2%)
Source: California Department of Water Resources, *California Water Plan Update, Volume 2*, Bulletin 160-93, October 1994.	

Bernardino County); and the western portion of the Colorado River Hydrologic Region.

Central Coast Hydrologic Region

The Southern Planning Subarea of the Central Coast Hydrologic Region comprises those portions of the Region south of, and including, San Luis Obispo County. Urban land uses in this subarea of the region include the cities of San Luis Obispo, Morro Bay, Santa Maria, Lompoc, and Santa Barbara. Military installations include Vandenberg Air Force Base, and Camp Roberts. The Los Padres National Forest provides recreation and open space land uses. Urban acreage for the entire Hydrologic Region was about 240,100 acres in 1990; about one-half of this acreage (120,000 acres) is estimated to lie in the Southern Planning Subarea.

Intensive agriculture exists in the Santa Maria and lower Santa Ynez valleys; moderate levels of agricultural activity also occur near the South Coast area. Agricultural crops include grapes, vegetables, and truck crops, as well as a thriving flower seed industry. Total irrigated land in the Southern Planning Subarea of the Region was about 145,000 acres in 1990.

South Coast Hydrologic Region

The South Coast is the most urbanized region in all of California. Of the approximate 7,000,000 acres in the Region, about 1,700,000 acres are urban land. Most of the region's coastal plains and valleys are densely populated. The largest cities are Los Angeles, San Diego, Long Beach, Santa Ana, and Anaheim. Areas undergoing increased urbanization include the coastal plains of Orange and Ventura counties, the Santa Clarita Valley in northwestern Los Angeles County, the Pomona/San Bernardino/Moreno Valleys, and the valleys north and east of the City of San Diego.

Open space in the region includes the Angeles, San Bernardino, and Cleveland National Forests, as well as the Santa Monica Mountains and other inland areas. National forests in the region comprise about 1,725,000 acres. Other open space exists in the form of coastal wetlands and lagoons. Prominent rivers in the region include the Santa Clara, Los Angeles, San Gabriel, Santa Ana, Santa Margarita, and San Luis Rey.

Irrigated cropland accounts for about 288,000 acres of the region. The largest amount of irrigated agriculture is in Ventura County, where about 116,600 acres of cropland are cultivated, including

Table 4.6-2 Land Use Features of Counties in the San Joaquin River Region

County	Agriculture	Open Space	Urban
Amador	The predominant crops in Amador County are grapes, prunes, walnuts, oats, grains, and grasses.	The Sierra Nevada dominates the eastern portion of the County. Other open space includes the El Dorado National Forest and numerous other recreational areas.	Small urban areas are at Jackson and Sutter Creek. Rural communities are scattered throughout the County.
Calaveras	In the western half of the County field crops, grapes, and walnuts are the main products.	The Sierra Nevada dominates the eastern portion of the County. Other open space includes the Stanislaus National Forest and numerous other recreational areas.	Small urban areas are at Angels Camp and San Andreas. Rural communities are scattered throughout the County.
Fresno	Agriculture is located primarily on the valley floor between the Friant-Kern Canal and the western range hills.	The Sierra Nevada dominates the eastern portion of the County. Other open space includes Kings Canyon National Park and numerous other recreational areas.	The principal urban area is the City of Fresno. Other communities are located mostly in the Valley area of the County near State Route 99.
Kern	Principal crops are cotton, grapes, and other fruits, also nuts, tomatoes, and corn.	Sequoia National Forest, Red Rock Canyon State Park, and military facilities at Edwards Air Force Base and China Lake .	Urban uses are concentrated in Bakersfield; smaller towns include Ridgecrest, Delano, Buttonwillow, Taft, Tehachapi, and Rosamond.
Kings	Various crop and cultivated lands, including orchards and vineyards.	Kettleman State Recreation Area, and the California Aqueduct which traverses the southwestern portion of the County.	Small urban areas in Lemoore, Hanford, Corcoran, and Kettleman City. Other small communities are sparsely located in the County.
Madera	Major crops include almonds, alfalfa, pasture, grain, grapes, cotton, and corn.	The Sierra Nevada dominates the eastern portion of the County. Other open space includes the southeastern portion of Yosemite National Park, the Millerton Lake State Recreational Area, and the San Joaquin River.	Principal urban areas are the cities of Madera and Oakhurst. Other small communities are sparsely located in the County.
Mariposa	In the western half of the County various fruit and nut crops (among them apples and grapes) are the most predominant.	The Sierra Nevada dominates the eastern portion of the County. Open space includes the middle portion of Yosemite National Park, Lake McClure, and the Merced River.	The City of Mariposa is the principal urban area in the County. Other small communities are sparsely located throughout the County.
Merced	The main crop products are vegetables and nuts, including tomatoes, potatoes, and almonds. Cattle and dairy products are among the dominant agricultural practices.	San Luis Reservoir State Recreation Area, Yosemite Lake, and Castle Air Force Base.	Principal urban areas are the cities of Merced and Los Banos. Other communities are located mostly along State Routes 99 and 152.

Table 4.6-2 Land Use Features of Counties in the San Joaquin River Region

County	Agriculture	Open Space	Urban
San Joaquin	Production of fruit and nut crops, field crops, and livestock are the most dominant types of agriculture in the San Joaquin Valley.	The Stanislaus River separates San Joaquin County from Stanislaus County. The majority of open space and recreational areas are located in the northern portion of the County, within the Delta Region.	The cities of Stockton, Lodi, and Manteca are the primary urban areas. Other small cities and communities are distributed across the County.
Stanislaus	Top producer of milk, eggs, chickens, and turkeys. Various crops including almonds, walnuts, peaches, beans, tomatoes, silage, and cherries.	Several rivers traverse the County, including the Stanislaus River, San Joaquin River, and Tuolumne River. Open space is also provided at the Turlock Lake State Recreation Area.	The cities of Modesto and Turlock are the primary urban areas. Other small cities and communities are located along the Interstate 5 corridor and in other parts of the County.
Tuolumne	Due to the high elevation, cattle and forest products are the main agricultural practices. Apples are the largest fruit crop and there is a small production of peaches and nectarines.	The Sierra Nevada dominates the eastern portion of the County. Open space includes the northern portion of Yosemite National Park, Cherry Lake, the Stanislaus River, and the Don Pedro Reservoir.	Primary urban areas are the cities of Sonora and Twain Harte. Other small communities are sparsely located throughout the County.
Tulare	Tulare County's most productive crops are grapes, orchards (oranges, nectarines, plums, peaches) and nuts (almonds and walnuts).	The Sierra Nevada dominates the eastern portion of the County. Open space includes Sequoia National Park, Sequoia National Forest, and numerous other recreational areas.	The cities of Visalia, Tulare, and Lindsay are the principal urban areas. Other communities are located mostly in the Valley area of the County near State Routes 99, 198, and 63.

vegetables, strawberries, citrus, and avocados. The San Diego Planning Subarea has more than 110,600 acres in irrigated agriculture, most of which is planted in citrus and avocados.

South Lahontan Hydrologic Region

SWP and CVP Service Areas in the South Lahontan Hydrologic Region comprise the eastern portion of Kern County, the northeast portion of Los Angeles County, and western San Bernardino County. The region is a closed basin with many desert valleys and small mountain ranges. Although not densely populated, the region contains many growing urban areas, including the cities of Lancaster and Palmdale in the Antelope Valley of Los Angeles County, and the Victor and Apple Valleys of San Bernardino County. Other urban areas include the cities of Bishop, Ridgecrest, and Barstow. Military installations include Edwards Air Force Base, Fort Irwin, and the China Lake Naval Weapons Center.

The entire South Lahontan Region comprises about 18,600,000 acres; about one-third of this acreage (6,200,000 acres) is estimated to lie in the region's SWP and CVP Service Areas. Urban and suburban uses for the entire region totaled about 170,000 acres in 1990; about three-fourths of this acreage (127,500 acres) is estimated to lie in the region's SWP and CVP Service Areas.

Moderate levels of irrigated agriculture subsist in the Mojave River, Antelope, and Indian Wells valleys. Most of the acreage produces alfalfa, pasture, or deciduous fruit. About one-half (30,000 acres) of the entire region's irrigated crop land is estimated to lie in SWP and CVP Service Areas.

Colorado River Hydrologic Region

SWP and CVP Service Areas in the Colorado River Hydrologic Region comprise part of the southern portion of San Bernardino County, the middle portion of Riverside County, and the Salton Sea in Imperial County. Despite its arid climate, the area contains many productive agricultural areas and vacation resorts. Principal urban areas in the SWP and CVP Service Areas are located in the Coachella Valley, and include Palm Springs, Indio, Cathedral City, and Palm Desert. Vacation and resort facilities in these areas include hotels, country clubs, golf courses, and other residential communities.

The entire Colorado River Hydrologic Region comprises about 12,630,000 acres. About one-fifth of this acreage (2,525,000 acres) is estimated to lie in the region's SWP and CVP Service Areas. About 10 percent of this acreage (252,500 acres) is estimated to comprise urban and suburban land uses.

Federal and state government-owned lands account for the majority of the total land area in the region's SWP and CVP Service Areas. These lands include military facilities (U.S. Marine Corps Training Center at Twentynine Palms) and major parks (Joshua Tree National Monument). About three-fourths (1,895,000 acres) of the land in the region's SWP and CVP Service Areas is estimated to comprise such open space or public lands.

Prominent agricultural crops in the region include alfalfa, winter vegetables, melons, grapes, dates, and wheat, located primarily in the Coachella Valley area. About 15 percent (377,500 acres) of the land in the region's SWP and CVP Service Areas

is estimated to comprise agricultural land uses.

The distribution of general land uses in the SWP and CVP Service Areas are summarized in Table 4.7-1.

Table 4.7-1 Types of Land Use in the SWP and CVP Service Areas

Type of Land Use	Approximate Acres in Region (% of Region)
Agriculture	840,500 (4%)
Open Space	16,294,100 (84%)
Urban Development	2,200,000 (12%)
Source: California Department of Water Resources, *California Water Plan Update, Volume 2*, Bulletin 160-93, October 1994.	

Table 4.7-2 Land Use Features of Counties in CVP and SWP Service Areas

County	Agriculture	Open Space	Urban
Imperial	The Salton Sea is the only part of Imperial County located within the CVP and SWP Service Areas; there are no agricultural lands in this area.	The Salton Sea, including the Salton Sea State Recreation Area, and National Wildlife Refuge.	The small towns of Salton City, Westmoreland, and Niland are located near the perimeter of the Salton Sea.
Los Angeles	Limited amounts of agriculture due to extensive urbanization.	The Angeles National Forest separates urbanized Los Angeles from the Antelope Valley in the northern portion of the County. Public beaches line the County coast along the Pacific Ocean. Other local and regional parks are scattered throughout the County.	Extensively urbanized in and around the Los Angeles metropolitan area; principal cities include Los Angeles, Long Beach, Pasadena, and Santa Clarita.
Orange	Agricultural lands are becoming fewer as County develops. Crops include oranges, strawberries, and corn.	The Santa Ana Mountains occupy the eastern portion of the South County. Public beaches line the County coast along the Pacific Ocean. Other local and regional parks are scattered throughout the County.	Extensively urbanized in the northern and central portions of the County, becoming more-urbanized in the South County. Principal cities include Santa Ana, Anaheim, Newport Beach, Irvine, and San Juan Capistrano.
Riverside	Crops include alfalfa, vegetables, melon, grapes, dates, and wheat; much of this is located in the Coachella Valley, near the City of Indio.	Joshua Tree National Park is located in the center of the County. The San Jacinto Mountains separate the Coachella Valley in the east from western County communities. Recreation areas include numerous lakes (Skinner, Perris, Elsinore, Mathews, and others), as well as the San Bernardino National Forest.	Extensively urbanized in and around the City of Riverside. Resort-oriented development in Palm Springs and in the Coachella Valley along the State Route 111 corridor. Suburban communities include Moreno Valley, Corona, Hemet, and Temecula. The City of Indio is the center for local agricultural uses.
San Bernardino	The western part of the County maintains moderate levels of irrigated agriculture, and produces mostly alfalfa, pasture and fruit.	The San Bernardino National Forest surrounds the City of San Bernardino. Other open space areas include the northern portion of Joshua Tree National Park. Military installations include the Twentynine Palms Marine Corps Training Center, Fort Irwin, and the China Lake Naval Weapons Center.	Extensively urbanized in and around the City of San Bernardino, becoming progressively more rural in the northern and eastern desert portions of the County. Other cities include Fontana, Victorville, and Barstow.
San Diego	Most irrigated agriculture is planted in citrus and avocados.	The Cleveland National Forest separates urbanized San Diego from the Anza-Borrego Desert State Park in the eastern portion of the County. Public beaches line the County coast along the Pacific Ocean. Other local and regional parks are scattered throughout the County.	Extensively urbanized in and around the City of San Diego, becoming progressively more suburban in the southern and eastern mountain portions of the County. Other cities include El Cajon, Escondido, Oceanside, and San Clemente.

Table 4.7-2 Land Use Features of Counties in CVP and SWP Service Areas

County	Agriculture	Open Space	Urban
San Luis Obispo	Moderate agricultural uses in the County include vegetables, truck crops, and cattle/dairy.	The Los Padres National Forest occupies the middle portion of the County. Morro Bay State Park and other recreation areas line Pacific Coast Highway along the Pacific Ocean.	Urban uses are centered in the City of San Luis Obispo. Other cities include Morro Bay, Atascadero, and Paso Robles. Rural communities dot the coastal and inland portions of the County.
Santa Barbara	Moderate levels of agriculture including broccoli, strawberries, and vineyards.	The Los Padres National Forest occupies the northern and eastern portions of the County. The Santa Ynez Mountains frame Santa Barbara and other beach cities along the Pacific Ocean. Vandenberg Air Force Base is located west of Lompoc, north of Pt. Conception.	Extensively urbanized in and around the City of Santa Barbara. Other principal cities include Solvang, Lompoc, and Santa Maria.
Ventura	Agricultural practices include citrus, truck/row crops, strawberries, and other fruits and vegetables.	The Los Padres National Forest occupies the northerly half of the County. Public beaches line the County coast along the Pacific Ocean.	Extensively urbanized in and around the cities of Oxnard, Ventura, Camarillo, Thousand Oaks, and Simi Valley, and along the Highway 101, State Route 23, and State Route 118 corridors. Rural communities are sparsely scattered over other portions of the County.

5.0 REFERENCES

Alameda County Planning Department. 1994. East County Area Plan, a portion of the Alameda County General Plan. Volume 1. Hayward, CA.

California Department of Water Resources. 1991. Land Use Mapping Program. Sacramento, CA.

1993a. Sacramento-San Joaquin Delta Atlas. Sacramento, CA.

1993b. A Report on Land Use Patterns in the Sacramento-San Joaquin Delta. December. Sacramento, CA.

1994a. Land Use Mapping Program. Sacramento, CA.

1994b. California Water Plan Update. Volumes 1and 2. October. Sacramento, CA.

Contra Costa Community Development Department. 1991. Contra Costa General Plan 1990-2005. Martinez, CA.

Delta Protection Commission. 1995. Land Use and Resource Management Plan for the Primary Zone of the Delta. Walnut Grove, CA.

Sacramento County Planning Department. 1983. Delta Community Area Plan. Sacramento, CA.

Sacramento County Planning and Community Development Department. 1993. County of Sacramento General Plan, Planning for the 21st Century. Sacramento, CA.

San Francisco Bay Conservation and Development Commission. 1976. Suisun Marsh Protection Plan. San Francisco, CA.

San Joaquin County Planning Division. 1992. San Joaquin County General Plan 2010. Volume 1: County Wide General Plan. Stockton, CA.

Solano County Farmlands and Open Space Foundation. 1989. Rush Ranch Management Plan Summary. Fairfield, CA.

Solano County Planning Department. 1995. Solano County Land Use and Circulation Element - a part of the Solano County General Plan - December 1980 as amended through July 1995.

Suisun Resource Conservation District. 1980. The Suisun Marsh Management Program. December. Suisun City, CA.

Yolo County Community Development Agency. 1983. Yolo County General Plan -- Part 1, the Plan. Woodland, CA.

Additional county general plans used as reference:

Marin	Tehama
Napa	Yolo
San Mateo	Yuba
Santa Clara	Amador
Sonoma	Calaveras
Butte	Fresno
Colusa	Kern
Glenn	Kings
Lake	Madera

Lassen	Mariposa
Nevada	Merced
Placer	Stanislaus
Plumas	Tuolumne
Shasta	Tulare
Sierra	Imperial
Solano	Los Angeles
Sutter	Orange
Riverside	San Bernardino
San Diego	San Luis Obispo
Santa Barbara	Ventura

CALFED Bay-Delta Program
LAND USE TECHNICAL REPORT
ENVIRONMENTAL IMPACTS
AUGUST 25, 1997 DRAFT

Table of Contents

CALFED Bay-Delta Program
LAND USE TECHNICAL REPORT
ENVIRONMENTAL IMPACTS
AUGUST 25, 1997 DRAFT

1.0 INTRODUCTION

The intent of the CALFED Bay-Delta Program (Program) is to develop long-term solutions to problems affecting the San Francisco Bay/Sacramento-San Joaquin Delta Estuary in Northern California. Overall, the effect of the Program is expected to be beneficial. However, specific Program components may have potentially adverse impacts. Program components include the CALFED Common Programs (Ecosystem Restoration, Water Quality, Water Use Efficiency, and Levee System Integrity), Water Storage, and Water Conveyance.

The purpose of this technical report is to document, in a programmatic manner, the potential impacts of the Program on general land uses and land use patterns that could result from the no action alternative or implementing any of the three Program alternatives. This report discusses potential impacts that may occur in the five regions within the study area including the Delta Region, Bay Region, Sacramento River Region, San Joaquin River Region, and the SWP and CVP Service Areas. The report also contains a brief description of potential mitigation strategies designed to reduce Program impacts to a less than significant level. The executive summary contained in this technical report in conjunction with other information, data, and modeling developed during pre-feasibility will be used to prepare the environmental impacts section of the Programmatic EIR/EIS.

Section 2.0 describes a summary of overall effects, organized by region and alternative, in order to highlight land use impacts described in the analysis to follow. Assessment methods and significance criteria are presented in Sections 3.0 and 4.0, respectively, to describe the variables, methods, and criteria used to assess the significance of a given land use impact. Finally, Section 5.0 compares the effects by region of the three CALFED alternatives on land use.

2.0 SUMMARY OF OVERALL EFFECTS BY ALTERNATIVE

2.1 SUMMARY OF POTENTIAL SIGNIFICANT IMPACTS

2.1.1 Alternative 1

Each of the three configurations (1A, 1B, and 1C) proposed under Alternative 1 would result in potential significant land use impacts in the Delta Region. These impacts would, to a greater or lesser degree, include the conversion of existing agricultural land for a variety of new uses such as habitat restoration, levee system construction, or conveyance improvements.

Alternative 1 Common Programs would not be anticipated to have a significant effect on land uses in the Bay Region, or in SWP and

CVP Service Areas outside the Central Valley; however, Alternative 1C would potentially include activities with direct land use impacts in the Sacramento River Region and San Joaquin River Region. These impacts could include the conversion of existing agricultural land for various other uses, and could be significant.

Implementation of Alternative 1 also could affect the availability of water resources throughout much of California; however, potential land use impacts associated with foreseeable changes in water availability would be expected to be minimal, and insignificant.

2.1.2 Alternative 2

Each of the five configurations (2A, 2B, 2C, 2D, and 2E) proposed under Alternative 2 would result in potential significant land use impacts in the Delta Region. These impacts would, to a greater or lesser degree, include the conversion of existing agricultural land for a variety of new uses such as habitat restoration, levee system construction, conveyance improvements, or new storage.

Alternative 2 Common Programs would not be anticipated to have a significant effect on land uses in the Bay Region, or in SWP and CVP Service Areas outside the Central Valley; however, Alternatives 2B and 2E would potentially include activities with direct land use impacts in the Sacramento River Region and San Joaquin River Region. These impacts could include the conversion of existing agricultural land for various other uses, and could be significant.

Implementation of Alternative 2 also could affect the availability of water resources throughout much of California; however, potential land use impacts associated with foreseeable changes in water availability would be expected to be minimal, and insignificant.

2.1.3 Alternative 3

Each of the nine configurations (3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H, and 3I) proposed under Alternative 3 would result in potential significant land use impacts in the Delta Region. These impacts would, to a greater or lesser degree, include the conversion of existing agricultural land for a variety of new uses such as habitat restoration, levee system construction, conveyance improvements, or new storage.

Alternative 3 would not be anticipated to have a significant effect on land uses in the Bay Region, or in SWP and CVP Service Areas outside the Central Valley. Alternatives 3B, 3D, 3E, 3F, 3G, 3H, and 3I would potentially include activities with direct land use impacts in the Sacramento River Region and San Joaquin River Region. These impacts could include the conversion of existing agricultural land for various other uses, and could be significant.

Implementation of Alternative 3 also could affect the availability of water resources throughout much of California; however, potential land use impacts associated with foreseeable changes in water availability would be expected to be minimal, and insignificant.

2.2 SUMMARY OF MITIGATION STRATEGIES

The following measures shall be implemented to mitigate potentially significant land use impacts identified for Alternatives 1, 2, and 3:

LU-1. Select specific program actions during Phase III that result in the least impact to agricultural objectives and operations in the area. Preserve identified prime and unique farmlands as a priority.

LU-2. To the extent practicable, select program actions during Phase III that are consistent with local and regional land use plans. Consult and work with local jurisdictions affected by CALFED actions early in the Phase III planning and environmental review process.

LU-3. Select and/or design program actions in Phase III that minimize the displacement of existing residents.

LU-4. Select and/or design program actions in Phase III that do not physically disrupt or divide established Delta communities.

2.3 SUMMARY OF POTENTIAL SIGNIFICANT UNAVOIDABLE IMPACTS

The following items have been identified as potentially significant land use impacts for Alternatives 1, 2, and 3:

LU-1. Program actions associated with the ERPP, Levee System Integrity Program, or Storage and Conveyance components could convert existing agricultural uses to CALFED Program uses.

LU-2. Program actions could be inconsistent with local and regional plans where those actions would be implemented.

LU-3. Program actions associated with the ERPP, Levee System Integrity Program, or Storage and Conveyance components could displace existing residents in areas where those actions would be located.

LU-4. Program actions associated with the ERPP, Levee System Integrity Program, or Storage and Conveyance components could physically disrupt or divide an established community.

The No-Action Alternative could result in potentially significant land use impacts associated with Storage and Conveyance components. These impacts include: conversion of existing agricultural or other uses to No-Action uses; inconsistency with local and regional plans where those actions would be implemented; displacement of existing residents in areas where those actions would be located; and physical disruption or division of an established community. It is assumed that the environmental impact documentation prepared for projects included in the No-Action Alternative will include mitigation measures which, when implemented, would mitigate these potentially significant land use impacts to a level of insignificance. Therefore, no new mitigation is required.

3.0 ASSESSMENT METHODS

3.1 OVERVIEW

CALFED program actions could potentially change existing land uses in the Delta, Bay region, Sacramento River region, San Joaquin River region, and SWP and CVP service areas outside the Central Valley. This section addresses the overall

assessment methods that have been used in this impact analysis by discussing the types of land use impacts addressed, the three general land use categories used in the analysis, and the level of land use analysis and detail appropriate to a programmatic document.

3.2 CHARACTERISTICS OF THE ASSESSMENT PROCESS

3.2.1 Types of Impacts

This land use assessment encompasses both the direct and indirect consequences of potential program actions. The presentation of these consequences is divided into two main categories: direct and construction-related impacts; and indirect and operational impacts.

Direct impacts are those changes in physical land uses, or in land use designations, which result from construction of new facilities or conversion of lands from one use to another. Direct effects are defined by NEPA as those that are caused by the action and occur at the same time and place [40 CFR 1508.8(a)]. For purposes of this land use analysis, direct impacts of the CALFED program are those that would occur if any of alternatives, or combinations of alternatives, were implemented. While the actual implementation of the alternatives would take place on a project-specific basis during Phase III, this programmatic land use assessment broadly addresses potential changes in land uses that would occur to three primary land use categories: agriculture, open space/habitat, and developed areas.

Additionally, NEPA sets forth that environmental consequences include a discussion of possible conflicts between the proposed action and the objectives of Federal, regional, State, and local land use plans, policies and controls for the area concerned [40 CFR 1502.16(c)]. Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law (40 CFR 1606.2(d)].

Indirect effects occur later in time and further removed in distance. Indirect land use effects would be changes in broad land use policies, resources, or economies which could result from changes in land uses, or in the long-term availability of water resources. Potential indirect and operational impacts of the program include long-term changes in the number of acres in agricultural use, open space and habitat use, and developed use. Changes in Indian trust assets would be an additional potential land use impact; however, no such assets are anticipated to be affected by the program.

It is explicitly acknowledged that important relationships exist between agricultural, open space/habitat, and developed land uses which must be considered when evaluating potential land use impacts for the various program alternatives. For example, an area in agricultural use includes much more than the cultivated crop area. Agricultural land uses also include all the ancillary structures and related uses to support agricultural production. These can include but are not limited to related residential structures, support structures such as barns and out buildings, the regional roadway infrastructure, and the landowner's water storage and distribution system. Therefore, the loss of agricultural land in a given area might be accompanied by the loss of one or more residences, accessory structures, or access roads used to support the agricultural land use. Similarly, the response of

landowners and water resource managers to changes in water supply conditions, economic conditions, and land and water management policies might result in changes in land uses between agricultural, open space/habitat, and developed uses. These types of relationships are assumed throughout the analysis as a basis for determining the potential significance of various types of land use impacts.

3.2.2 Level of Detail

As a Programmatic EIS/EIR, this assessment does not provide site-specific details or estimates of acreages potentially affected for a given alternative. Rather, potential increases or decreases in the area of a given land use by region will be qualitatively estimated. Among the five regions discussed in this report, the level of detail provided for analysis of the Delta Region is necessarily greater than that for the other four regions. The reason for this divergence is twofold: 1) the vast majority of physical improvements contemplated by the various alternatives would be implemented in the Delta Region, rather than in the other regions; and 2) a substantially greater number of applicable land use and environmental studies have been completed for the Delta Region than for the other regions.

4.0 SIGNIFICANCE CRITERIA

The following impacts would potentially be considered significant land use effects of the project:

Agricultural Use

- Impacts upon any lands classified as prime and unique farmlands (also see Socioeconomics)
- Conversion of agricultural lands or losses of croplands (also see Socioeconomics)
- Inconsistency with agricultural objectives of local and regional plans
- Water level changes which would impact agricultural lands (also see Socioeconomics)

Open Space and Habitat Use / Developed Use

- Displacement of residents (also see Socioeconomics)
- Land use impacts to refuges (also see Biological Resources)
- Inconsistency with land use objectives of local and regional plans

As an EIR/EIS, this section must also address the land use significance criteria recommended in the *State CEQA Guidelines*, considering whether the project would: (a) be incompatible with existing land uses in the vicinity; (b) affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible land uses); c) conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project; (d) conflict with general plan designations or zoning; or (e) disrupt or divide the physical arrangement of any established community.

5.0 ENVIRONMENTAL IMPACTS

5.1 Resource Conditions with No Action Alternative Compared to current Conditions

The No Action Alternative represents conditions that would occur in the future (year 2020) absent implementation of a CALFED Program alternative. The No-Action Alternative is basically a continuation of current conditions, with the addition of some reasonably foreseeable future actions (both projects and non-project items) that could occur in the absence of a Program alternative. Projects included in the No-Action Alternative include:

- Coastal Branch II of the Coastal Aqueduct
- Central Valley Project Improvement Act (CVPIA) Dedication of 800,000 Acre-Feet, Level IV Refuge Water, and the Shasta Temperature Control Device
- Interim Re-Operation of Folsom Reservoir
- Kern Water Bank
- Los Vaqueros Reservoir Project
- Metropolitan Water District Eastside Reservoir Project
- Monterey Agreement
- New Melones Conveyance Project
- Sacramento River Flood Control System Evaluation
- Semitropic Water Storage District Groundwater Banking Project; and
- Stone Lakes National Wildlife Refuge.

The key changes between current conditions and no-action conditions that will affect land use involve the conversion of land uses to accommodate storage and conveyance facilities associated with the above-listed projects. Non-project actions are not anticipated to significantly affect land uses. Project-related changes are discussed below, by region. All projects are assumed to be potentially inconsistent with local and regional plans.

5.1.1 Delta Region - Resource Conditions

Projects which are located in the Delta Region, or which could potentially affect Region land uses, are the CVPIA project and the Los Vaqueros Reservoir project.

The CVPIA project includes dedication of 800,000 acre-feet of water for fish and wildlife, Level IV refuge water, restoration payments, and operation of the Shasta temperature control device. There is an effort underway to describe the process for allocating the B(2) water on an annual basis, and to acquire the refuge water. The temperature control device is in place. Potentially significant land use impacts include conversion of existing agricultural or other uses to dedicated fish and wildlife uses.

The Los Vaqueros Reservoir project is under construction and is expected to be operational in 1997. Potentially significant land use impacts include conversion of existing open space or other uses to reservoir project uses.

5.1.2 Bay Region - Resource Conditions

The project which is located in the Bay Region, or which could potentially affect Region land uses, is the CVPIA project described above. Potentially significant land use impacts of the CVPIA Project are identified in Section 5.1.1.

5.1.3 Sacramento River Region - Resource Conditions

Projects which are located in the Sacramento River Region, or which could potentially affect Region land uses, are the CVPIA project, the Interim Re-Operation of Folsom Reservoir, the Sacramento River Flood Control System Evaluation, and the Stone Lakes National Wildlife Refuge project.

Potentially significant land use impacts of the CVPIA Project are identified in Section 5.1.1. The interim re-operation of Folsom Reservoir would de licate more storage space to flood control. Operation was modified beginning in 1994. Conversion of land uses for flood control uses could be a significant land use impact of the project.

Phases II and III of the Sacramento River flood control system evaluation are under construction. Potentially significant land use impacts include loss of agricultural and open space uses to accommodate flood control facilities. For the Stone Lakes National Wildlife Refuge project, land acquisition and restoration activities are underway. Conversion of land uses for open space uses could be a significant land use impact of the project.

5.1.4 San Joaquin River Region - Resource Conditions

Projects which are located in the San Joaquin River Region, or which could potentially affect Region land uses, are the CVPIA project, the Monterey Agreement, and the New Melones Conveyance Project.

Potentially significant land use impacts of the CVPIA Project are identified in Section 5.1.1. The Monterey Agreement project revises the formula used to allocate SWP water, retires 45,000 acre-feet of agricultural entitlement, transfers 130,000 acre-feet of entitlement from agriculture to manufacturing and industrial use, allows sale of the Kern Fan element of the Kern Water Bank to agricultural contractors, and changes allowable operations at Castaic Lake and Lake Perris. The Agreement was implemented in 1995; potential land use impacts could result from changes in the availability of water for various land uses. There impacts, however, would not be anticipated to be significant.

The New Melones Conveyance Project conveys water to the Stockton East Water District and Central San Joaquin Water Conservation District for use near and within Stockton. The project has been recently constructed and is operational. Thus, no new significant land use impacts are anticipated.

5.1.5 SWP and CVP Service Area - Resource Conditions

Projects which are located in SWP and CVP Service Areas, or which could potentially affect Area land uses, are the CVPIA project, the Monterey Agreement, the Coastal Aqueduct project, the Kern Water Bank project, the Metropolitan Water

District Eastside Reservoir project, and the Semitropic Water Storage District Groundwater Banking project.

Potentially significant land use impacts of the CVPIA project and Monterey Agreement are identified in Sections 5.1.1 and 5.1.4, respectively.

The Coastal Branch II of the Coastal Aqueduct project will provide SWP water for manufacturing and industrial use in San Luis Obispo and Santa Barbara counties. Construction began in 1993 on Coastal Branch II and the project is expected to be operational in 1997. Potentially significant land use impacts include loss of agricultural and open space uses to accommodate conveyance facilities.

The Kern Water Bank project will develop storage capacity to augment the SWP's dependable supply. Components addressed in this study include only those aspects which have been recently completed and are currently being operated. Conversion of land uses for storage capacity could be a significant land use impact of the project.

The Metropolitan Water District Eastside Reservoir project will provide emergency storage following earthquakes, supplies during droughts, and will assist in meeting peak summer demands. The project is under construction. Conversion of land uses for storage capacity could be a significant land use impact of the project.

The Semitropic Water Storage District Groundwater Banking project will allow the Metropolitan Water District to recharge and extract SWP water in the Semitropic Water Storage District. No significant land use impacts are anticipated.

5.2 Impacts of CALFED Alternatives by Region Compared to Current Conditions

5.2.1 Delta Region

Alternative 1

Direct and Construction-Related Impacts

Compatibility With Existing or Proposed Land Uses

The **Ecosystem Restoration Program** recommends a total of approximately 120,000 to 150,000 acres of land in the Delta Region be converted to habitat and ecosystem restoration, levee setbacks, and floodways. Specific land use impacts on the three categories of land use in consideration (agricultural, open space/habitat, and developed) would depend on the actual location of the modifications and improvements.

In general, spatial land patterns in the Delta Region show that agriculture is the dominant land use on the non-conveyance side of levee structures. Given these general patters of land use, it can be expected that existing uses potentially affected by ERPP improvements will generally be agricultural. Some of these agricultural uses likely will be shifted to the Central Valley or elsewhere.

The **Water Quality Program** focuses on source control and reducing the release of pollutants into the Bay-Delta system and its tributaries. The Program is not anticipated to have direct or indirect land use impacts in the Delta Region.

The **Water Use Efficiency Program** is not anticipated to have direct land use impacts.

The Program relies on incentives, technical assistance, and policies to be implemented by local agencies, rather than mandatory measures and targets for water use efficiency. Because more efficient use of existing water could preclude the need for some conveyance and storage improvements, the Program could indirectly result in fewer impacts to agriculture and other existing land uses.

The **Levee System Integrity Program** contains nine approaches to improve the integrity of the levee system. One approach, subsidence control, could involve shallow flooding and the creation of managed wetlands in certain areas. Other approaches (setback levees and associated habitat) are assessed under ERPP land use impacts. As with the ERPP, the majority of impacts form the Levee System Integrity Program would be to agricultural land uses.

Alternatives 1A and 1B do not include components for **Storage** or **Conveyance**. Alternative 1C includes some enlarged Delta channel capacity, plus potential surface and groundwater storage. Storage components of Alternative 1C are the same as storage components for other CALFED proposed alternatives. These are, in order of priority: raise existing dams, develop new storage (on- or off-stream), and groundwater. Potential direct land use impacts of new or expanded surface storage would be, in general, the conversion of existing land uses for these improvements.

Raising existing dams to increase storage capacities in existing reservoirs would increase the elevation of the new water surface, thereby inundating a new area around the perimeter of the reservoir. The magnitude of the new inundation area would depend on the intended storage increase and the morphology of the reservoir area. In general, the predominant land use around existing reservoirs is open space. Most likely land use impacts would be on shoreline recreational facilities that would need to be relocated out of the new inundation zone.

Land use impacts of developing new storage on- or off-stream storage would depend on the exact location of the new storage facility. Potential direct land use impacts would be the conversion of the existing, underlying land use. For purposes of this programmatic analysis, it is assumed that most new reservoir sites would be located in the foothills rather than in flat, valley-bottom areas where agriculture land uses would predominate. Expected land use impacts would therefore be the conversion of existing open space to a new open space use (water storage).

Increased or new groundwater storage would not be expected to have direct or indirect impacts on existing land uses in the area.

Compatibility With General Plan Land Use Designations or Zoning

The Delta Protection Commission provides regional coordination among various agencies in the Delta Region. The Commission's *Land Use and Resource Management Plan for the Primary Zone of the Delta* (Delta Protection Commission 1995) sets forth land use goals for the Region. All local general plans for areas within the Delta Primary Zone (which comprise the majority of the Delta) are required to be consistent with the regional plan. These include general plans from Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties. The plans for areas located in the Delta

Secondary Zone (Alameda County) are not required to be consistent with the regional plan. Each county, however, has the responsibility of land use planning and zoning of unincorporated county lands.

The specific locations of improvements contemplated for Alternative 1 configurations have not been identified for this programmatic-level analysis. Thus, the consistency of project alternatives with general plan land use designations or zoning are not evaluated herein.

Consistency With Regional or Local Plans or Policies

Specific policies for the Delta Region vary considerably among the counties with land in the Region. Brief descriptions of these policies are provided in the Draft Affected Environment Technical Report for this EIS/EIR. As discussed above, the consistency of project alternatives with general plan land use designations or zoning are not evaluated herein.

Indirect and Operational Impacts

As discussed above, the **Ecosystem Restoration Program** would improve various areas of the Delta Region for habitat restoration. Given the spatial land use patterns in the Delta, the vast majority of this land is likely to be in agricultural use. Improvements contemplated under the **Levee System Integrity Program** would involve acquisition of new rights-of-way and construction of new setback levees, and also would primarily affect agricultural land uses. The **Water Quality** and **Water Use Efficiency Programs** would not have significant indirect or operational land use impacts in the Delta Region. Impacts associated with **Storage** or **Conveyance** components would principally involve the conversion of agricultural land for these improvements. Indirect impacts of new storage facilities could be the migration of recreational activities to the new reservoirs over time.

Summary of Significant Impacts

Implementation of Alternatives 1A, 1B, or 1C would potentially result in a net loss of existing agricultural land uses (120-150,000 acres) due to the implementation of the ERPP and Levee System Integrity Program, and therefore a net gain in open space/habitat uses. Conversion of existing agricultural uses to open space use is a potentially significant land use impact. New or expanded surface storage outside the Delta would likely inundate open space uses and not be considered a potentially significant land use impact.

Other potential significant impacts of Alternative 1, depending on the final location of project-specific implementation during Phase III, could be program actions inconsistent with local/regional land use plans, displacement of any existing residents, or improvements that could disrupt or divide an existing community. These potentially significant land use impacts should be reviewed during the Phase III project -specific environmental review process.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

Alternative 2

Direct and Construction-Related Impacts

Potential impacts from the common programs on land uses in the Delta are anticipated to be similar to those described under Alternative 1. The principal difference between Alternatives 1 and 2 involves the components for **Storage** or **Conveyance**. Alternative 2 includes significant modifications of through-Delta channels to improve water conveyance across the Delta. Channel widening and island flooding will require the purchase and conversion of agricultural and potentially other lands.

For instance, Alternative 2A envisions the purchase of a 500-foot strip of land along about 30 miles of the Mokelumne River. Existing land uses along this 2,000 acre strip are primarily agricultural. In addition, actions such as flooding the McCormack-Williamson Tract would inundate another 2,000-3,000 acres. Flooding of Delta islands for increased conveyance purposes would primarily affect existing agricultural land uses on these islands. In addition, other ancillary island land uses would be affected and need to be relocated, such as highways/roads, spot commercial uses, and scattered residential uses. These scattered residential uses are often on the perimeter of the island adjacent to the levee in order to provide the residents access to the recreational benefits of the waterway.

Alternative 2B would potentially implement the same Delta modifications described under Alternative 2A, and would add surface and groundwater storage components. Potential land use impacts of new or expanded surface water storage are discussed under Alternative 1.

Instead of a Hood intake and flooding of McCormack-Williamson Tract, Alternative 2C represents the construction of three intake locations for diversion of water into the Tracy and Banks Pumping Plants. Agricultural and potentially other lands would be purchased and converted for conveyance. Flooding of the Holland Tract could have the same potential impacts described above for island flooding. Land purchases and conversion could potentially require up to 10,000 acres.

Potential land use impacts for Alternative 2D would be similar to those for Alternative 2A, with the additional impacts related to the purchase and conversion of approximately 10,000 acres of agricultural or potentially other land uses converted to open space in the form or floodway, conveyance channel, or habitat.

Alternative 2E eliminates certain in-channel conveyance and adds additional habitat from the inundation of Tyler Island. Land uses converted for these conveyance features could range up to 20,000 acres of agricultural land use, and associated land uses as described above that are typical for island areas.

Indirect and Operational Impacts

Potential impacts from the common programs on land uses in the Delta are anticipated to be similar to those described under Alternative 1.

Summary of Significant Impacts

As with Alternative 1, implementation of Alternatives 2A through 2F would potentially result in a net loss of existing agricultural land uses (120-150,000 acres) due to the implementation of the ERPP and

Levee System Integrity Program, and therefore a net gain in open space/habitat uses. Conversion of existing agricultural uses to open space use is a potentially significant land use impact.

In additional, Alternative 2 conveyance modifications that result in channel widening, setback levees, and tract/island flooding have the potential to impact existing agricultural land uses in the Delta, due to the general spatial distribution of agricultural land uses in relation to these features. Ancillary land uses that could also be impacted include existing roadway systems, and residential uses that are often on the perimeter of islands/tracts. Conversion of agricultural land to open space would be a potentially significant impact, as would the disruption or relocation of local residents.

New or expanded surface storage would occur outside the Delta and is addressed in the those regional analyses.

Other potential significant impacts of Alternative 2, depending on the final location of project-specific implementation during Phase III, could be program actions inconsistent with local/regional land use plans, displacement of any existing residents, or improvements that could disrupt or divide an existing community. These potentially significant land use impacts should be reviewed during the Phase III project-specific environmental review process.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

Alternative 3

Direct and Construction-Related Impacts

Potential land use impacts from the common programs on land uses in the Delta are anticipated to be similar to those described under Alternative 1. The principal difference between Alternatives 1 and 3 involves the components for **Storage** or **Conveyance**. Alternative 3 adds an isolated facility (new open channel or buried pipeline) to the through-Delta modifications of Alternative 2 to move water through and around the Delta.

Potential direct land use impacts from a new isolated facility would be different for an open channel vs. a buried pipeline. Creation of an open channel isolated conveyance would be a significant land use impact due to the permanent conversion of underlying land uses from agriculture (primarily) to open space; estimates of acreages involved are provided below. Construction of a buried pipeline isolated conveyance, however, would be a short-term, temporary impact on surrounding land uses. Any agricultural land uses affected could resume after completion of the pipeline construction.

Potential impacts for Alternative 3A are similar to Alternative 2A, except for proposed McCormack-Williamson Tract flooding. An open channel isolated conveyance would require the purchase and conversion of a 2,000-foot-wide alignment for the canal. Assuming a 50-mile conveyance canal, about 12,000 acres of land would be purchased. The agricultural land use component of that right-of-way could range from 5,000 to 10,000 acres.

Potential impacts of Alternative 3B are similar to those described for Alternative 3A, except that up to 200,000 acre-feet of

in-Delta storage would require conversion of 10,000-15,000 acres of existing lands. Delta impacts from Alternatives 3E and 3G are similar to those for Alternative 3B.

Alternative 3C impacts are similar to those described for Alternative 3A, except that a pipeline would require potentially less land conversion than an open canal. Alternative 3D impacts are similar to those described for Alternative 3B, except that a pipeline would require potentially less land conversion than an open canal.

Alternative 3F is similar to Alternative 3B, except that a chain of inundated Delta islands would provide conveyance rather than an isolated facility. Up to 50-80,000 acres of additional Delta agricultural land would be converted to storage and conveyance, in addition to acreage involved in the ERPP. Land use impacts of Alternative 3H is similar to Alternative 2E, but with additional agricultural land purchased for right-of-way for the conveyance canal. Alternative 3I impacts are similar to those described for Alternative 2C.

Indirect and Operational Impacts

Potential impacts from the common programs on land uses in the Delta are anticipated to be similar to those described under Alternative 1.

Summary of Significant Impacts

As with Alternatives 1 and 2, implementation of any of the Alternative 3 subalternatives would potentially result in a net loss of existing agricultural land uses (120-150,000 acres) due to the implementation of the ERPP and Levee System Integrity Program, and therefore a net gain in open space/habitat uses. Conversion of existing agricultural uses to open space use is a potentially significant land use impact.

Potential significant land use impacts associated with Alternative 3 conveyances would differ depending on the style of conveyance facility implemented during Phase III. An open channel isolated conveyance could cause a potentially significant land use impact due to the permanent conversion of existing agricultural land to water conveyance, similar to conversion of Alternative 2 through-Delta conveyance impacts. As much as 5,000 to 10,000 acres of additional agricultural land could be converted for an open-channel isolated conveyance, in addition to land already converted as part of the ERPP.

Implementation of an isolated pipeline conveyance would allow right-of-way agricultural land uses to continue after construction of the pipeline, therefore causing less than significant, short-term land use impacts.

A chain-of-lakes conveyance system as envisioned in Alternative 3F would have similar significant land use impacts as those described in Alternative 2 for island/tract flooding, but at a much greater scale (50,000-80,000 acres in addition to the ERPP). These significant land use impacts include conversion of existing agricultural land, and impacts on ancillary land uses including existing roadway systems, and residential uses that are often on the perimeter of islands/tracts.

Other potential significant impacts of Alternative 3, depending on the final location of project-specific implementation

during Phase III, could be program actions inconsistent with local/regional land use plans, displacement of any existing residents, or improvements that could disrupt or divide an existing community. These potentially significant land use impacts should be reviewed during the Phase III project-specific environmental review process.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

5.2.2 Bay Region

Alternative 1

Direct and Construction-Related Impacts

Alternative 1A includes only the common program components. Land use impacts of the **Ecosystem Restoration Program** are expected to be minor. Impacts of ERPP activities could alter or displace existing land uses in the Delta, but would not be anticipated to have a significant effect on land uses in the Bay Region.

The **Water Quality Program** focuses on source control and reducing the release of pollutants into the Bay-Delta system and its tributaries. The Program is not anticipated to have direct or indirect land use impacts in the Bay Region.

The **Water Use Efficiency Program** is not anticipated to have direct land use impacts. The Program relies on incentives, technical assistance, and policies to be implemented by local agencies, rather than mandatory measures and targets for water use efficiency. Because more efficient use of existing water may preclude the need for some conveyance and storage improvements, the Program could indirectly result in fewer impacts to agriculture and other existing land uses.

The **Levee System Integrity Program** would involve construction of new setback levees requiring the purchase of existing land in the Delta Region. The Program is not anticipated to have direct or indirect land use impacts in the Bay Region.

Alternative 1B impacts would be similar to those described for Alternative 1A. **Storage** and **Conveyance** facilities under Alternative 1C could alter or displace existing land uses in the Delta, but would not be anticipated to have a significant effect on land uses in the Bay Region.

Changes in water available for delivery due to storage and conveyance components could support agricultural acreage shifted out of the Delta Region due to land conversion, or on Bay Region agricultural lands currently idled, but would not represent an increase in acreage designated for agricultural use outside of the Delta Region.

Indirect and Operational Impacts

Activities proposed under the Alternative 1 Common Programs and **Storage and Conveyance** components would not directly affect land uses in the Bay Region.

Implementation of Alternative 1 could affect the availability of water resources throughout much of California. Potential land use impacts include changes in the quantity of agricultural acreage, and the pace and location of urbanization. The extent of these changes would be expected to be minimal, and insignificant.

Summary of Significant Impacts

Implementation of Alternative 1 would not result in significant land use impacts in the Bay Region.

Mitigation Strategies

No mitigation strategies are required

Alternative 2

Impacts in the Bay Region for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 2 would not result in significant land use impacts in the Bay Region.

Mitigation Strategies

No mitigation strategies are required.

Alternative 3

Impacts in the Bay Region for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 3 would not result in significant land use impacts in the Bay Region.

Mitigation Strategies

No mitigation strategies are required.

5.2.3 Sacramento River Region

Direct and Construction-Related Impacts

Alternative 1

Alternative 1A includes only the common program components. The **Ecosystem Restoration Program** includes some purchase and conversion of agricultural and potentially other lands for habitat restoration in the Sacramento River Region. The total effect of Alternative 1A components could be the conversion or idling of up to 50,000 acres of agricultural land, primarily lands on the east side and valley trough.

The **Water Quality Program** focuses on source control and reducing the release of pollutants into the Bay-Delta system and its tributaries. The Program is not anticipated to have direct or indirect land use impacts in the Sacramento River Region.

The **Water Use Efficiency Program** is not anticipated to have direct land use impacts. The Program relies on incentives, technical assistance, and policies to be implemented by local agencies, rather than mandatory measures and targets for water use efficiency. Because more efficient use of existing water may preclude the need for some conveyance and storage improvements, the Program could indirectly result in fewer impacts to agriculture and other existing land uses.

The **Levee System Integrity Program** would involve construction of new setback levees requiring the purchase of existing land in the Delta Region. The Program is not anticipated to have direct or indirect land use impacts in the Sacramento River Region.

Alternative 1B impacts would be similar to those described for Alternative 1A. Some land uses could be affected by the location of **Storage** and **Conveyance** facilities under Alternative 1C. The likely location of large storage facilities is in the foothill or mountain areas, where land use is likely to be agricultural or open space. Conversion of these land uses would be a significant impact. Program actions could also result in significant impacts where the actions displace residents, physically disrupt or divide an established community, or are inconsistent with a local or regional plan.

Changes in water available for delivery due to storage and conveyance components could support agricultural acreage shifted out of the Delta Region due to land conversion, or on Sacramento River Region agricultural lands currently idled, but would not represent an increase in acreage designated for agricultural use outside of the Delta Region.

Indirect and Operational Impacts

As discussed above, the **Ecosystem Restoration Program** would improve various areas of the Sacramento River Region for habitat restoration. The vast majority of this land is presently in agricultural use. The **Levee System Integrity, Water Quality**, and **Water Use Efficiency Programs** would not have significant indirect or operational land use impacts in the Sacramento River Region. Impacts associated with **Storage** or **Conveyance** components would principally involve the conversion of agricultural land for these improvements, and would be significant.

Land owned by the Bureau of Indian Affairs is located in two areas of the Sacramento River Region: along a portion of the Trinity River in northeast Humboldt County; and northeast of the City of Alturas in Modoc County. These lands would not be impacted by the project alternatives.

Summary of Significant Impacts

Implementation of Alternative 1 would result in a net loss of agricultural land uses, a net gain of open space/habitat land uses, and a nominal increase in developed uses associated with new conveyance facilities. Potential significant unavoidable impacts of this alternative include: loss of agricultural land; inconsistency with local and regional plans; displacement of residents; and physical disruption or division of an established community. Please refer to Section 2.3.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

Alternative 2

Impacts in the Sacramento River Region for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 2 would result in a net loss of agricultural land uses, a net gain of open space/habitat land uses, and a nominal increase in developed uses associated with new conveyance facilities. Potential significant unavoidable impacts of this alternative include: loss of agricultural land; inconsistency with local and regional plans; displacement of residents; and physical disruption or division of an

established community. Please refer to Section 2.3.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

Alternative 3

Impacts in the Sacramento River Region for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 3 would result in a net loss of agricultural land uses, a net gain of open space/habitat land uses, and a nominal increase in developed uses associated with new conveyance facilities. Potential significant unavoidable impacts of this alternative include: loss of agricultural land; inconsistency with local and regional plans; displacement of residents; and physical disruption or division of an established community. Please refer to Section 2.3.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

5.2.4 San Joaquin River Region

Alternative 1

Direct and Construction-Related Impacts

Alternative 1A includes only the common program components. The **Ecosystem Restoration Program** includes some purchase and conversion of agricultural and potentially other lands for habitat restoration in the San Joaquin River Region. The total effect of Alternative 1A components could be the conversion or idling of up to 50,000 acres of agricultural land, primarily lands east of the San Joaquin River.

The **Water Quality Program** focuses on source control and reducing the release of pollutants into the Bay-Delta system and its tributaries. The Program is not anticipated to have direct or indirect land use impacts in the San Joaquin River Region.

The **Water Use Efficiency Program** is not anticipated to have direct land use impacts. The Program relies on incentives, technical assistance, and policies to be implemented by local agencies, rather than mandatory measures and targets for water use efficiency. Because more efficient use of existing water may preclude the need for some conveyance and storage improvements, the Program could indirectly result in fewer impacts to agriculture and other existing land uses.

The **Levee System Integrity Program** would involve construction of new setback levees requiring the purchase of existing land in the Delta Region. The Program is not anticipated to have direct or indirect land use impacts in the San Joaquin River Region.

Alternative 1B impacts would be similar to those described for Alternative 1A. Some land uses could be affected by the location of **Storage** and **Conveyance** facilities under Alternative 1C. Existing land uses at the location of large storage facilities are likely to be agricultural or open space. Conversion of these land uses would be a significant impact. Program actions could also result in significant impacts where the actions displace residents, physically disrupt or

divide an established community, or are inconsistent with a local or regional plan.

Changes in water available for delivery due to storage and conveyance components could support agricultural acreage shifted out of the Delta Region due to land conversion, or on San Joaquin River agricultural lands currently idled, but would not represent an increase in acreage designated for agricultural use outside of the Delta Region.

Indirect and Operational Impacts

As discussed above, the **Ecosystem Restoration Program** would improve various areas of the San Joaquin River Region for habitat restoration. The vast majority of this land is presently in agricultural use. The **Levee System Integrity, Water Quality**, and **Water Use Efficiency Programs** would not have significant indirect or operational land use impacts in the San Joaquin River Region. Impacts associated with **Storage** or **Conveyance** components would principally involve the conversion of agricultural land for these improvements, and would be significant.

Land owned by the Bureau of Indian Affairs is located east of Lake Success in central Tulare County. This land would not be impacted by the project alternatives.

Summary of Significant Impacts

Implementation of Alternative 1 would result in a net loss of agricultural land uses, a net gain of open space/habitat land uses, and a nominal increase in developed uses associated with new conveyance facilities. Potential significant unavoidable impacts of this alternative include: loss of agricultural land; inconsistency with local and regional plans; displacement of residents; and physical disruption or division of an established community. Please refer to Section 2.3.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

Alternative 2

Impacts in the San Joaquin River Region for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 2 would result in a net loss of agricultural land uses, a net gain of open space/habitat land uses, and a nominal increase in developed uses associated with new conveyance facilities. Potential significant unavoidable impacts of this alternative include: loss of agricultural land; inconsistency with local and regional plans; displacement of residents; and physical disruption or division of an established community. Please refer to Section 2.3.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

Alternative 3

Impacts in the San Joaquin River Region for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 3 would result in a net loss of agricultural land uses, a net gain of open space/habitat land uses, and a nominal increase in developed uses associated with new conveyance facilities. Potential significant unavoidable impacts of this alternative include: loss of agricultural land; inconsistency with local and regional plans; displacement of residents; and physical disruption or division of an established community. Please refer to Section 2.3.

Mitigation Strategies

Please refer to Section 2.2 for a summary of mitigation strategies.

5.2.5 SWP and CVP Service Area

Alternative 1

Direct and Construction-Related Impacts

Alternative 1A includes only the common program components. Land use impacts of the **Ecosystem Restoration Program** are expected to be minor. Impacts of ERPP activities could alter or displace existing land uses in the Delta, but would not be anticipated to have a significant effect on land uses in SWP and CVP Service Areas.

The **Water Quality Program** focuses on source control and reducing the release of pollutants into the Bay-Delta system and its tributaries. The Program is not anticipated to have direct or indirect land use impacts in SWP and CVP Service Areas outside the Central Valley.

The **Water Use Efficiency Program** is not anticipated to have direct land use impacts. The Program relies on incentives, technical assistance, and policies to be implemented by local agencies, rather than mandatory measures and targets for water use efficiency. Because more efficient use of existing water may preclude the need for some conveyance and storage improvements, the Program could indirectly result in fewer impacts to agriculture and other existing land uses.

The **Levee System Integrity Program** would involve construction of new setback levees requiring the purchase of existing land in the Delta Region. The Program is not anticipated to have direct or indirect land use impacts in SWP and CVP Service Areas outside the Central Valley.

Alternative 1B impacts would be similar to those described for Alternative 1A. **Storage** and **Conveyance** facilities under Alternative 1C could alter or displace existing land uses in the Delta, but would not be anticipated to have a significant effect on land uses in SWP and CVP Service Areas.

Changes in water available for delivery due to storage and conveyance components could support agricultural acreage shifted out of the Delta Region due to land conversion, or on SWP and CVP area agricultural lands currently idled, but would not represent an increase in acreage designated for agricultural use outside of the Delta Region.

Indirect and Operational Impacts

Activities proposed under the Alternative 1 Common Programs and **Storage and Conveyance** components would not directly affect land uses in SWP and CVP Service Areas.

Implementation of Alternative 1 could affect the availability of water resources throughout much of California. Potential land use impacts include changes in the quantity of agricultural acreage, and the pace and location of urbanization. The extent of these changes would be expected to be minimal, and insignificant.

Land owned by the Bureau of Indian Affairs is located in several areas of Riverside and eastern San Diego Counties. These lands would not be impacted by the project alternatives.

Summary of Significant Impacts

Implementation of Alternative 1 would not result in significant land use impacts in SWP and CGVP Service Areas.

Mitigation Strategies

No mitigation strategies are required.

Alternative 2

Impacts in SWP and CVP Service Areas for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 2 would no result in significant land use impacts in SWP and CVP Service Areas.

Mitigation Strategies

No mitigation strategies are required.

Alternative 3

Impacts in SWP and CVP Service Areas for all configurations would be similar to those described under Alternative 1C.

Summary of Significant Impacts

Implementation of Alternative 3 would not result in significant land use impacts in SWP and CVP Service Areas.

Mitigation Strategies

No mitigation strategies are required.

5.3 Summary of Impact Comparisons by Region

The following tables summarize land use impacts described in Sections 5.1 and 5.2. Land use impacts which are considered significant are identified where applicable; all other impacts are considered minor and insignificant. Numbering for Mitigation Strategies refers to the mitigation measure numbers presented in Sections 5.1 and 5.2.

5.4 Narrative of Summary Tables by Region by Program

5.4.1 Delta Region

The summary table in Section 5.3.1 indicates that significant land use impacts in the Delta Region would result for Alternatives 1, 2, and 3 under the Ecosystem Restoration Program, Levee System Integrity Program, and Water Storage and Conveyance Components. Potentially significant impacts include: conversion of existing agricultural uses to CALFED Program uses; increases in open space uses; displacement of residents or physical disruption or division of an established

community where selected Program actions would be implemented; and inconsistency with applicable local and regional plans. The Water Quality and Water Use Efficiency Programs would not result in significant land use impacts in the Delta Region. Projects included in the No-Action Alternative could result in significant land use impacts associated with water Storage and Conveyance components.

5.4.2 Bay Region

The summary table in Section 5.3.2 indicates that neither the four CALFED Common Programs (Ecosystem Restoration, Water Quality, Water Use Efficiency, and Levee System Integrity), nor Storage and Conveyance components would result in significant land use impacts in the Bay Region. Similarly, the No-Action Alternative would have no signficant land use impacts in the Bay Region.

5.4.3 Sacramento River Region

The summary table in Section 5.3.3 indicates that significant land use impacts in the Sacramento River Region would result for Alternatives 1, 2, and 3 under the Ecosystem Restoration Program, and Water Storage and Conveyance Components. Potentially significant impacts include: conversion of existing agricultural uses to CALFED Program uses; increases in open space uses; displacement of residents or physical disruption or division of an established community where selected Program actions would be implemented; and inconsistency with applicable local and regional plans. The Water Quality, Water Use Efficiency, and Levee System Integrity Programs would not result in significant land use impacts in the Sacramento River Region. Projects included in the No-Action Alternative could result in significant land use impacts associate with water storage and conveyance components.

5.4.4 San Joaquin River Region

The summary table in Section 5.3.4 indicates that significant land use impacts in the San Joaquin River Region would result for Alternatives 1, 2, and 3 under the Ecosystem Restoration Program, and Water Storage and Conveyance Components. Potentially significant impacts include: conversion of existing agricultural uses to CALFED Program uses; increases in open space uses; displacement of residents or physical disruption or division of an established community where selected Program actions would be implemented; and inconsistency with applicable local and regional plans. The Water Quality, Water Use Efficiency, and Levee System Integrity Programs would not result in significant land use impacts in the San Joaquin River Region. Projects included in the No-Action Alternative could result in significant land use impacts associate with water storage and conveyance components.

5.4.5 SWP and CVP Service Areas

The summary table in Section 5.3.5 indicates that neither the four CALFED Common Programs (Ecosystem Restoration, Water Quality, Water Use Efficiency, and Levee System Integrity) nor would result in significant land use impacts in the SWP and CVP Service Areas. Similarly, the No-Action Alternative would have no signficant land use impacts in the SWP and CVP Service Areas.

6.0 RELATED TOPICS

6.1 RELATIONSHIP TO OTHER ASSESSMENT METHODS OR TOPICS

Land use assessment variables are closely related to other resource assessments and methods, including those for agricultural economics, terrestrial and wetland habitat, municipal and industrial economics, and recreation resources. Additionally, results of the land use assessment will support analysis of impacts on biological resources, visual conditions, cultural resources, flood control, surface water conditions, soils, and air quality.

7.0 REFERENCES

California Department of Water Resources, *California Water Plan Update*, 1994.

Delta Protection Commission. 1995 Land Use and Resource Management Plan for the Primary Zone of the Delta. Walnut Grove, CA.

5.3.1 Delta Region

ECOSYSTEM RESTORATION					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

WATER QUALITY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

Delta Region (Continued)

WATER USE EFFICIENCY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

C—002527

LEVEE SYSTEM INTEGRITY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the Levee System Integrity Program could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the Levee System Integrity Program could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the Levee System Integrity Program could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the Levee System Integrity Program could displace residents. Program actions associated with the Levee System Integrity Program also could physically disrupt or divide an established community.	Program actions associated with the Levee System Integrity Program could displace residents. Program actions associated with the Levee System Integrity Program also could physically disrupt or divide an established community.	Program actions associated with the Levee System Integrity Program could displace residents. Program actions associated with the Levee System Integrity Program also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

Delta Region (Continued)

WATER STORAGE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	Agricultural uses could be converted to No-Action uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	Open space uses could be converted to No-Action uses.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	Actions associated with Storage components could displace residents. Actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	Actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

Delta Region (Continued)

WATER CONVEYANCE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	Agricultural uses could be converted to No-Action uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	Open Space uses could be converted to No-Action uses.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	Actions associated with Conveyance components could displace residents. Actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	Actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

C-002530

5.3.2 Bay Region

ECOSYSTEM RESTORATION					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

Bay Region (Continued)

WATER QUALITY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

Bay Region (Continued)

WATER USE EFFICIENCY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

LEVEE SYSTEM INTEGRITY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

WATER STORAGE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Mitigation Strategies		None	None	None.	None

WATER CONVEYANCE					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Mitigation Strategies		None	None	None	None

5.3.3 Sacramento River Region

ECOSYSTEM RESTORATION

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

WATER QUALITY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

Sacramento River Region (Continued)

WATER USE EFFICIENCY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

LEVEE SYSTEM INTEGRITY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the Levee System Integrity Program could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the Levee System Integrity Program could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the Levee System Integrity Program could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing conditions without implementation of a CALFED Program alternative.	No significant impacts.	Conversion of agricultural uses associated with program actions could result in a minor increase in open space.	Conversion of agricultural uses associated with program actions could result in a minor increase in open space.	Conversion of agricultural uses associated with program actions could result in a minor increase in open space.
Developed	Existing conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the Levee System Integrity Program could displace residents. Program actions associated with the Levee System integrity Program also could physically disrupt or divide an established community.	Program actions associated with the Levee System Integrity Program could displace residents. Program actions associated with the Levee System Integrity Program also could physically disrupt or divide an established community.	Program actions associated with the Levee System Integrity Program could displace residents. Program actions associated with the Levee System integrity Program also could physically disrupt or divide an established community.
Consistency with Plans	Existing conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	None	None	None

Sacramento River Region (Continued)

WATER STORAGE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	Agricultural uses could be converted to No-Action uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	Open space uses could be converted to No-Action uses.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	Actions associated with Storage components could displace residents. Actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	Actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies	None		LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

C—002541

WATER CONVEYANCE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	Agricultural uses could be converted to No-Action uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	Open Space uses could be converted to No-Action uses.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	Actions associated with Conveyance components could displace residents. Actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	Actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

5.3.4 San Joaquin River Region

ECOSYSTEM RESTORATION

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.	Program actions associated with the ERPP could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.	Program actions associated with the ERPP could displace residents. Program actions associated with the ERPP also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

WATER QUALITY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

WATER USE EFFICIENCY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

LEVEE SYSTEM INTEGRITY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Mitigation Strategies		None	None.	None	None.

San Joaquin River Region (Continued)

WATER STORAGE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	Agricultural uses could be converted to No-Action uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Storage components could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	Open Space uses could be converted to No-Action uses.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	Actions associated with Storage components could displace residents. Actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.	Program actions associated with Storage components could displace residents. Program actions associated with Storage components also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	Actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies		None	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

San Joaquin River Region (Continued)

WATER CONVEYANCE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	Agricultural uses could be converted to No-Action uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.	Program actions associated with Conveyance components could convert existing agricultural uses to CALFED Program uses.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	Open Space uses could be converted to No-Action uses.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.	Conversion of agricultural uses associated with Program actions could result in an increase in open space.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	Actions associated with Conveyance components could displace residents. Actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.	Program actions associated with Conveyance components could displace residents. Program actions associated with Conveyance components also could physically disrupt or divide an established community.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	Actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.	Program actions could be inconsistent with local and regional plans where those actions would be implemented.
Mitigation Strategies			LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.	LU-1, LU-2, LU-3, and LU-4.

5.3.5 SWP and CVP Service Areas

ECOSYSTEM RESTORATION					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

WATER QUALITY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

SWP and CVP Service Areas (Continued)

WATER USE EFFICIENCY					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

SWP and CVP Service Areas (Continued)

LEVEE SYSTEM INTEGRITY

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.	No Significant Impacts.
Mitigation Strategies		None.	None.	None.	None.

C—002552

SWP and CVP Service Areas (Continued)

WATER STORAGE

Resource Category	Affected Environment	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Mitigation Strategies		None	None	None	None

SWP and CVP Service Areas (Continued)

WATER CONVEYANCE					
Resource Category	**Affected Environment**	**No Action Alternative**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Agriculture	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Open Space	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Developed	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Consistency with Plans	Existing Conditions without implementation of a CALFED Program alternative.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
Mitigation Strategies		None	None	None	None

Printed by
Department of Water Resources
Reprographics