CHAPTER 5.0 CEQA CONSIDERATIONS

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5.1 CUMULATIVE ANALYSIS

Section 15130 of the CEQA Guidelines requires a discussion of potential cumulative impacts that could result from a proposed project in conjunction with other projects in the vicinity. Cumulative impacts occur when two or more individual effects together create a considerable environmental impact or compound or increase other impacts. An EIR must contain a discussion of cumulative impacts, meaning the impacts of the project viewed in the context of environmental impacts expected to be caused by reasonably foreseeable or possible future projects. The possible future projects considered generally consist of a list of specific projects that have either been approved, are under consideration for approval, or are contemplated in adopted general plans. For the purposes of the cumulative impacts analysis for this EIR, cumulative growth includes the following planned developed and land use assumptions:

- Each applicant seeking a long-term permit will operate at maximum production levels under the OCMP. Specific assumptions include:
    - The Cache Creek Aggregates site, located north of SR 16 between Road 85 and Road 87, would increase from a currently permitted total of 748,650 tons per year to 1,075,629 tons per year;
    - The Solano Concrete site, located on SR 16 east of I-505, would increase from a current maximum of 772,417 tons per year to 1,445,783 tons per year;
    - The Syar Industries site, located between Roads 87 and 89 north of SR 16, would increase its maximum production total of 960,871 tons per year to 2,166,667 tons per year;
    - The Teichert - Esparto Properties site, located south of Road 19 between Road 87 and I-505, would increase from the current permitted maximum level of 750,000 tons per year to 1,176,471 tons per year; and
    - The Teichert - Woodland Properties site, located at the western end of Road 20, would increase from the current permitted maximum level of 1,064,224 tons per year to 1,471,765 tons per year.

- Schwarzgruber, an existing mining operation located along Road 96, would operate at a production level of 114,000 tons per year from 1997 through 2001, and at 167,000 tons per year from 2002 to 2032.

- No producer will process raw aggregate materials brought in from another location.

- The volume of recycled materials is assumed to be 4 percent of total production, with 2 percent resulting in new truck trips. Since this does not count against the producer's production totals, it is assumed that this will result in additional truck trips. The assumption of increased recycling under cumulative conditions reflects technological changes and the goal of the OCMP which encourages recycling.

- A "dummy variable" of 200 acres was assumed as a part of the cumulative condition. Of the 200 acres, 150 acres is assumed to be located along Cache Creek west of I-505, while 50 acres is assumed to be located east of I-505.

- Granite Construction, an existing mining operation in the study area, was assumed to have mined all resources by 1997 and therefore to have ceased operations thereafter.

- The Wild Wing (337 single family dwelling units) and Pheasant Glen (18-hole golf course) planned developments are assumed in place by 2027.

- Cumulative background traffic levels were computed by applying growth rates to existing background daily traffic volumes and intersection turning movements. Caltrans' count data revealed that the expected annual growth rate of traffic on SR 16 east and west of Road 89 is 1.5 and 2.0 percent, respectively. A 1.5 percent annual growth rate was conservatively assumed for all County roads, which is consistent with the annual growth rate of 1.6 percent projected by the Yolo County Community Development Agency[1] for the unincorporated area of Yolo County.

- Growth in the Woodland area is assumed to occur consistent with *the City of Woodland General Plan and EIR*, City of Woodland, adopted February 27, 1996. This corresponds to a population growth rate of 2.0 percent per year.

The following is a discussion of cumulative impacts as summarized from Chapter 4.0. Cumulative impacts would occur in the following areas: Agriculture, Biological Resources, Air Quality, Traffic and Circulation, Noise, and Aesthetics.

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[1] Per 2/9/96 telephone conversation with David Morrison, Resource Management Coordinator for the Yolo County Community Development Agency based on data provided by SACOG.

Land Use

While implementation of the CCRMP would result in a reduction in land use intensity within the creek itself, it would also be a contributing factor in the intensification of land use activity in off-channel areas. Assuming that the draft OCMP is adopted and the five mining/reclamation plans are approved, surface mining of as much as 236 million tons of aggregate could occur feasibly be mined on approximately 2,887 acres over the next 50 years in the off-channel areas. The draft OCMP would allow large agricultural areas to be mined for sand and gravel. The increased intensity of land use activity would correspond with the phasing-in of mining. As reclamation activities are phased in, the level of intensity would diminish as land would be returned to agriculture, open water, or open space uses. The primary result of the intensification of land use activity during mining would be a substantial increase in the number of truck trips on local County roads, and the corresponding impacts to roadway levels of service, ambient noise levels, and air quality. The severity of these potential impacts is being addressed in other issue specific sections of this EIR (such as Traffic and Circulation and Air Quality) in the project-level EIRs for the five mining applications, including the necessary mitigations. This would be a significant and unavoidable impact of implementing the CCRMP, if it is accompanied by the OCMP.

Agriculture

Cumulative land development pressures related to expansion of urban and other competing land uses would contribute to the permanent conversion of agricultural land to non-agricultural uses within the County. The Woodland General Plan indicates that over 2,100 of agricultural land could be converted to urban land uses by 2015. The expected growth within the spheres of influence of the towns of Esparto and Madison could also result in the additional loss of approximately 2,200 acres of agricultural land to urban development. The reasonably foreseeable mining projects over the next 30 years could result in the conversion of an additional 1,223 acres of agricultural land to non-agricultural uses. An additional 600± acres may be converted by the Yolo County Flood Control and Water Conservation District for its possible groundwater recharge and recovery program. Finally, implementation of channel improvements under the CCRMP could result in removal of approximately 33 acres of farmland, though in the long term, these projects would likely minimize the loss of land due to erosion.

Biological Resources

Cumulative urban development and off-channel mining would contribute to an incremental reduction in the quality, quantity, and extent of biological resources on a regional level. The overall cumulative effect would depend on the degree to which significant vegetation and wildlife resources are protected at each location where development is proposed, and the effectiveness of major management programs, particularly the County-wide Habitat Conservation Plan (HCP). If approved, the Yolo County Draft HCP should provide a regional approach toward preservation and management of essential habitat for target

species which would be affected by anticipated urban and agricultural development. The CCRMP would provide a balanced approach to management of biological resources and other beneficial uses along the channel. Restoration of the channel and development of habitat would provide for substantial improvement of the resource value of the Cache Creek corridor to native vegetation, fish, and wildlife.

Air Quality

Yolo County is considered nonattainment (standards have not been attained) for PM_{10} (state standard) and ozone (state and federal standard). Cumulative development would add to existing sources of PM_{10} and ozone precursors (ROG and NO_X), which would increase the regional emissions burden within Yolo County and within the Yolo-Solano Air Quality Management District (YSAQMD). Cumulative emissions would be expected to delay by a small amount the eventual attainment of the state PM_{10} and state/federal ozone standards within the YSAQMD. There is, however, no current estimate of when state standards for PM_{10} or ozone will be attained in Yolo County. The CCRMP would, however, reduce in-channel mining and related emissions and, thus, would make a positive contribution to cumulative air quality. It should be noted that changes in production assumed for the CCRMP and alternatives would likely have effects on production at other aggregate processing areas within the larger Sacramento Valley Air Basin. These changes are likely to offset emission changes within the planning area, i.e., increased production of emissions at the planning area could be offset by reduced emissions at other aggregate processing plants within the air basin.

Traffic and Circulation

Cumulative development would contribute to the exacerbation of existing deficiencies, as well as the accelerated deterioration of pavement. Most facilities would continue to operate at acceptable levels of service. All County roads would operate at LOS A or B, while the operations of SR 16 would operate at LOS D in most locations. The intersections of Road 89 and Road 98 with State Route 16 would operate unacceptably and meet warrants for installation of a traffic signal. Increased traffic that would result from cumulative development would not disrupt or interfere with any existing or planned bicycle, pedestrian or transit facilities, or school bus operations. The CCRMP would generate an insignificant amount of traffic when added to the cumulative conditions.

Noise

Cumulative noise would potentially affect proposed recreational uses inside the creek channel limits, as well as existing and future land uses along major roadways outside the planning area. Within the creek, noise from future channel stabilization and erosion control projects could affect existing residences or future recreational uses. For traffic, the major impact would occur at existing residences along the major roadways in the study area. The increase in traffic noise over existing condition would be 5 dB or less along most

roadway segments. Along County Roads 14 and 85, the increase would be 6 to 11 dB. This would generate a significant impact along these segments. It should be noted that there is no change in traffic noise levels between the future condition (cumulative traffic) with and without the CCRMP.

Aesthetics

The Woodland General Plan indicates that between 2,108 acres and 2,296 acres could be developed as urban land uses by 2015. Growth within the spheres of influence of Esparto and Madison could result in up to 2,200 acres of future urban development. In addition, off-channel mining and reclamation under the OCMP would contribute to cumulative visual changes within the planning area. Aggregate mining would disturb roughly 2,932 acres of nondeveloped land over the next 50 years. However, the total amount of actively disturbed land that would exist during mining at any one time would be limited while the acreage of reclaimed lands would increase. Substantially reducing in-channel mining operations, stabilizing the channel, rehabilitating erosion and scour areas, restoring riparian woodland, and establishing a series of wildlife preserves under the CCRMP would have an overall beneficial effect on the visual resources of Cache Creek, relative to existing visual conditions.

5.2 GROWTH INDUCING IMPACTS

In order to comply with CEQA, a Draft EIR must discuss the ways in which the proposed project could foster economic or population growth or the construction of housing, either directly or indirectly, in the surrounding environment [CEQA Guidelines Section 15126(g)]. A given project could induce growth within a community by lowering or removing barriers to growth, such as providing water service to an area where none currently exists, or by creating an amenity that attracts new population or economic activity. The growth-inducing potential of a project would be considered to have a significant impact if the project either induced growth or created the capacity for growth above and beyond the levels permitted by existing public planning policies or recommended by independent projections. A project's growth-inducing potential does not, however, automatically result in growth, whether it be a portion of projected growth, or an actual exceedance of the projected growth levels. Growth at the local level is fundamentally controlled by the land use policies or local municipalities or counties, which are determined by the local policies in each jurisdiction. Growth-inducing potential or pressure, created by economic or social conditions, is transformed into actual growth only by decision makers.

Growth inducement may be considered detrimental, beneficial, or of insignificant consequence under CEQA. Induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services, or if

it can be demonstrated that the potential growth, in some other way, significantly affects the environment.

Impact 5.2-1
Encouragement of Economic or Population Growth or the Construction of Additional Housing

Draft CCRMP / All Alternatives

The draft CCRMP and Alternatives 1a, 1b, 2, 3 and 4 do not include proposals for new housing or commercial or industrial facilities. The project and alternatives would therefore not foster economic or population growth. The draft CCRMP is intended to govern land use activities and environmental restoration within the creek channel, and eliminate commercial mining. Off-channel mining would provide for a continued availability of moderately-priced aggregates in the Sacramento-Fairfield region in the near future, at levels comparable to existing supplies. This, in turn, would allow urban development to continue, as dictated by other economic, environmental and political factors. It should not be inferred that disapproval of the CCRMP, the OCMP, or alternatives to the CCRMP would substantially disrupt urbanization. Rather, disapproval would cause a combination of market adjustments to occur resulting in potentially different production rates, prices, and levels of consumption.

Impact 5.2-2
Remove Obstacles to Population Growth

Draft CCRMP, Alternative 3, and Alternative 4

Population growth, to the extent that it is occurring in the planning area, is located in the City of Woodland, and to a lesser extent, in the towns of Esparto, Madison and Capay. These population centers are outside the CCRMP planning area. Creek management activities associated with conveying flood waters could potentially relieve surrounding land from flooding, and reduce flow volumes in the early stages of a flood. The public benefits provided, however, would not be sufficient to resolve flooding downstream or outside the planning area. If the CCRMP, Alternative 3, or Alternative 4 are amended to accommodate changes necessary to implement regional flooding solutions, the CCRMP and these identified alternatives could be considered moderately growth inducing.

Remaining Alternatives

No significant impacts are expected.

Impact 5.2-3
Tax Existing Community Facilities

Draft CCRMP / All Alternatives

As discussed in Section 4.13 of this EIR, the proposed project and the alternatives would not significantly affect existing public services and utilities. Increased employment under the project is small, and consequently, the demand for existing community service facilities would not be increased.

Impact 5.2-4
Encouragement And Facilitation of Other Activities That Could Significantly Affect the Environment, Either Individually or Cumulatively

Draft CCRMP, Alternative 3, and Alternative 4

The CCRMP, if successfully implemented over its 30-year timeframe, has the potential to encourage and facilitate other activities that could significantly affect the environment, both individually and cumulatively. These potential effects (discussed in Chapter 4 of this EIR) would occur primarily in the areas of biological resources, hydrology and water quality, aesthetics, and open space and recreation, and would be beneficial in nature.

Remaining Alternatives

No CCRMP would be implemented and therefore no significant impacts are expected.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126(f) of the CEQA Guidelines requires the environmental analysis to identify any significant irreversible environmental changes which would be involved in the proposed action should it be implemented. This section indicates that impacts associated with the CCRMP would not be considered significant and irreversible for the following reasons:

The Project Would Not Involve A Large Commitment Of Renewable Resources

Implementation of the proposed project would require the irreversible commitment of natural resources, vis-a-vis the creek improvement program. The CCRMP would also result in the irretrievable commitment of energy resources (primarily in the form of fossil fuels, including fuel oil, natural gas, and gasoline for automobiles, trucks, and construction equipment) to fuel maintenance mining, processing, and subsequent reclamation activities. However, this would be a less-than-significant impact.

The Project Is Such That Removal Or Non-Use Later Could Occur

The proposed project is not a development project in this context. It is largely a river management plan which allows many future options by preserving and restoring a regional resource. Whereas the OCMP largely focuses on off-channel mining and reclamation, the CCRMP concentrates on improving the stability of the channel, minimizing flood damage, and restoring wildlife habitat. While there would be some removal of aggregate materials involved with the CCRMP, this would be incidental to stabilization of the creek channel.

The Project Would Not Generally Commit Future Generations To Similar Uses

The CCRMP includes measures that would be taken to assist Cache Creek in attaining a more stable condition, including significantly reducing the amount of aggregate removal removed from within the creek channel. The floodway would be maintained to allow other beneficial uses of the channel, including groundwater recharge and riparian vegetation. The needs of various uses dependent upon the creek, such as flood protection, wildlife, structural protection, and drainage, would be balanced. In addition, regular opportunities would be provided to allow the County to review the success and/or failure of past efforts and to set new goals that reflect changing environmental conditions and social priorities.

The Project Would Not Involves Uses From Which Irreversible Damage Could Result Due To Potential Environmental Accidents Associated With The Project

The CCRMP would implement stream management to protect permanent in-channel improvements and structures (such as pipelines, bridges, levees, and dams) along Cache Creek. Land uses, activities, and development along the creek and within the floodplain would be coordinated to avoid hazards and minimize the adverse effects of flooding and erosion on surrounding properties.

5.4 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126(d)(4) of the CEQA Guidelines requires that the alternatives analysis identify the environmentally superior alternative. If that alternative is the No Project alternative, then the EIR must also identify an environmentally superior alternative among the other alternatives.

Based on the summary comparison of CEQA alternatives provided in Table 3-1, the alternatives analysis in the individual impact sections in chapter 4.0 Environmental analysis, and the qualitative analysis of the Gus Yates (Floodplain) analysis provided in Section 5.4, the Proposed Project (CCRMP) is the environmentally superior alternative. A discussion of the major impact areas as they relate to the various alternatives is provided below.

Under the No Project (alternative 1a and 1b) and the No Mining/Alternative Site (alternative 2) options, no resources management plan would be adopted to protect and restore the creek, or resolve interrelated resource problems. A plan would be adopted under the Streamway Widening (alternative 3) option, but would not be allowed to erode and vegetate within its historic extent, a process which could take decades to accomplish. Resource management plans would be adopted for both the Proposed Project and Floodplain Alternative 5 option, to encourage the establishment of riparian vegetation and allow for selective in-channel sculpting and shaping.

Flooding problems would continue under the Proposed Project and all of the alternatives. Flood protection against a 100-year event would be maintained under the Proposed Project within the CCRMP area. Downstream flooding of the City of Woodland would not increase over existing levels. The extent of flooding would worsen under Alternative 2, since the elimination of mining and the absence of an in-channel maintenance program would result in the loss of 100-year flood capacity. Alternatives 3 and 5 would likely reduce downstream flooding to the City of Woodland, but would allow the creek to overflow into lands adjoining the creek which would significantly increase the area of inundation, as well as require extensive protection measures to prevent damage to structures, improvements, and agricultural fields.

Alternative 5 would create freshwater marshes by creating shallow excavations below the groundwater table in areas directly adjoining the channel. Surface water from the creek would be allowed to directly flow into the exposed aquifer, without any measures such as protective berms and swales, monitoring, or emergency response plans to address potential contamination. Wet pit excavations would not be allowed within the channel under the Proposed Project and other alternatives.

Agriculture would be least affected under alternatives 1a and 1b. Continued in-stream mining would likely encourage further streambed lowering and minimize bank erosion. The elimination of in-stream mining in Alternative 2 would result in aggradation, which would increase creek meandering and would require additional erosion control measures by property owners along the creek. The Proposed Project provides for the implementation of the Test 3 boundary to widen the channel in selected areas, which would result in the loss of approximately 33 acres. Under alternative 5, the creek would flow onto lowered agricultural fields during floods in exceeds of the 20-year event. The lowered fields would require side slopes and erosion control berms that may remove some 300 acres from agricultural production. Alternative 3 would encourage Cache Creek to erode to reestablish its historical floodplain, resulting in extensive loss of agricultural land.

Riparian habitat would continue to be impacted by in-stream mining under alternatives 1a and lb. Under alternative 2, riparian habitat would be allowed to develop naturally, but would likely be confined to the existing channel. Without encouragement, revegetation would be a slow process. Alternative 3 would result in a signification increase in reparian vegetation, but unrestricted erosion would eliminate existing habitat on the upper banks

of Cache Creek. Similarly, 1,350 acres of riparian vegetation would be planted along the banks of the channel in alternative 5, but the excavation of adjoining lowered fields would eliminate nearby oak woodlands and habitat for various sensitive species, including the valley elderberry longhorn beetles and bank swallow. The Proposed Project would retain existing habitat, while encouraging the creation of in-stream vegetation, as long as flood capacity of erosion control are not adversely affected.

5.5 COMPARATIVE ANALYSIS OF THE FLOODPLAIN ALTERNATIVE

The CCRMP and the OCMP are intended to serve as individual stand-alone plans, one governing the operations and reclamation of mining activities located outside of the channel, the other providing a framework for managing the resources of the creek itself. These two plans recognize that the in-channel and off-channel environments are different and require unique approaches that address their varying needs. At the same time, the County also has determined that Cache Creek and its surrounding areas form an integrated system, and that activities which occur in one area affect the other. Thus, though they will be stand-alone plans, the two will be joined together after adoption, as one printed document entitled the Cache Creek Area Plan.

The alternatives that have been provided for both the OCMP and the CCRMP are also geographically distinct. However, a proposal was submitted as a part of the comments on the Notice of Preparation that combines the off-channel shallow mining evaluated in Alternative 4 of the OCMP DEIR, with the channel bank widening analyzed in Alternative 3 of the CCRMP DEIR. This section provides a qualitative analysis of the likely environmental impacts associated with implementation of this alternative.

Description of the Alternative

This alternative (the "Floodplain Alternative") was outlined by Gus Yates in a memo dated October 5, 1989. This proposal would allow gravel mining within an area roughly extending one-half mile on either side of Cache Creek. Approximately 3,600 acres would be lowered fifteen feet during mining, with the subsequent replacement of four feet of soil to reestablish agricultural production. Excavation would remain above the seasonal high water table, and the mined lands would be reclaimed to an elevation equal to the 20-year flood stage (at least six feet above the seasonal high water table). Mining would occur behind temporary levees, which would be removed following reclamation so that off-channel pits would be connected to the creek floodplain. Berms varying in height from three to four feet would be constructed across the reclaimed agricultural fields at 500 foot intervals, perpendicular to the creek, in order to prevent erosive sheet flow. Existing structures within the newly constructed floodplain would have to be relocated or protected against erosion and inundation.

The active channel of Cache Creek would be reshaped for channel stability. The central portion of the channel (minimum 300 feet wide) would be an open floodway, where the mining of gravel deposited during the previous year would be permitted. The open floodway would be designed to maintain uniform flow velocity and prevent local areas of scour or aggradation, within an area of about 1,350 acres. The outer banks of the channel (minimum 200 feet wide) would be revegetated with native species. Non-native plants, such as tamarisk, would be actively suppressed. The resulting band of riparian vegetation would encompass approximately 1,350 acres.

Mining within the groundwater table would be allowed at two sites along the gaining reach of Cache Creek, between County Roads 89 and 94B, in order to monitor the effects of mining and reclamation on the aquifer. One site would use the existing Solano Concrete wet pit as one test case, with a second future site to be determined. Groundwater levels would be monitored in deep and shallow piezometers installed around the perimeter of the wet pit, while nearby water supply wells would be tested for transmissivity and yield. Upon reclamation, the agricultural productivity of reclaimed fields would be compared to the productivity of nearby unmined areas.

Section 15126.(d) of CEQA requires that the EIR describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen the significant effects of the project, and evaluate the comparative merits of the alternatives. Four specific alternatives to the CCRMP are defined in Section 3.5 of the EIR, and are evaluated throughout Chapter 4 of this document. Because this alternative incorporates portions of both the OCMP and the CCRMP, however, it is being evaluated in a separate section of the EIR. A discussion of the potential environmental impacts of this proposal is provided below.

Environmental Impacts

Land Use and Planning

Currently, excavation within the A-P (Agricultural Preserve) Zone is only permitted when mining is associated with bank protection and/or erosion control measures. Under the floodplain alternative, revegetation efforts along the outer banks of the open floodway would be the primary means for preventing erosion. A majority of the area considered by this alternative is zoned A-P. As a result, the mining of adjacent terraces to widen the channel and accommodate increased flood flows would be inconsistent with the existing requirements of the A-P Zone. Mitigation Measure 4.2-2a of the OCMP would amend the A-P Zone to allow commercial mining on contracted land and would reduce this impact to a less-than-significant level.

Implementation of the floodplain alternative is assumed to be accomplished under the OCMP, CCRMP, and draft ordinances presently under consideration, modified to address

the project description specific to this proposal. In general, this alternative would be consistent with the Yolo County General Plan, the Surface Mining and Reclamation Act, the Regional Water Quality Control Basin Plan, and the Resource Conservation District agriculture policies. No significant impact due to inconsistency between the alternative and general plans is anticipated.

Shallow mining and reclamation to lowered agricultural fields, and the continued in-stream mining and riparian restoration proposed under this alternative would generally be compatible with existing and planned land uses, and would not result in extensive changes in land use intensity. These would also be less-than-significant impacts.

Geology and Soils

Since this alternative proposes to connect mined areas located outside of the active channel to the creek floodplain, pit capture would be encouraged. As a result, side slopes and berms would have to be designed to withstand both on-site runoff and flood flows coming from the creek. This would be a significant impact of the proposed alternative. The requirements for slope stability analysis described in Performance Standard 2.5-18 and the erosion control practices referred to in Performance Standard 2.5-21 of Mitigation Measure 4.3-2a of the OCMP would likely reduce this impact to a less than significant level.

The proposed lowered floodplain would abut the West Adams Canal along most of its length between County Road 85 and Moore's Crossing, and would immediately adjoin the East Adams Canal from Moore's Crossing to Monument Hill. The Alder Canal would be completely surrounded by lowered fields. Erosion control measures would be required for each of these features in order to ensure their structural integrity. The majority of the canals are unlined and a breach could cause extensive erosion of the canal banks and floor. Reinforced slopes would also have to protect those portions of County Roads 19A, 20, 85, 87, 89, and 94B that would be exposed to the floodplain, to prevent erosion from undercutting the roads and resulting in pavement failure. The bridges at County Roads 85, 87, and 94B, as well as the Interstate 505 bridge would not be extended and would continue to serve as bottlenecks for the hydraulic flow of Cache Creek. Additional erosion control measures could also be needed to prevent the stream from flanking the bridge abutments. Although bridge protection measures are discussed in this alternative, no programs are suggested to ensure that these measures are constructed. The implementation of Mitigation Measures 4.3-1b and 4.3-1c in the CCRMP, requiring the development of a Cache Creek Improvements Program (CCIP) and the approval of development permits for new construction within the floodplain, would likely reduce this impact to a less-than-significant level.

Although mining would be permitted within the open floodway, no program is offered to monitor the annual deposits of aggregate, nor are standards provided to ensure that the gravel removed would not adversely affect the erosion potential for properties upstream and downstream of the mining. The potential for channel instability created through

inadequately managed in-stream mining would be a significant impact under this alternative. The implementation of Mitigation Measure 4.2-1b of the CCRMP, requiring the development of a Cache Creek Improvements Program, would likely reduce this impact to a less-than-significant level.

Channel instability could result from changes to Cache Creek located upstream or downstream, outside of the area under consideration in this alternative. Development in the upper watershed, the construction of new water impoundment facilities, and/or proposed plans to protect the City of Woodland from flooding may alter hydraulic conditions that would adversely affect channel geometry. Implementation of Mitigation Measure 4.3-3b in the CCRMP would require the County to review proposed projects within the Cache Creek watershed to ensure that they would not have an adverse impact on the CCRMP area, and would reduce this impact to a less-than-significant level.

The overburden and soils replaced as a result of agricultural reclamation could settle during seismic events. Backfilled material could also be subject to settlement or consolidation under non-seismic conditions if buildings or other structures are placed on these fills. Implementation of Mitigation Measure 4.3-1a in the OCMP, requiring engineered study of improvements on backfilled areas, would reduce this impact to a less-than-significant level.

It is projected that approximately 81 million tons of aggregate would be mined under this alternative over a twenty year period, at an average rate of four million tons per year. This represents less than ten percent of the estimated aggregate available in the study area. Sand and gravel located below the seasonal high water table would be preserved for future use. The removal of these resources would be a less-than-significant impact of the proposed alternative.

Hydrology and Water Quality

By allowing the creek to overflow onto lowered agricultural fields, this alternative would result in the flooding of substantial areas that are presently located outside of the 100-year floodplain. The resulting increase in the amount of area flooded would be a significant and unavoidable impact of the proposed alternative.

In addition to the roads, bridges, and canals mentioned previously, approximately ten to fifteen residences would be located within the expanded floodplain, and would have to remain elevated or moved to new locations. Furthermore, the floodplain would also encompass the Cache Creek Aggregates, Syar Industries, Solano Concrete, Teichert Aggregates - Esparto, Teichert-Woodland, Schwarzgruber, and Granite processing plant sites. The plants would similarly have to remain elevated above the 100-year flood stage or would be relocated outside of the floodplain. The increased threat of erosion to public and private structures would be a significant impact under this alternative. Mitigation measure 4.4-6a in the OCMP requires that flood protection improvements be made in

mining and processing areas to ensure protection from the 100-year flood event. This measure would have to be modified to include both public and private structures located within the expanded floodplain, since mining would occur around and/or adjoining to roads, residences, canals, and processing plants. However, long-term maintenance of flood protection measures for structures would have to be assured once mining was completed. Although individual property owners would assume protection of private

structures, without provision for the continued protection of state and local infrastructure, this would remain a significant and unavoidable impact.

Currently, the seasonal high groundwater level is approximately 15 to 25 feet below the ground surface. Under this alternative, shallow mining would lower existing agricultural fields about 10-20 feet. Lowering of the ground surface would reduce the thickness of the unsaturated zone to a minimum of six feet in depth. Water percolating through soils and sediment is generally improved as organic chemicals are adsorbed to soil particles. Reducing the thickness of this "filter" may reduce its capacity to remove contaminants such as herbicide and pesticide residue from the infiltrating water, reducing groundwater quality. However, mathematical modeling described in Appendix 7.4 of the OCMP indicates that the reduced overburden and topsoil thickness is offset by the reduction in grain size associated with the processing fines included in replacement materials. Therefore, no significant impacts to groundwater quality are anticipated as a result of reducing the thickness of the unsaturated zone in agricultural reclamation.

The lowered agricultural fields under this alternative would be hydrologically connected to the channel, so that flooding in excess of the 20-year event would flow onto lands adjoining the creek. The widening of the floodplain would not extend to Interstate 505, typically the reach where flooding of the town of Yolo and the City of Woodland have been most problematic. The Technical Studies identified the series of bridge structures near the I-505 crossing as narrow channel areas which are unable to accommodate peak flood flows. As a result, floodwaters back up as far as County Road 94B, overtopping banks and flooding nearby communities. Increasing the storage ability of the creek in the upstream reaches would likely delay the peak of the flood event, and may reduce the amount of floodwater accompanying the peak. Floodwaters flowing across the reclaimed lands would be moving at slower velocities than those in the channel and may provide additional recharge opportunities when groundwater levels are low. During periods of extensive rain, however, the level of the aquifer would likely be high and recharge opportunities would be limited. Given the complexities of hydraulic processes, the consequences of this alternative and its effects on flooding in Yolo and Woodland would be speculative without further study. Based on existing information, however, it appears that the proposed alternative would have a less-than-significant and possibly beneficial impact.

The widening of the floodplain would result in extensive changes to the areas subject to inundation. The current FEMA FIRM flood maps would not accurately represent the new conditions and flood insurance may be inappropriately required for some or unavailable for

others. Implementation of Mitigation Measure 4.4-6a in the OCMP would require the County Floodplain Administrator to notify FEMA of any revisions every ten years, and would reduce this impact to a less-than-significant level.

The dominant land use in the area under consideration by this alternative is agriculture. It is common practice in the vicinity to discharge runoff from agricultural fields into Cache Creek. Runoff and tailwater from agricultural fields may contain residual pesticides, organic material, and sediment. If allowed to drain into the channel, the tailwater could adversely affect surface water and groundwater quality. Mitigation Measure 4.4-2a of the OCMP would require that drainage facilities within mined areas be designed to contain a 20-year/1-hour storm event, before discharge to the creek. Implementation of this measure would reduce potential surface water contamination associated with agricultural runoff to a less-than-significant level.

The area proposed for mining under this alternative could be flooded if the Indian Valley Dam were to fail catastrophically. Calculations indicate that the wavefront would reach the western edge of the mining reach in approximately four hours. This would be sufficient time to evacuate the affected area. Although the area of inundation would be increased by the proposed alternative, the resulting flood would not substantially exacerbate existing conditions. This is a less-than-significant impact.

Under this alternative, two off-channel excavations would be permitted to extend into the groundwater table, one of them being the existing mine site at Solano Concrete. These wet pits would be backfilled with fine materials and reclaimed to agriculture upon completion. Wet pits create a direct exposure of groundwater to the potential for water quality degradation. Potential sources of water contamination for wet pits include: chemical releases from nearby equipment, agricultural tailwater and runoff, eutrophication, sabotage, and floodwaters from the creek. Implementation of Mitigation Measures 4.4-2a and 4.4-3a in the OCMP would require pollution prevention measures and groundwater monitoring programs for wet-pit mines, and would reduce these impacts to a less-than-significant level. It should be noted, however, that the existing Solano Concrete site is located within the proposed widened floodplain and would have to be sufficiently protected from both pit capture and the introduction of flood waters into the exposed groundwater.

The floodplain alternative also proposes to create several freshwater marshlands along Cache Creek, between the County Roads 87 and 94B, by creating shallow in-channel excavations several feet below the water table. Similar concerns as those discussed for the wet pits above would also apply here. The marshlands would be subject to sabotage, agricultural tailwater, the introduction of floodwaters, and chemical releases from equipment. Unlike the wet pits, however, where runoff and floodwaters would be prevented from entering the groundwater, the marshlands would be hydrologically connected to the creek, within the 20-year floodplain. The resulting potential for groundwater contamination would be a significant and unavoidable impact.

The planting of riparian vegetation along the outer banks of the Cache Creek channel would result in the use of additional water through evaporation. Similar losses would occur through the permitting of two wet pit mines under this alternative. Evaporation associated with wet pit mining would be of a limited duration. The use of surface water and groundwater for habitat purposes is consistent with both the County General Plan and the Sacramento River Basin Plan maintained by the Regional Water Quality Control Board. This loss of water through evaporation would be considered a less-than-significant impact.

Agriculture

Off-channel mined areas would be reclaimed to agriculture under this alternative. Topsoil would be removed and stockpiled prior to mining, and replaced in an even four foot layer after aggregate extraction has been completed. Consequently, the fields would be lower than surrounding elevations by about ten feet. The slopes adjoining the lowered fields would be steep and limited, generally inhibiting agricultural use. In addition, three to four foot berms would be constructed perpendicular to the creek every 500 feet, in order to minimize sheet flooding and erosion in flood events exceeding the 20-year average storm. Assuming that slopes, roads, and berms account for 10 percent of the total disturbed area, a total of 364 acres would be unavailable for future agriculture. Since they would not be suitable for farming, the permanent loss of agricultural land to slopes and berms would be a significant and unavoidable impact of this alternative.

During the course of mining, farmland will be disturbed and out of production. In order to encourage the rapid return of agricultural production, mining under this alternative would not occur at any one site for more than five years. Although this phasing would reduce the length of time during which farmland productivity would be interrupted, this would remain a significant and unavoidable impact.

The majority of the land under consideration in this alternative is under Williamson Act contract. Mining is not currently an allowed use on lands within agricultural preserves in Yolo County, unless the excavation is related to bank protection and channel erosion control. The implementation of Mitigation Measure 4.2-2a in the OCMP would amend the County Zoning Code to allow commercial mining on contracted land, and would reduce this impact to a less-than-significant level.

None of the crops grown in the Cache Creek area are resistant to damage from prolonged exposure to shallow flooding. Lowering the farm fields may expose crops to occasionally high groundwater levels that would damage plants and reduce agricultural productivity. Similarly, inadequate drainage of farmland may result in long-term standing water that could damage crops. Most crops grown within the area do not have rooting depths that exceed five feet below the ground surface. Under this alternative, agricultural land would be reclaimed to an elevation at least six feet above the seasonal high water table, however, no provisions are made for ensuring that proper drainage is established.

Implementation of Mitigation Measure 4.5-6a in the OCMP would reduce this to a less than significant level.

The higher density of cold air will cause it to flow into the lower reclaimed fields, thereby increasing the risk of exposing sensitive crops to cooler temperatures and limiting agricultural productivity. Existing conditions at the Solano Concrete site include reclaimed agricultural fields lower than the surrounding ground surface by a depth of 8-14 feet. Cropping data from this operation have not indicated any adverse impacts to agricultural productivity as a result of the lowered elevations. This is a less-than-significant impact.

The proximity of a broad riparian corridor along Cache Creek to adjoining agricultural land may result in land use conflicts. Expanded habitat could provide additional opportunities for species of concern, thereby resulting in restrictions on agricultural practices imposed by regulatory agencies. New riparian areas may also attract pests which could affect farmland production. At the same time, however, the application of pesticides and other agricultural practices may reduce the potential survival for reestablished vegetation. The implementation of Mitigation Measures 4.5-2a and 2b in the CCRMP would reduce these impacts to a less than significant level.

The open floodway and adjoining native vegetation located immediately along Cache Creek would be designed to hold a 20-year flood event. Floods exceeding the 20-year event would be allowed to flow onto the adjoining lowered terraces, which would be reclaimed to agricultural uses. Inundation of the lowered fields may cause damage to winter crops and delay access to allow for the planting of high-value summer crops. Under this alternative, flood easements would be purchased to compensate property owners for the occasional loss of crops due to flooding, but the potential flood damage to agricultural production would remain a significant and unavoidable impact.

Biological Resources

Shallow mining of the terraces adjoining the creek would require removal of the existing vegetative cover, which largely consists of agricultural crops. Provisions in SMARA specify performance standards for revegetation, where suitable for the end use, including the management of noxious weeds. This is a less-than-significant impact.

There are still several remnant segments of oak woodland vegetation and mature oaks on the upper banks of Cache Creek. Shallow mining would eliminate the majority of these areas, so that lowered agricultural fields would be hydrologically connected to the creek. Similarly, bar skimming and gravel removal is proposed under this alternative for the central open floodway within the Cache Creek channel. Continued in-stream mining would result in the occasional loss of emergent riparian vegetation. Valley oak woodland, riparian forest, and riparian scrub are designated by the California Natural Diversity Data Base as sensitive natural communities with high inventory priorities, the loss of which would have a significant disturbance to local wildlife. Mitigation Measure 4.6-2a in the OCMP requires

that riparian and oak woodland vegetation disturbed by the project would be replaced according to an approved habitat restoration plan. Although implementation of this measure would reduce the severity of this impact, nearly all of the valley oak woodland along Cache Creek would be lost until replacement plantings matured. The extensive disturbance to this existing habitat feature is a significant and unavoidable impact.

The shallow mining of lands along Cache Creek would also eliminate limited habitat cover located along the fencerows and roads adjoining agricultural fields. Wildlife living in cultivated farmland typically use these areas for retreat during intensive agricultural practices. Elimination of these areas would represent a significant impact to wildlife resources. Since mining would be phased and would not take place for longer than five years in any one location, local wildlife would be able to migrate to nearby undisturbed or reclaimed areas. In addition, Mitigation Measure 4.6-3a in the OCMP requires that fencerow habitat lost to mining would have to be replaced in accordance with a restoration plan. These measure would reduce the temporary loss of fencerow habitat to a less-than-significant impact.

Mining in the area considered under this alternative would affect habitats for a number of special-status species, including Swainson's hawk, bank swallow, valley elderberry longhorn beetle (VELB), and numerous other species of birds. The removal of existing agricultural fields during mining would temporarily disturb foraging habitat for the Swainson's hawk. In addition, the loss of oak woodland areas would result in the elimination of trees where Swainson's hawks and other raptors may nest. Shallow mining would also result in the elimination of elderberry shrubs in the area, which are known to be found on the upper banks of Cache Creek. These shrubs are essential to the survival of the VELB. Steep sandy slopes along Cache Creek are occasional homes to bank swallows. These banks would also be lost to shallow mining excavation. Soil and overburden stockpiles provide similar conditions to steep sandy banks and may attract bank swallows, exposing them to possible harm from heavy equipment. A 2081 permit would be required from the California Department of Fish and Game for impacts to the Swainson's hawk and bank swallows, while a 10A permit would be necessary for any taking of VELB or VELB habitat. In addition, Mitigation Measure 4.6-4a of the OCMP would further protect the protection of special-status species. These efforts would reduce this impact to a less-than-significant level.

While the potential for sensitive wetland resources within the area considered under this alternative is low, the possibility remains that shallow mining of the upland terraces adjoining Cache Creek may eliminate jurisdictional wetlands. The responsibility for protecting jurisdictional wetlands rests with the U.S. Army Corps of Engineers, which may require a 404 or Nationwide permit, depending upon the size and nature of the disturbance. This impact would be reduced to a less-than-significant level through the implementation of Mitigation Measure 4.6-5a in the OCMP, which requires the creation of replacement wetlands according to an approved restoration plan. Under this alternative, new freshwater marshes would be created along the edges of the Cache Creek channel,

which could serve as potential replacement wetlands if designed and constructed properly.

Wildlife habitat affected by shallow mining under this alternative would be largely limited to agricultural fields and no essential movement corridors would be obstructed. However, continued mining of the open floodway in the central portion of the channel would have the potential to disrupt the wildlife movement corridor associated with Cache Creek. Such activities would be subject to both a U.S. Army Corps 404 permit and a 1603 permit from the California Department of Fish and Game. A Flood Development Permit from the Yolo County Floodplain Administrator would also be required. Mitigation Measures 4.6-4a and 4.6-6a requires that a biological survey be made of Cache Creek and that modifications to the in-channel area be reviewed by the TAC to ensure that sensitive biological resources are protected. These efforts would reduce this impact to a less-than-significant level.

As discussed earlier, this alternative states that recreational opportunities would be increased, although no specifics are given as to how an open space program would be implemented. Hiking, birdwatching, and other forms of outdoor recreation increases opportunities for disturbance to sensitive wildlife habitat. Implementation of Mitigation Measure 4.6-3a in the CCRMP, which requires that recreational facilities be located away from important wildlife habitat features, would reduce this impact to a less-than-significant level.

Air Quality

This alternative would result in the excavation of some 3,600 acres, with topsoil and overburden removed and stockpiled for reapplication as sideslopes, berms, and reclaimed agricultural fields. In-channel mining would also continue in order to maintain the open floodway. The mining and reclamation proposed involve activities that would result in the generation of dust or PM-10 (particulate matter less than 10 microns in diameter). According to the California Air Resources Board (CARB), the county is in a nonattainment area for PM-10. The area of disturbance, along with the doubling handling (removal and redistribution) of overburden would exceed the Yolo-Solano Air Quality Management District threshold of 15 tons of PM-10 emissions per year.

Similarly, the transport of overburden material to stockpiles and raw aggregate to the processing plant, as well as the hauling of finished sand and gravel to its destination would require the use of heavy equipment. The exhaust from this equipment contains a number of by-products including reactive organic gasses (ROG) and nitrogen dioxide (NOx). These precursors lead to the formation of ozone. The Yolo-Solano area has been designated as nonattainment for ozone by both local and federal agencies. The annual production rates projected under this alternative (4.0 million tons per year) are lower than existing permitted levels (4.8 million tons per year), but they would still be greater than current average production (2.5 million tons). As a result, it is likely that this alternative would exceed the YSAQMD's threshold of 15 tons per year for ROG and NOx.

Since it would result in exceeding air quality standards for PM-10, ROG, and NOx, this alternative would likely delay by a small amount the eventual attainment of state and federal standards within the county. These emissions could be reduced through the implementation of Mitigation Measures 4.7-1a and 4.7-2b in the OCMP, encouraging the use of conveyor systems and minimization of engine idling, the impacts would remain significant and unavoidable.

Although the increased levels of truck traffic resulting from this alternative would increase the amount of carbon monoxide to residences and other sensitive receptors along the route, there does not appear to be a potential for carbon monoxide concentrations exceeding any state or federal standards. Traffic volumes remain relatively light in the area under consideration by this alternative, with few delays. In addition, individual vehicular emission rates are expected to decrease in the future. As a result, this impact is considered to be less-than-significant.

Traffic and Circulation

Since the alternative, as described, did not state whether existing aggregate processing facilities would be moved from the widened floodway, it was assumed that they would remain in place and be protected from inundation. Thus, similar haul routes would be used as those evaluated in the OCMP. The proposed alternative estimates that annual production would occur at approximately 4.0 million tons. In terms of traffic impacts, this alternative is most similar to Alternative 1B in the OCMP, which assumes that annual aggregate production will equal maximum permitted levels of 4.8 million tons.

The number of truck trips generated under this alternative would be less than currently permitted and would have a less-than-significant impact on traffic and circulation. Nevertheless, cumulative traffic conditions will worsen in certain areas, leading to unacceptable conditions at: the intersection of State Route 16 and County Road 98; the intersection of State Route 16 and County Road 89; the intersection of County Roads 20 and 96; the intersection of County Roads 14 and 85; substandard portions of County Road 14 and 19, and State Route 16; and substandard bridges on County Road 14, 18, 85, and 89.

Noise

As mentioned previously, ten to fifteen residences are located within the area under consideration by this alternative. If these houses are not relocated, but are provided with adequate flood protection against the 100-year event, then noise-related impacts may occur. The heavy equipment used in mining and reclamation of the off-channel shallow mining areas would include scrapers, haul trucks, and tractors. These vehicles generate noise levels of between 60 and 70 dB L_{eq} at a distance of 50 feet. The state standards for noise-sensitive land uses such as private residences is 60 dB L_{eq}. This impact would be reduced to a less-than-significant level by the implementation of Mitigation Measure 4.9-1b,

which requires that noise levels not exceed a community noise equivalent level (CNEL) of 60 decibels. The distance required to achieve acceptable noise levels for sensitive land uses is generally adequate to provide acceptable relief from ground vibration levels as well.

The transport of aggregate to and from processing facilities may increase the noise levels along future haul routes. Regardless of whether the aggregate processing plants remain within the expanded floodplain or are relocated, regular haul routes will be necessary to move raw sand and gravel from the excavation to the plant for sorting and washing. Although the estimated average annual production rate of 4.0 million tons projected under this alternative is less than existing permitted levels (approximately 4.8 million tons), it is well above recent annual production averages (approximately 2.5 million tons). This increase would likely result in an increase in traffic noise of more than 5 decibels, which would have a significant effect on residents who live along the future haul routes. Implementation of Mitigation Measure 4.9-3a in the OCMP, which requires acoustical analysis and recommendations for reducing noise to acceptable levels, would reduce this impact to a less-than-significant level.

The floodplain alternative does not specify whether mining and/or processing activities would be allowed to operate at night. If so, back-up beepers on trucks and other earth-moving equipment may constitute nuisance noise for local residents. This impact would be reduced to a less-than-significant level by the implementation of Mitigation Measure 4.9-4a in the OCMP, which requires that equipment used at night within 1,500 feet of residences be equipped with non-sonic warning devices consistent with OSHA regulations.

Opportunities for hiking, birdwatching, and other forms of outdoor recreation would be increased according to the discussion outlining this alternative, but no specifics are provided as to how this would be accomplished. Without a more specific program, it is difficult to determine how surrounding noise-sensitive receptors would be affected by the increased noise levels associated with such intensive uses. The implementation of Mitigation Measure 4.9-3a in the CCRMP, which requires that acoustical studies be performed for any recreational area where intensive uses are proposed, would reduce this impact to a less-than-significant level.

Aesthetics

This alternative would result in the disturbance of approximately 3,600 acres, which would be visible from numerous public rights-of-way, including County Roads 19A, 20, 85, 87, 89, 94B, 96, and 97A; State Highway 16; and Interstate 505. Although none of these thoroughfares are designated as scenic roads and/or highways within the area under consideration by this alternative, the landscape changes would remain evident for local residents and visitors. No berms or vegetative screens are proposed to screen mining activities from public rights-of-way. This alternative does, however, state that mining should be restricted to five years at any one site, in order to encourage the rapid return of land to agricultural production. Although limiting the length of time would partially mitigate

this impact, the temporary disturbance of public vantages during the five year mining period would remain a significant and unavoidable impact.

Agricultural fields will be uniformly lowered approximately ten feet over an area of 3,600 acres. While the lowered farmland will be noticeable, it will retain existing open vistas and would not create a significant visual intrusion. As a result, no significant impact associated with the aesthetic impact of reclaimed lands is anticipated.

This alternative would allow for continued mining within the central floodway channel of Cache Creek. Excavation would be used to maintain uniform flow velocity and prevent excessive scour or aggradation, and would largely consist of bar skimming and the removal of newly deposited gravel. However, the minimization of erosion and increased riparian vegetation along the creek would have beneficial visual effects that would offset the short-term adverse conditions during active modification of the channel. Thus, the overall impact would be less-than-significant.

The floodplain alternative does not provide any details regarding whether mining and/or processing activities would be allowed to operate at night. Possible mitigation might include either a prohibition on night work or provisions to direct lighting away from public rights-of-way and adjacent properties. Enactment of either of these measures would reduce this impact to a less-than-significant level.

Cultural Resources

Paleontological, archaeological, and historic resources may occur in the gravel deposits throughout the Cache Creek area. Shallow mining of the terraces to create lowered agricultural fields may disrupt historic and prehistoric remains. The uncovering of cultural resources may also make them more available for unauthorized removal. In addition, several structures and features along Cache Creek, including local residences and canals, have been identified as historic resources. These resources would be located within or immediately adjoining to the expanded floodplain. Flows could undermine the foundations of these structures and features, or could damage the resources themselves. The implementation of Mitigation Measure 4.11-1a in both the OCMP and the CCRMP, which requires that cultural resources be evaluated by a qualified professional prior to disturbance and damage mitigated if appropriate, would reduce these impacts to a less-than-significant level.

Hazards

The accidental release of petroleum products and other chemicals used during mining and reclamation and/or at processing plants may affect soil and water quality, as well as worker safety. Implementation of Mitigation Measures 4.12-1a in the OCMP and Mitigation Measure 4.12-1c in the CCRMP, which require specific pollution prevention measures as

well as increased reporting of spills and accidents, would reduce this impact to a less-than-significant level.

The historic use of pesticides, herbicides, fungicides, and fertilizer may have resulted in the accumulation of hazardous materials in the topsoil in existing agricultural areas. Removal, storage, and replacement of contaminated topsoil may expose workers to hazardous chemicals during mining and reclamation activities. Tests conducted at the existing Solano Concrete site indicated that while such chemicals were present in the topsoil, they existed at concentrations well below the regulatory maximum thresholds. The crop rotation at Solano Concrete consists of grains, corn, and tomatoes and is similar to crops grown within the area under consideration in this alternative. Therefore, this impact is considered to be less-than-significant.

Under this alternative, freshwater marshes would be created in several areas along Cache Creek. The development of shallow wetlands may result in the possibility of providing additional breeding ground for mosquitoes. Implementation of Mitigation Measure 4.12-3a in the CCRMP, which recommends that habitat restoration efforts be coordinated with the local Mosquito and Vector Control District, would reduce this impact to a less-than-significant level.

Public Services

Opportunities for hiking, birdwatching, and other forms of outdoor recreation would be increased according to the discussion outlining this alternative, but no specifics are provided as to how this would be accomplished. An increase in the number of people along the creek could also result in greater opportunities for trespassing, vandalism, and other unlawful conduct. While this may create an increased demand for Sheriff's Department responses, neither additional staff or equipment would likely be necessary to maintain an acceptable level of service. Based on the rates of emergency responses to current gravel operations, the extent of mining and reclamation under this alternative would have a less-than-significant impact on the provision of law enforcement.

The proposed alternative is not expected to generate a substantial increase in demand for fire protection services. This would be a less than significant impact.

Such activities as monitoring, land use regulation, mitigation programs, and new operational requirements related to mining and reclamation would likely require increased levels of effort by the Community Development Agency, but additional staff or equipment would not likely be needed. This would be a less-than-significant impact.

As discussed previously, although this alternative proposes to increase recreational opportunities, a specific implementation program for increasing open space and recreation along Cache Creek is not provided. In fact, whereas many areas within the mining reach currently provide 100-year flood protection, the floodplain alternative would expose land

adjoining the creek to 20-year flood events, thereby decreasing access during periods of high flows. In addition, the channel of Cache Creek is designated as either open floodway or riparian vegetation, while all reclaimed land adjoining the creek is required to return to agriculture. No provisions are made to allow reclamation to public open spaces. Since this alternative does not include a plan for the development of recreation and appears to inhibit future access to the creek, this would remain a significant and unavoidable impact.

Summary

Environmental Impacts

The qualitative analysis outlined above identifies significant effects anticipated as a result of the floodplain alternative in the areas of land use and planning, geology and soils, hydrology and water quality, agriculture, biological resources, air quality, traffic and circulation, noise, aesthetics, cultural resources, hazards, and public services. All identified significant impacts would be eliminated or reduced to a less than significant level through the implementation of mitigation measures recommended in the OCMP and CCRMP except hydrology and water quality, agriculture, biological resources, air quality, aesthetics, and public services. These six impact areas would remain significant and unavoidable.

In addition, there are several policy issues that are not addressed in the environmental analysis that deserve attention.

Aggregate Production

Under the floodplain alternative, approximately 73.4 million tons of aggregate would be obtained through the excavation of 3,640 acres of agricultural fields adjoining Cache Creek. These fields would be lowered 10 feet on average, upon the completion of reclamation. An additional 1.8 million tons would be removed from the creek channel, as a part of ongoing maintenance activities. The remaining 6.1 million tons was to come from the completion of the Solano Concrete wet pit mining of the Hutson parcel. Thus, a total of 81.3 million tons would be produced over the 20 year period. Wet pit mining would be allowed on a limited basis for study and monitoring, so that appropriate regulations could be developed if wet pit mining were allowed after the end of the 20 year project term.

Since this proposal was made in 1989, additional data has come to light. Average sand and gravel replenishment within Cache Creek has been estimated by the Technical Studies at 200,000 tons per year, nearly twice the 92,000 tons estimated above. Also, projections based on site-specific soil studies provided by the aggregate companies for the shallow mining alternative (OCMP Alternative 4) indicate that only 33.5 million tons would be produced on 2,211 acres. The floodplain alternative assumed a uniform geologic and hydrologic characteristics throughout the project area, while the depth of overburden and groundwater elevation varies substantially. In addition, this alternative assumed a density of 1.25 tons of aggregate per square yard, when 1.5 tons is a more reasonable

expectation. Finally, wet pit mining of the Hutson parcel has been completed and final reclamation of the site has commenced. Thus, the aggregate yield projected under the floodplain alternative is likely less than the 81.3 million ton figure cited above.
Demand for aggregate within Yolo County has been calculated at approximately 2.2 million tons sold per year over the next 30 years. Based on population figures and data from the 1984 Department of Conservation Mineral Classification Study, it was estimated that Cache Creek supplies approximately 26 percent of regional aggregate demand. In order to continue this market share, 5.8 million tons of aggregate sold would have to be produced over the next 30 years. The floodplain alternative would likely be able to meet the local need for aggregate within Yolo County, assuming the per capita demand for aggregate remains constant, but would not be able to meet regional needs.

Implementation

The area under consideration in this alternative is entirely under private ownership. As a result, implementation of this alternative could be problematic. The floodplain alternative assumes that the 3,640 acres needed to provide additional flood protection would be available. However, not all property owners within the affected area may be willing to have their homes relocated or reinforced against floods, nor would they all necessarily be amenable to having their agricultural lands lowered and turned into a floodplain. In order to implement this alternative, it may be necessary to exercise eminent domain and condemn properties for purchase, or to acquire flood easement rights across the proposed floodplain. In addition, another 1,350 acres would be planted to riparian vegetation, on either side of the open floodway within the channel. Not all land owners may be willing to allow habitat development. Finally, easement rights may be necessary within the open floodway (1,350 acres) in order to ensure that 20-year flood capacity is maintained. Thus, purchase or easements could be required on a total of 6,340 acres in order to carry out this alternative.

No detailed studies or surveys have been conducted in order to estimate the potential costs associated with implementation of the floodplain alternative. However, a similar proposal was made as a part of the U.S. Army Corps of Engineers Reconnaissance Report on Cache Creek (December 1995). Under this proposal, 6,647 acres would be acquired between Capay and Yolo, along Cache Creek, in order to create a riparian corridor and system of setback levees to protect the City of Woodland from 100-year flood events. According to the Army Corps report, land acquisition costs for this project were estimated at nearly $30 million. This number should be used for comparative purposes only, and may not be reflective of the actual costs.

Future Groundwater Recharge Opportunities

The Yolo County Flood Control and Water Conservation District has tentatively identified several areas as potential future groundwater recharge sites. These areas generally lie on the north bank of Cache Creek, between County Road 85 and Interstate 505, and on

both sides of the creek, downstream of County Road 94B. By lowering agricultural fields and allowing them to directly opening them to the channel, any surface water placed within these areas would drain into the creek and flow out into the bypass. Thus, future groundwater recharge opportunities in these areas would be lost. Water storage and recharge facilities would have to be located outside of the area considered in the floodplain alternative.