4.5 AGRICULTURE

4.5 AGRICULTURE

INTRODUCTION

The planning area for the CCRMP is located on the western margin of the Sacramento Valley, one of the most productive agricultural regions of the United States. The combination of a favorable climate, topography, fertile soils, and available water resources attracted farmers to the region in the mid-1800s. Plentiful native grasslands encouraged early stock raising. By the late 1800s, the development of irrigated agriculture supported production of alfalfa, barley, and wheat (NHC, 1995). Continued agriculture has been the dominant land use in the lower Cache Creek basin. This section presents background information on the agricultural industry in Yolo County, discusses the farmland designations and soil types within the area, and describes the different methodologies and definitions used by agencies to identify "prime" and "non-prime" agricultural soils.

SETTING

Description of the Regional Environment

In 1992, approximately 565,178 acres of land in Yolo County were used for agriculture (DOC, 1994). Of this area, 135,602 acres were classified as grazing land and 427,481 acres were identified as "important farmland." According to the latest Agricultural Crop Report published by the Agricultural Commissioner, there were approximately 490,900 acres in Yolo County in agricultural production in 1994 (Table 4.5-1). Agriculture accounts for about 74 percent of the total acreage in the County.[1] The predominant crops, in terms of acreage, are rangeland for livestock, tomatoes for canning, wheat, safflower, straw, alfalfa, all fruits and nuts, corn, and rice (Table 4.5-1). The most important crops in 1994, in terms of value, were tomatoes, wheat, seed, rice, safflower, English walnuts, corn, melons, and almonds (Table 4.5-2). These ten crops accounted for almost $247 million in gross receipts, or four-fifths of the $297.9 million agricultural industry in Yolo County. Tomatoes accounted for almost 40 percent of the total revenues in 1994.

Description of Local Environment

The planning area for the CCRMP is located within an east-west trending alluvial valley formed along Cache Creek, a major regional stream. The planning area extends through a broad alluvial plain, called Hungry Hollow, between the Capay Dam at the western margin of the area to the western flank of the Dunnigan Hills. This portion of the valley is

[1]The agricultural acreage estimate is based on crop reports. Production of more than one crop from individual agricultural fields results in recounting of the acreage of each crop that is added to the total acreage. Acreage for some agricultural uses, such as poultry, are not included.

TABLE 4.5-1: Agricultural Acreage in Yolo County by Crop or Use.

Agricultural Crop or Use	Harvested Acres
Rangeland and Crop Stubble	126,612
Tomatoes (canning)	69,700
Wheat	59,031
Safflower	40,005
Screenings, Baled and Oat Straw	36,741
Hay Alfalfa	31,775
Seed Crops	22,633
All Fruits and Nuts (walnuts, almonds, prunes, grapes)	21,436
Corn	21,650
Rice	20,917
All Other Field Crops	19,492
Irrigated Pasture	13,000
All Other Vegetable Crops	5,057
Nursery Products	443
TOTAL	**490,858**
Acreage in Yolo County	661,760
Percentage in Agriculture[1]	74.2%

Source: Yolo County Agricultural Commissioner, *1994 Agricultural Crop Report.*

[1] Some double counting exists due to multiple crops so this number is approximate. Acreage for some agricultural uses, such as poultry, are not included.

TABLE 4.5-2. Gross Value of Most Important Crops in Yolo County

Crop	Value
Tomatoes	$118,121,000
Alfalfa Hay	20,986,000
Wheat	18,702,000
Seed	17,487,000
Rice	14,643,000
Safflower	12,488,000
English Walnuts	12,349,000
Corn	11,009,000
Melons	10,809,000
Almonds	10,416,000
All others	50,895,000
TOTAL	$297,905,000

Source: Yolo County Agricultural Commissioner, *1994 Agricultural Crop Report.*

filled with a thick sequence of alluvial sediments that are mantled by highly productive agricultural soils. The agricultural fields in this area are irrigated with surface water supplied by the West Adams Canal, located north of the creek, and numerous irrigation water supply wells.

The valley of Cache Creek narrows as the channel cuts through the Dunnigan Hills. Agriculture is limited in this reach of the creek. As the creek flows eastward out of the hills, the Cache Creek Valley enters the greater Sacramento Valley and forms a broad alluvial surface on which agriculture flourishes. The southern margin of this eastern portion of the study area is supplied irrigation water from the Moore and Magnolia Canals; the northern area is served by the East Adams Canal.

The CCRMP channel boundary encompasses approximately 5,000 acres of land within and along the Cache Creek channel. The land uses within the area west of County Road 94B are predominantly open space and aggregate mining; minor agricultural uses are present. East of County Road 94B, the planning area expands to include lands away from the creek (but within the 100-year flood hazard zone). Although aggregate mining occurs in and adjacent to the creek channel, the majority of the land in this portion of the planning area is currently in agricultural production.

Over 2,000 acres of land within the CCRMP area are currently used as farmland. Most of these lands are located in the eastern portion of the planning area and are included because they lie within 100-year flood hazard zones. The farmlands within the CCRMP planning boundaries are generally flat land, composed of prime and non-prime soils that are irrigated. Prime agricultural lands are generally considered to consist of lands that do not present significant limitations to agricultural production; these lands have the highest agricultural value. Non-prime agricultural lands are farmlands that are limited by less than optimal soil conditions, drainage problems, or incompatible adjacent land uses.

Different public agencies use various criteria for designating agricultural land as "prime farmland." Applicable definitions of prime farmland include those employed by 1) the U.S. Department of Agriculture Natural Resources Conservation Service (USDA), 2) the California Department of Conservation (DOC) Prime Farmland Mapping and Monitoring Program, 3) the State of California in the Williamson Act of 1965, and 4) Yolo County Surface Mining Reclamation Ordinance.

U.S. Department of Agriculture

The soil capability classification system developed by the USDA is perhaps the most widely known and cited. The USDA has prepared county-level Soil Surveys for most agricultural counties in the United States. The USDA uses a soil classification system based on eight primary capability classes, which can then be further defined in terms of capability "subclasses" and capability "units."

The USDA county soil surveys classify farmland by capability and suitability for agricultural use, according to soil types and cropping limitations. While the USDA soil surveys do not designate any land as "prime farmland," both the State Mining and Geology Board (SMGB) Reclamation Regulations (Section 3707 of CCR Title 14) and the Yolo County Interim Criteria reference the USDA definition of prime agricultural soils. Past practice may have been to consider lands in Capability Classes I and II as prime farmland; however, the USDA has recently been using a list that identifies prime farmlands in Yolo County by soil type, qualified by whether or not the lands are irrigated or drained.

The USDA soil classification system further defines all of the soil classes (except for Class I) with one or more capability subclasses, which are represented with a small letter immediately following the class Roman numeral. Each of the subclass designations indicates a general characteristic that limits the use of the soils. For example, a Class IIe soil is limited by a risk of erosion. The most commonly found capability subclass letters used to describe Yolo County soils are described below:

- **"e"** shows that the main limitation is a risk of erosion unless close-growing plant cover is maintained;
- **"w"** shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage);
- **"s"** shows that the soil is limited mainly because it is shallow, droughty, or stony.

The USDA soil classification system also designates a capability "unit" for similar soil types within the same subclass. The capability unit is expressed as an Arabic number, following the class Roman numeral and small letter subclass, such as IIs-3. The capability unit number gives further soil limitation information, which allows soils to be more specifically characterized as to common management practices.

The most commonly used capability unit numbers in Yolo County soils include:

0 A problem or limitation caused by sand or gravel in the substratum.
1 An actual or potential erosion hazard.
2 A problem or limitation of wetness caused by poor drainage or flooding.
3 A problem or limitation caused by slow or very slow permeability of the subsoil or substratum.
4 A problem or limitation caused by coarse soil texture or excessive gravel.
5 A problem or limitation caused by moderately fine or fine textured soil.
6 A problem or limitation caused by salt or alkali.
7 A problem or limitation caused by cobblestones, other stones, or rock outcrops.
8 A problem or limitation caused by a shallow depth to soil bedrock or hardpan.
9 A problem or limitation caused by low fertility, acidity, or toxicity (including excess boron).

Finally, the USDA employs a similar, but separate, soil classification system that is based on a 100-point scale. The Storie Index was developed to indicate relative suitability of a soil for intensive agriculture. The Storie Index is analogous to the soil capability classification, except that only soil characteristics, not outside factors such as flooding or erosion, are described. Grade 1 soils (Storie Index of 80 to 100) have few or no limitations that restrict their use for crops; grade 2 soils (Storie Index of 60 to 80) are suitable for most crops but

they have minor limitations that narrow the choice of crops and have few special management needs. Other grades with lower ratings have progressively greater limitations.

California Department of Conservation (DOC)

In California, the DOC Prime Farmland Mapping and Monitoring Program has been working collaboratively with the USDA since 1980 to map many of the State's agricultural lands, on a county-by-county basis, according to their suitability for agricultural production. The DOC has prepared several Important Farmland Maps for Yolo County, with the most recent map updated in 1994. The maps are now updated by the DOC every two years.

The DOC classification system identifies five types of agricultural land:

Prime Farmland

Land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime farmland must have been used for the production of crops at sometime during the last two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Statewide Importance

Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.

Unique Farmland

Land of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. The land must have been cropped at some time during the two update cycles prior to the mapping date.

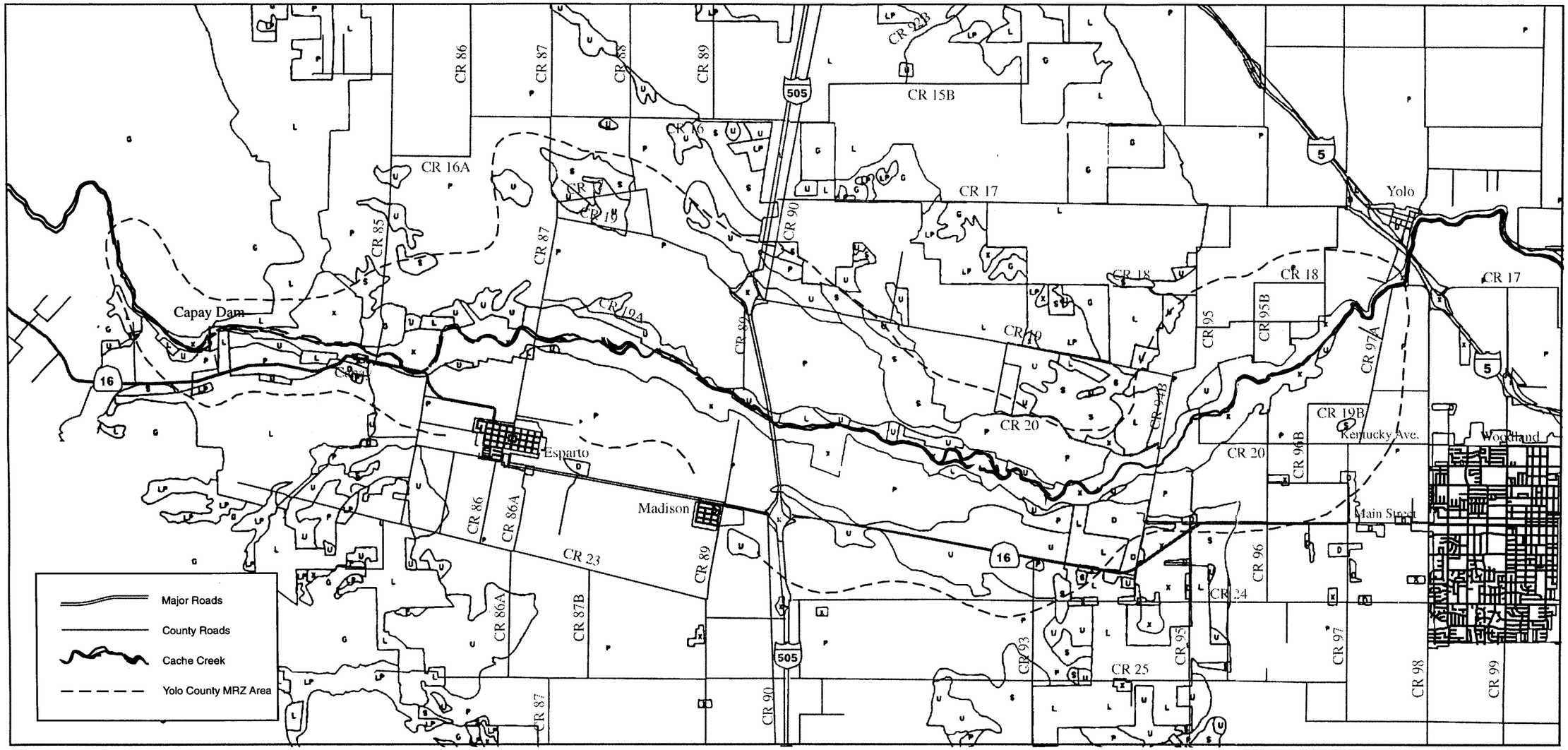
Farmland of Local Importance

Cultivated farmland having soils which meet the criteria for Prime or Statewide, except that the land is not presently irrigated, and other non-irrigated farmland (Yolo County definition)

Grazing Land

Land on which the existing vegetation is suited to the grazing of livestock. This category is used only in California and was developed in cooperation with the California Cattlemen's Association, the University of California Cooperative Extension Service, and other groups interested in knowing the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

The DOC Important Farmland Map for Yolo County (DOC, 1994) indicates significant acreage designated as prime farmland is located within the CCRMP area east of County Road 94B (Figure 4.5-1). Some prime farmland and other important farmlands are located



P PRIME FARMLAND
Land with the best combination of physical and chemical features for the production of agricultural crops.

S FARMLAND OF STATEWIDE IMPORTANCE
Land with a good combination of physical and chemical features for the production of agricultural crops.

U UNIQUE FARMLAND
Land of lesser quality soils used for the production of the State's leading agricultural cash crops.

L FARMLAND OF LOCAL IMPORTANCE
Cultivated farmland having soils which meet the criteria for Prime or Statewide, except that the land is not presently irrigated, and other nonirrigated farmland.

LP LOCAL POTENTIAL FARMLAND
Prime or Statewide soils which are presently not irrigated or cultivated.

G GRAZING LAND
Land on which the existing vegetation is suited to the grazing of livestock.

D URBAN AND BUILT-UP LAND
Land occupied by structures or infrastructure to accomodate a building density of at least one unit to one and one-half acres, or approximately six structures to ten acres.

X OTHER LAND
Land which does not meet the criteria of any other category.

W WATER
Water bodies of 40 or more acres in size.

N

Scale in Miles
0 1 2

Figure 4.5-1 Important Farmlands Map

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION, AND FARMLAND MAPPING AND MONITORING PROGRAM, 1994

on high terraces along the creek. The areas of prime farmland are generally consistent with the location of Class I and Class II soils. Most of the areas within the channel of Cache Creek are identified as "other land" which have limited or no agricultural use.

Williamson Act and Yolo County Surface Mining Reclamation Ordinance

The California Land Conservation Act, also known as the Williamson Act, was adopted by the State of California in 1965 to encourage the preservation of the State's agricultural lands. To carry out the Act, a land contract is established, whereby the County Board of Supervisors stabilizes taxes on qualifying lands. In return, the land owner guarantees to provide for the exclusion of uses other than agricultural, and other than those compatible with agricultural uses, for the 10 year duration of the contract. Each year, on its anniversary date, the contract is automatically renewed unless a Notice of Non-Renewal is filed.

The Williamson Act was amended in 1994 to restrict the types of uses allowed on contracted land. All new uses must meet all of the findings described in Section 51238.1 to protect agricultural activities and agricultural land. Section 51238.1 includes the following principles of compatibility:

(a) Uses approved on contracted lands shall be consistent with all of the following principals of compatibility:

(1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.

(2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.

(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use. In evaluating compatibility a board or council shall consider the impacts on noncontracted lands in the agricultural preserve or preserves.

(b) A board or council may include in its compatible use rules or ordinance conditional uses which, without conditions or mitigations, would not be in compliance with this section. These conditional uses shall conform to the principals of compatibility set forth in subdivision (a) or, for non-prime lands only, satisfy the requirements of subdivision (c).

(c) In applying the criteria pursuant to subdivision (a), the board or council may approve a use on non-prime land which, because of on-site or off-site impacts, would not be in compliance with paragraphs (1) and (2) of subdivision (a), provided the use is approved pursuant to a conditional use permit that shall set forth findings, based on substantial evidence in the record, demonstrating the following:

(1) Conditions have been required for, or incorporated into, the use that mitigate or avoid those on-site or off-site impacts so as to make the use consistent with the principals set forth in

paragraphs (1) and (2) of subdivision (a) to the greatest extent possible while maintaining the purpose of the use.

(2) the productive capability of the subject land has been considered as well as the extent to which the use may displace or impair agricultural operations.

(3) The use is consistent with the purposes of this chapter to preserve agricultural and open-space land or supports the continuation of agricultural uses, as defined in Section 51205, or the use or conservation of natural resources, on the subject parcel or on other parcels in the agricultural preserve. The use of mineral resources shall comply with Section 51238.2.

(4) The use does not include a residential subdivision. For the purposes of this section, a board or council may define non-prime land as land not defined as 'prime agricultural land' pursuant to subdivision (c) of Section 51201 or as land not classified as 'agricultural land' pursuant to subdivision (a) of Section 21060.1 of the Public Resources Code. Nothing in this section shall be construed to overrule, rescind, or modify the requirements contained in Sections 51230 and 51238 related to non-contracted lands within agricultural preserves.

Section 51238.2 specifically addresses the compatibility of mineral extraction activities on contracted lands, and for the purposes of the OCMP and project alternatives, should be read together with Section 51238.1. It reads as follows:

Mineral extraction that is unable to meet the principals of Section 51238.1 may nevertheless be approved as a compatible use if the board or council is able to document that (a) the underlying contractual commitment to preserve prime land as defined in subdivision (c) of Section 51201, or (b) the underlying contractual commitment to preserve non-prime land for open-space use as defined in subdivision (c) of Section 51201, will not be significantly impaired.

Conditions imposed on mineral extraction as a compatible use of contracted land shall include compliance with the reclamation standards adopted by the Mining and Geology Board pursuant to Section 2773 of the Public Resources Code, including the applicable performance standards for prime agricultural land and other agricultural land, and no exception to these standards may be permitted. For purposes of this section, 'contracted land' means all land under a single contract for which an applicant seeks a compatible use permit.

The Williamson Act and both the existing and draft Yolo County Surface Mining Reclamation Ordinances' definition of prime farmland are identical. Prime farmlands are defined as:

- All land that qualifies as Class I or Class II in the Soil Conservation Service land use capability classifications.
- Land that qualifies for ratings 80 through 100 in the Storie Index Rating.
- Land that supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the USDA.
- Land planted with fruit or nut bearing trees, vines, bushes or crops that have a non-bearing period of less than five years and that will normally return during the commercial period on an annual basis from the production of unprocessed agricultural plant production not less than $200 per acre.

Planning Area Soils

The soil types that have been identified within the planning area by the Yolo County Soil Survey (USDA, 1972) are listed in Table 4.5-3. Each of the soils' Capability Class, its common name, and its Storie Index are indicated. A generalized map of the soils within the CCRMP is presented in Figure 4.3-4.

The recent alluvial deposits within the Cache Creek channel are identified as Riverwash (Rh). This soil mapping unit is characterized by excessively drained sandy and gravelly stream deposits. These deposits have very low natural fertility. The Riverwash soils support scattered riparian vegetation. The low fertility and high permeability of the soils preclude agricultural production.

Portions of the stream channel and low terraces along the channel also contain Loamy Alluvial Land (Lm) and Soboba gravelly sandy loam. The Loamy Alluvial Land mapping unit includes nearly level, stratified, fine-grained alluvium which has been recently deposited. The soil types are extremely variable but include sand, sandy loam, and silt loam. These deposits support growth of annual grasses, forbs, willows, tamarisk, and cottonwood. Loamy Alluvial Land soils are Capability Class IVs-4. Although these soils can support agricultural production, only limited agriculture is practiced within this mapping unit. The Soboba soils are excessively drained, very gravelly loamy sands. These Capability Class IVs-4 soils are generally used for dryland pasture.

Soils that have developed on the higher terraces along Cache Creek are generally suitable for irrigated agriculture. Soil mapping units located within the CCRMP area Brentwood silty clay loam (BrA), Yolo silt loam (Ya), Yolo silty clay loam (Yb), and Zamora loam. These are identified as Capability Class I-1 soils and are generally excellent soils for agricultural use. The higher terraces also contain Capability Class II soils, including Rincon silty clay loam (Rg), Sycamore silt loam (So), Tehama loam (TaA), and Reiff gravelly loam (Rb). These soils present only minor limitations to agricultural use, including minor soil drainage problems. Approximately 2,100 acres of the CCRMP area contain Class I or Class II soils. The largest areas of these soils are located north and south of the creek and east of County Road 94B. The southern margin of the planning area also includes these soils.

Excessive boron concentrations have been identified in agricultural soils within the Cache Creek basin. The level of boron in some soils presents a limitation to agricultural productions. The boron, a toxin for most plants, occurs naturally in the water supplied to the area for irrigation. Therefore, the concentration of boron in soil can increase through repeated irrigation. The boron concentrations can pose a significant limitation for all soils, including Class I and Class II soils. This limitation is not a characteristic of the soils but results from the agricultural use of the soil. The Yolo County Flood Control and Water Conservation District (YCFCWCD) restricts the release of irrigation water until boron levels have dropped below a threshold to reduce the potential for accumulation of boron in agricultural soils.

TABLE 4.5-3: Soil Types within the CCRMP Planning Area

Map Symbol	Soil Series Name	Capability Class	Storie Index
BrA	Brentwood silty clay loam	I-1	81
Lm	Loamy alluvial land	IVs-4	59
Rg	Rincon silty clay loam	IIs-3	73
Rh	Riverwash	VIIIw-4	25
Sn	Soboba gravelly sandy loam	IVs-4	25
So	Sycamore silt loam	IIw-2	76
TaA	Tehama loam	IIs-3	72
Ya	Yolo silt loam	I-1	100
Rb	Reiff gravelly loam	IIs-4	71
SmD	Sehorn-Balcom complex	IIIe-5	41,62
Yb	Yolo silty clay loam	I-1	90
Za	Zamora loam	I-1	95

Source: U.S. Department of Agriculture, Soil Conservation Service, 1972, Soil Survey of Yolo County, California.

Regulatory Setting

Yolo County General Plan

Several goals and numerous policies and elements of the Yolo County General Plan are relevant to the proposed CCRMP. In particular, the General Plan's stated goals include:

- Wise land use based on both physical and social characteristics of the County;
- Protect prime and other agricultural land from urban development;
- Establish natural and wildlife areas (preserves);
- Provide long-term assurance of the terms of permits and approvals.

Land use policies of the General Plan that are relevant to the proposed CCRMP are listed below. The majority of the policies are provided verbatim; some lengthy policies are summarized and, if so, are indicated as such.

LU 6 It is the policy of Yolo County to vigorously conserve and preserve the agricultural lands in Yolo County. Yolo County shall protect and conserve agricultural land use especially in

areas presently farmed or having prime agricultural soils and outside of existing planned urban communities and outside of city limits.

The CCRMP contains Goal 7.2-1 which promotes protection of farmland along Cache Creek. However, the CCRMP could result in removal of productive agricultural land in meeting the CCRMP goal of development of a more stable Cache Creek channel. The development of the more stable channel could also result in filling and reclamation of some areas within the active creek channel to agricultural use. The potential loss of agricultural land is discussed in Impact 4.5-1.

LU 7 Non-agricultural land use activities are prohibited from agriculturally designated areas in Yolo County except as defined in policies LU 12, LU 17, LU 18, LU 19 (reserved for future use), and LU 46.

The exceptions defined in policies LU 12, LU 17, LU 18, and LU 46 do not directly apply to the draft CCRMP. Aggregate extraction is a permissible use for agricultural lands zoned General Agriculture. These activities are currently restricted in areas zoned Agricultural Preserve to operations necessary for erosion control. Under the CCRMP, modifications of the existing channel would be allowed only to provide for increased channel stability. Although the majority of these activities could occur in areas currently zoned for aggregate mining, some sand and gravel extraction could occur in lands presently zoned for agriculture. Rezoning of the area within the boundary to Open Space (OS) zone, as proposed in the CCRMP, would provide a zoning designation that is consistent with channel stabilization, habitat restoration, and agriculture.

LU 8 (Williamson Land Conservation Program) and LU 9 (Agricultural Preserve Zoning). In summary, these policies provide for adoption by the County of the Williamson Act Land Conservation Program, and for application of Agricultural Preserve (A-P), zoning to all lands which qualify for an agricultural preserve contract.

The vision and policies of the CCRMP would not conflict with the General Plan policy to adopt zoning which supports the Williamson Act. The CCRMP would not adversely affect the potential for application of Williamson Act contracts for eligible lands.

Open space policies of the General Plan that are particularly relevant to the proposed project include:

OS 1 Yolo County shall preserve appropriate open space land through available means of land use controls, regulations, and advice or guidance and through coordination with the other elements of this General Plan, as amended, and with other agencies.

OS 2 In summary, this policy states that Yolo County shall use diverse policies and other regulatory means to preserve open space. This policy defines "open space" to include areas used for managed resource production including agricultural land and areas containing major mineral deposits, including sand and gravel.

OS 3 Yolo County shall preserve agricultural land as the principal component of open space.

The draft CCRMP contains policies to protect agricultural lands and enhance the quality of habitat along Cache Creek. These policies are consistent with the County General Plan policies.

Conservation policies of the General Plan that are relevant to the draft CCRMP include:

CON 5 This policy states, in part, that "Yolo County shall require conservation of natural resources in the development and managed utilization including... the reclamation of lands and waters."

CON 11 Yolo County shall encourage the highest agricultural use of good agricultural soils and the development of acceptable agricultural industry.

CON 12 Yolo County shall regulate land use and encourage and cooperate with appropriate agencies to conserve, study, and improve soils. Prime soils shall be preserved outside of designated urban areas.

CON 13 This policy states, in part, that "Yolo County shall regulate development to avoid degradation of land forms through non-agricultural grading..."

The policies of the CCRMP to protect farmland (Goal 7.2-1) and manage the creek to reduce the loss of farmland from erosion (Objective 7.2-3) are consistent with the General Plan conservation policies.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The project would have a significant impact on agricultural resources if it would:

- Permanently convert prime agricultural soils to a non-agricultural use;
- Cause the loss of agricultural productivity or crop values that represent a major proportion of the County's production or value of crops;
- Impair or degrade the existing productivity of agricultural soils, or adversely affect agricultural resources and operations, in the planning area or county; or
- Conflict with adopted plans or policies of State and other agencies that seek to preserve or protect agricultural soils, lands, and operations.

Impact 4.5-1
Potential Permanent Loss of Agricultural Land

Lands bordering Cache Creek are affected by the hydraulic and hydrologic conditions within and adjacent to the channel. The Cache Creek channel within the CCRMP planning area is characterized as a relatively unstable channel. Section 4.3 of this EIR provides a discussion of the causes and effects of the channel instability. Some areas along the channel are susceptible to significant channel bank erosion, particularly during high creek

flow events. The lateral erosion of the channel can result in removal of large areas of land, including productive farmlands. A recent example of loss of agricultural land during a high flow event is the erosion of approximately 60 acres of crop land along the south bank of the creek east of the Capay bridge (approximately 2,000 feet) during flooding events in 1983 and 1986. Across the creek from this location, approximately 18 acres of grazing land were also lost during migration of a meander during the 1986 flooding event (Adamo, 1996).

Draft CCRMP

The following policies of the CCRMP relate to the protection of agricultural land within the CCRMP planning area:

Goal 7.2-1: Protect farmland along Cache Creek from land uses that may conflict with agricultural operations.

Obj. 7.3-3: Manage Cache Creek to reduce the loss of farmland from erosion and increase the recharge potential of the channel.

The vision and purpose of the CCRMP to increase the stability of Cache Creek would provide protection to farmland against erosion. Channel stabilization, if successful, would result in reduced loss of agricultural land to erosion. Current and historic efforts by farmers to reduce the potential for erosion (bank stabilization) and reclaim lands lost to erosion have been performed on a site-by-site basis. Although these activities have provided localized protection for individual landowners or groups of owners, the potential changes to the hydraulics of the creek caused by these activities have not been systematically analyzed or monitored. Under the CCRMP, all modifications to the Cache Creek channel would be evaluated by a Technical Advisory Committee for potential cumulative effects on the overall stability of the channel. This oversight and monitoring of channel conditions under the CCRMP would improve the possibility of controlling adverse responses of the creek to changes caused by modifications to the channel. Relative to existing conditions, the CCRMP would provide a more comprehensive and coordinated approach to reducing the potential for erosion of farmlands.

However, the CCRMP presents a conceptual Cache Creek channel model (Test 3) that could result in loss of agricultural lands. The Test 3 design identifies a generalized preferred channel form which would require widening of the channel in some areas while narrowing the channel in other areas. Channel widening would require excavation of the channel banks or removal of some existing levees. The position of the Test 3 model boundary indicates that some agricultural land could be removed. Approximately 33 acres of farmland are within areas designated for channel widening. Of these lands, approximately 11 acres are designated as Prime Farmland.

Although channel widening could result in loss of agricultural land, areas identified in the Test 3 model for channel narrowing could provide opportunities for filling and development

of agricultural land. Fill areas located adjacent to existing farm fields could be reclaimed to agriculture.

Alternative 1a: No Project (Existing Conditions)

Under alternatives 1a, 1b, and 2, the CCRMP would not be adopted. It is not expected that any comprehensive Cache Creek channel management program would be developed or implemented. Current unstable channel conditions would persist, potentially causing loss of agricultural land to erosion. Protection of agricultural land from erosion would be performed by individual land owners. This is a less-than-significant impact. Modification of the channel could require permits from regulatory agencies including 404 permits from the U.S. Army Corps of Engineers (COE), Streambed Alteration Agreements from the California Department of Fish and Game (CDFG), Waste Discharge Requirements from the Regional Water Quality Control Board, and Floodplain Development Permits from the Yolo County Community Development Agency (YCCDA). Prior to issuance of such permits, the regulating agencies would evaluate the potential impact of activities under consideration on upstream and downstream channel stability.

Alternative 1b: No Project (Existing Permits and Regulatory Condition); and
Alternative 2: No Mining (Alternative Site)

Same as alternative 1a.

Alternative 3: Channel Bank Widening (Implement Streamway Influence Boundary)

Under this alternative, active management of stability of Cache Creek would not be permissible. In addition, no in-channel commercial mining would be permitted. Erosion would be a natural process that would not be controlled. Landowners would not be allowed to protect property from erosion. Although the expected loss of agricultural land cannot be accurately estimated until the uncontrolled channel response could be observed, all agricultural land within the Streamway Influence Boundary could be subjected to erosion. Large areas of Prime Farmland and other important farmlands could be affected by erosion under this alternative. Portions of these lands may be subject to more frequent flooding under this alternative if channel capacity were lost due to aggradation. Agricultural land could also be lost or disturbed by bridge lengthening projects proposed by this alternative. Additional agricultural land could be lost due to the off-channel mining projects described for this alternative. The amount of agricultural land lost would depend on the types of reclamation proposed for the off-channel mining projects. Minimally, some loss of agricultural land would result from lowering of reclaimed lands and construction of perimeter slopes. The loss of agricultural land to erosion would not be prevented by channel management and would be a significant and unavoidable impact.

Mitigation Measure 4.5-1a (CCRMP)

None required.

Mitigation Measure 4.5-1b (CCRMP, A-1a, A-1b, A-2)

Any mining occurring off-channel shall be required to comply with OCMP policies.

Mitigation Measure 4.5-1c (A-3)

None available.

Implementation of Mitigation Measures 4.5-1a and 4.5-1b would reduce the impacts to less-than-significant levels. (CCRMP, A-1a, A1-b, and A-2). The impact of loss of agricultural land would remain significant and unavoidable under Alternative 3.

Impact 4.5-2
Potential Impacts of Habitat Restoration on Agricultural Productivity.

The CCRMP channel boundary is located at a margin separating agricultural fields from the riparian habitat corridor along a major regional stream. The historical development of agriculture in the lower Cache Creek basin resulted in the clearing of large areas of native riparian and oak woodland habitat. During the historical period, portions of the active floodplain of Cache Creek were filled to allow expansion of agriculture. Confinement of the channel has also been promoted by incision (downcutting) of the stream in response to several factors including reduction of the channel width, construction of local bridges in the channel, and in-stream aggregate mining. The result of these influences has been development of a relatively narrow riparian corridor along the creek.

Riparian and other habitat areas present conditions, which, if not controlled, can be adverse to farming. Some healthy riparian environments support species that can damage crops. A common conflict associated with riparian habitat is increased rodent (e.g., ground squirrel) populations. Increased pest control measures in adjacent agricultural fields could be required to reduce potential crop damage. Riparian forests can provide habitat for vegetation (such as mistletoe) which can create maintenance problems for tree crop agriculture. Habitat restoration can require irrigation, potentially conflicting with water needs for agriculture.

The agricultural community has become increasingly concerned about the possibility that protection or enhancement of habitat areas near agricultural lands can provide habitat for listed species, thereby resulting in restrictions on agricultural practices imposed by regulatory agencies. Although regulatory agencies, such as the CDFG and USFWS, rarely prosecute agricultural landowners for alleged violations of endangered species law, some cases have caused concern among farmers. To avoid the possibility of listed species locating in agricultural areas, farmers may choose to conduct management practices that discourage development of habitat, or habitat potential, in and around agricultural fields. Such practices can include regular cultivating of fallow fields to prevent vegetative growth which may create habitat, drainage of areas with potential for wetland development, and elimination of fence row vegetation through herbicide application.

Draft CCRMP

The CCRMP identifies the restoration and enhancement of riparian habitat as a primary goal. However, the CCRMP also acknowledges the compatibility of restoration projects with agricultural activities as a critical component of the plan. The implementation of the restoration plans presented in the Biological Resources Element of the CCRMP would not result in the direct loss (conversion) of existing productive agricultural lands to habitat use. The following policies of the CCRMP relate to the compatibility of habitat with agriculture:

Goal 7.2-2: Develop opportunities where restoration efforts and agriculture can provide mutual benefits.

Obj. 7.3-1: Ensure the compatibility of planned habitat and the channel floodplain with adjoining agricultural land, so that productivity is not adversely affected.

This goal and objective are supported by the following Actions and Performance Standards:

Action 7.4-1: Work with the Department of Fish and Game to investigate the feasibility of developing a "Safe Harbor" program for agricultural operations potentially impacted by the development of riparian habitat along Cache Creek.

"Safe Harbor" programs, such as the one proposed for the San Joaquin Valley (Presley, 1995) provide incentives to provide protection for landowners who voluntarily enter into a cooperative agreement for habitat development from any additional liability under the Endangered Species Act of 1973 (the Act) for future disturbance of the developed habitat. In essence, the participating landowner would be covered for incidental take of listed species on the habitat created under the program. The protection would extend to agricultural lands adjacent to the developed habitat, but would not apply to existing habitat areas, due to the likelihood that such habitat areas may already be inhabited by listed species. The program would therefore promote the development of new or enhanced habitat within the CCRMP area, but would not restrict the use of adjoining properties for future agricultural production.

A "Safe Harbor" program has not been proposed by any of the regulatory agencies with jurisdiction over the necessary permitting for such a program. However, the Yolo County Draft Habitat Conservation Plan)Yolo county, 1995) includes a similar program in order to protect farmers from future liability caused by the development of nearby habitat. In order to qualify, participating properties must meet specific site suitability criteria and be placed within a conservation easement. Agricultural parcels within one-half mile radius of the participating property would then receive "hold harmless" protection from the incidental take provisions of the Federal Endangered Species Act and the California Endangered Species Act. Properties protected with a hold harmless designation will be able to continue ordinary farm and maintenance practices, even if such activity results in an incidental take. This protection does not, however, relieve the participating landowner of responsibility for direct takings, and compliance with other applicable federal, state, or local laws is still required. Should the HCP fail to be adopted, or if this portion of the plan is not included

in the adopted document, then the County should consult with the State Department of Fish and Game and the U.S. Fish and Wildlife Service to develop a "Safe Harbor" program.

Action 7.4-2: Design and develop habitat restoration projects so that they do not adversely impact the agricultural productivity of nearby farmland.

This action does not specifically identify a methodology to implement this action. The CCRMP should include a performance standard which establishes the method and responsibility for implementing the action.

PS. 7.5-1: Revegetation projects may be coordinated with agricultural drainage structures that empty into Cache Creek or previously mined areas separated from the creek, so that the sediment deposited can provide additional topsoil and so that riparian species requiring a more steady supply of water can be established.

The CCRMP should provide a methodology for implementation of this standard. The potential for implementation at any particular location would depend on site-specific conditions. An appropriate approach to implementation would be to identify properties with favorable conditions for the integration of best management practices for use of agricultural drainage features into habitat restoration projects.

PS. 7.5-2: Vegetated buffers should be placed between restored habitat areas and adjoining farmland, in order to minimize the potential for riparian areas to serve as reservoirs for predators and insect pests. Said buffers will also reduce the effects of noise, dust, and spraying generated by agricultural operations on wildlife and riparian vegetation.

This performance standard should be expanded to specify the responsibility for implementation of this policy.

PS. 7.5-3: Species and water features included in habitat areas should be designed to discourage the intrusion of wildlife, insect pests, and weeds that would impair local crops.

This standard does not identify the species or conditions that should be discouraged under this measure. The CCRMP should include a performance standard which promotes the evaluation of adverse conditions associated with habitat restoration, creation, or enhancement.

Alternative 1a: No Project (Existing Conditions)

Under alternatives 1a, 1b, and 2, no habitat creation or restoration would occur. The potential conflicts between existing agricultural lands and existing riparian habitat would persist. The alternatives would not, therefore, increase or decrease the existing conditions.

Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Same as alternative 1a.

Alternative 2: No Mining (Alternative Site)

Cessation of in-channel mining under this alternative would likely result in increased riparian vegetation within and along the active channel of Cache Creek. Increased riparian vegetation could result in increased pest management requirements for adjacent agricultural fields.

Alternative 3: Channel Bank Widening (Implement Streamway Influence Boundary)

Implementation of this alternative, a broad riparian corridor along Cache Creek (possibly throughout the Streamway Influence Boundary) could develop over time. An expanded corridor could result in increased biodiversity, possibly including pests affecting agricultural production. However, it is also possible that the corridor could remain similar in size to exiting conditions.

Mitigation Measure 4.5-2a (CCRMP, A-3)

The CCRMP shall be amended to include the following performance standard to ensure the continued agricultural productivity of lands adjoining newly developed habitat areas along Cache Creek:

> *PS. 7.5-4: The Yolo County Community Development Agency, in consultation with the Yolo County Resource Conservation District Board, and with approval by the Board of Supervisors, shall present a request to the California Department of Fish and Game to initiate a "Safe Harbor" program for the CCRMP/OCMP planning area, or develop a functionally equivalent program.*

Mitigation Measure 4.5-2b (CCRMP, A-3)

The following performance standard shall be included in the CCRMP to ensure minimization of potential conflicts associated with development of habitat in areas adjacent to agricultural uses:

> *PS. 7.5-6: All habitat restoration, creation, or enhancement plans proposed within the CCRMP channel boundary shall be reviewed by the County Agricultural Commissioner, if requested by proponents of channel modification projects. The Agricultural Commissioner shall to identify and recommend appropriate vegetative buffers between habitat areas and agricultural fields and effective management of site water resources (including appropriate integration of agricultural drainage features into habitat planning). Buffers that would result in partial or secondary loss of agricultural land shall not be recommended by the Agricultural Commissioner.*

Mitigation Measure 4.5-2c (A-1a, A-1b, A-2)

None required.

Implementation of Mitigation Measures 4.5-2a and 4.5-2b would reduce the potential impacts on agricultural productivity to a less-than-significant level under

the CCRMP and Alternative 3. No mitigation would be required for Alternatives 1a, 1b and 2.

Impact 4.5-3
Potential Impacts of Agricultural Activities on the Success of Habitat Restoration

The predominant land use within the lower Cache Creek basin is agricultural production. Activities associated with agricultural production can, if not controlled, present adverse impacts to natural habitat areas. Potential significant impacts to habitat can include erosion of habitat areas related to discharge of agricultural runoff. The use of agricultural chemicals (pesticides and herbicides) can result in degradation of the quality of water available to habitat areas. Elimination of fence row habitat, through mowing, disking, or chemical control, can result from agricultural practices. These impacts have the potential to occur under existing conditions. Existing regulations control the application of agricultural chemicals in proximity to recognized habitat areas and water courses. However, current regulation of the control of agricultural runoff is limited.

Draft CCRMP

Although the CCRMP does not propose proactive development of agricultural uses within the channel boundary, the plan does address the need to control potential impacts of agricultural uses on proposed habitat restoration. The following policies are included in the CCRMP which address the potential impacts of agricultural use on habitat:

Goal 7.2-2: Develop opportunities where restoration efforts and agriculture can provide mutual benefits.

Obj. 7.3-2: Coordinate with local farmers to employ existing agricultural practices in improving the quality of riparian habitat.

Action 7.4-1: Work with the Department of Fish and Game to investigate the feasibility of developing a "Safe Harbor" program for agricultural operations potentially impacted by the development of riparian habitat along Cache Creek.

Action 7.4-3: Incorporate agriculturally related features, such as agricultural forage areas and drainage systems, into the design of habitat planning.

PS. 7.5-4: Trees that are suitable for wildlife perching near agricultural fields dedicated to row crop production should be incorporated into habitat design, in order to provide foraging habitat for Swainson's hawks and other birds of prey.

Although these policies establish the intention to reduce the potential impact of farming on habitat, the CCRMP needs to be made more specific as to how these policies would be implemented. For example, the responsibility for the vegetative buffers described in 7.5-2 should be defined. The responsibility for control of agricultural runoff into revegetation areas, and related existing or future erosion, should be addressed.

Alternative 1a: No Project (Existing Conditions)

Alternatives 1a, 1b, and 2 would not result in significant changes to any existing conflicts between habitat and agricultural land uses. Existing conditions do not currently present observable damage to habitat related to agricultural use.

Alternative 1b: No Project (Existing Permits and Regulatory Condition); and
Alternative 2: No Mining (Alternative Site)

Same as alternative 1a.

Alternative 3: Channel Bank Widening (Implement Streamway Influence Boundary)

Under alternative 3, no management controls would be permissible within the Streamway Influence Boundary. Under these conditions, future expansion of the active floodplain would likely occur. The expansion of the floodplain would promote the reduction of agricultural uses and expansion of the riparian corridor. Increased width of the active channel and floodplain could result in increased biodiversity and an increased potential for establishment of species susceptible to the impacts of agriculture.

Mitigation Measure 4.5-3a (CCRMP, A-3)

Implementation of policies contained in the CCRMP and Mitigation Measures 4.5-2a and 4.5-2b would mitigate the potential impacts of agriculture on habitat.

Mitigation Measure 4.5-3b (A-1a, A-1b, A-2)

None required.

Implementation of Mitigation Measures 4.5-3a would reduce this impact to a less-than-significant level for the CCRMP and Alternative 3. No mitigation is required for Alternatives 1a, 1b and 2.

Impact 4.5-4
Incremental Increases to Cumulative Losses of Agricultural Land and Productivity over Time

The potential loss of agricultural land within Yolo County is presented by land development pressures related to expansion of urban development and other competing land uses. Recent agricultural land conversion rates for Yolo County tabulated by the California Department of Conservation (DOC, 1994) indicate that during the years 1990-1992, approximately 2,225 net acres of prime farmland were lost. The main reason for the net decrease was the redefinition of prime lands to less quality lands identified by DOC as farmlands of local importance. The "downgrading" of the agricultural value of these lands was primarily the consequence of prime land being left idle for two or more planting cycles. During the same period, the DOC reported that 319 acres of prime farmland had been

converted to urban uses and 448 acres of prime soils had been converted to "other land." The DOC estimates that a total of approximately 3,613 acres of important farmland (including prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance) were lost during this period.

The Woodland General Plan indicates that between 2,108 (alternative 2) and 2,296 acres (alternative 1) of agricultural land could be converted to urban land uses by 2015. The expected growth within the urban expansion areas for the towns of Esparto and Madison could also result in the additional loss of approximately 2,200 acres of agricultural land to urban development.

Draft CCRMP

Under the CCRMP, implementation of channel improvements to meet the Test 3 model could result in removal of approximately 33 acres of farmland. This loss would represent approximately 0.9 percent of the farmland lost during the period 1990 to 1992. During the period of implementation of the CCRMP, additional farmlands could be lost to erosion. However, implementation of channel improvement projects under the CCRMP would likely minimize the loss of land to erosion. In addition, areas that would be filled to meet the Test 3 channel configuration could also be converted to agricultural use. The expected amount of agricultural land lost under the CCRMP would be a less-than-significant cumulative impact.

Alternative 1a: No Project (Existing Conditions)

Alternatives 1a and 1b would not result in a significant change in the potential loss of agricultural lands to erosion relative to existing conditions. However, no coordinated channel improvements would be made to control erosion along the creek. Active aggregate mining in the creek could lead to continued channel maintenance by the mining operators, including cooperative assistance to other landowners experiencing erosion problems. The unstable condition of the channel could result in continued or increased losses of agricultural land. The expected losses of agricultural land can not be accurately estimated but would likely be similar to existing conditions.

Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Same as alternative 1a.

Alternative 2: No Mining (Alternative Site)

Under alternatives 2 and 3, no mining would occur within the channel. Channel maintenance currently performed by mining operators would not continue. No channel improvements projects would be conducted. The creek instability would not be controlled and erosion of agricultural land would continue. The expected losses of agricultural land can not be accurately estimated but would likely be similar to existing conditions. Lateral

erosion could possibly increase as the result of an increased potential for channel migration related to expected aggradation of the channel.

Alternative 3: Channel Bank Widening (Implement Streamway Influence Boundary)

Loss of agricultural land to erosion would not be prevented and reclamation of lost land would not be permitted. The cumulative loss of agricultural land would be significant and unavoidable.

Mitigation Measure 4.5-4a (CCRMP)

Implementation of Mitigation Measures 4.5-1a and 4.5b would reduce the impact of cumulative loss of agricultural land.

Mitigation Measure 4.5-4b (A-1a, A-1b, A-2)

None required.

Mitigation Measure 4.5-4c (A-3)

None available. The mitigation would preclude any erosion management or agricultural reclamation of lands lost to erosion.

Implementation of Mitigation Measure 4.5-4a would reduce the CCRMP's cumulative effect on agriculture to a less-than-significant level. No mitigation is required for Alternatives 1a, 1b and 2. The impact associated with Alternative 3 would remain significant and unavoidable.