4.12 HAZARDS

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INTRODUCTION

The purpose of this section is to determine whether the CCRMP or alternatives would result in any public health hazards associated with channel improvement activities or result in additional hazards to the environment and public health, should the plan or any of the alternatives be approved and implemented.

SETTING

Description of Regional Environment

Land uses along Cache Creek consist primarily of agriculture and gravel mining. Sources of hazards associated with these land uses consist of pesticide/herbicide applications, storage of hazardous materials (including fuels, lubricants, and solvents) and mosquito-generating open bodies of water. Public health hazards are also associated with generation and dispersion of emissions from agricultural activities and aggregate extraction; emissions are discussed in Section 3.6, Air Quality, of this document.

The use, storage, and application of hazardous materials, including pesticides, are regulated on the local and State levels through statutes and regulations; the purpose of the statutes and regulations are to protect the environment and the public health. Mosquito abatement is enforced by the local mosquito abatement district.

Hazardous Materials

Pesticide/herbicide use and storage regulations are contained in the California Code of Regulations (CCR) Title 3. These regulations are enforced by the Yolo County Agricultural Commissioner. The regulations require a permit for the application of the pesticides and/or herbicides. In Yolo County, the pesticides/herbicides are used for a variety of row and tree crops, including those historically having been grown within the planning area.

Businesses (including farmers and aggregate producers) that store, handle, or dispose of hazardous materials (including fuels, pesticides/herbicides) must submit a Hazardous Materials Business Plan (business plan) in accordance with the California Health and Safety Code Section 25504. The business plans must be updated every two years or within 30 days after a substantial change in site operations. The business plan must:

- List all the hazardous materials stored at a site;
- Identify emergency response procedures for spills and personnel;
- Identify evacuation plans and procedures; and

- Identify training records for personnel to substantiate annual refresher training.

If hazardous materials are used or stored at a site, all employees are also required to receive hazard communication training. The purpose of the training is to ensure that employees understand the nature of the hazardous materials that they handle and can safely use, store, and dispose of the materials in accordance with CCR Title 8. The hazardous communication standard requires that employers must:

- Prepare an inventory of hazardous materials;
- Make Materials Safety Data Sheets available to employees;
- Conduct employees training on chemical hazards and safe handling of hazardous materials; and
- Ensure that hazardous materials containers are properly labeled.

The Yolo County Communications and Emergency Response Agency and the Yolo County Department of Environmental Health provides emergency services for the County in case of spills of hazardous materials. They have also been administering the Hazardous Materials Business Plan program. Annual inspections of businesses (primarily farming-related) are undertaken by the Agricultural Commissioner's office in concert with their inspection requirements for pesticide users (McCanta, 1996); inspections of businesses that store hazardous materials will be performed by the County Environmental Health Department in the future (Sarazan, 1996).

Mosquito Generation

Open bodies of water have the potential to generate additional populations of mosquitoes, especially if the water is shallow and stagnant. The Sacramento-Yolo Mosquito and Vector Control District (District) has jurisdiction in the project area for mosquito abatement in accordance with the Health and Safety Code, Division 3, Chapter 5, Article 1. Mosquito abatement activities are initiated by field technicians from the District performing field reconnaissances or review aerial photographs to identify standing water. Generation of mosquito populations in open bodies of water is generally most acute in shallow bodies of water with vegetation along the shores and stagnant, nutrient-rich water. The District typically plants mosquitofish in the open bodies of water to prevent mosquito generation (Brown, 1996).

Description of Local Environment

Hazardous materials are currently used (for heavy equipment and application of agricultural chemicals) and stored within the CCRMP area. A computer data search (Appendix H1) of the files from local, State, and Federal regulatory agencies responsible for administering regulations pertaining to hazardous materials was conducted for this project. The purpose of the computer data search was to ascertain whether any spills had been reported to the public agencies or any regulated fuel storage tanks were registered

with the appropriate agencies. The results of the search indicated that no known spills or tanks have been identified within the CCRMP area.

Pesticide/herbicide use in the fields along the banks of Cache Creek is dependent on the types of crops. The tree and row crops historically grown within the CCRMP area include almonds, sugar beets, tomatoes, sunflowers, safflowers, alfalfa, and grains. These crops typically receive pesticide, herbicide, and/or fungicide, applied either aerially or at ground level. The persistence of these chemicals in the subsurface varies widely. Continued applications may result in an accumulation of chemical residues in the soils and surface water runoff, which ultimately may be discharged into waterways. The pesticides of greatest concern are those used prior to the 1970's, i.e., DDT and toxaphene; those chemicals are persistent in the environment and can affect the public health as well as the environment.

Regulatory Framework

SMARA and Related Regulations

Should SMARA be found to be applicable to the project, the SMARA regulations contain requirements for the protection of water quality from the use of chemicals, which would minimize impacts from the use of these chemicals to water quality. Section 3707(d) of SMARA regulations requires that the "use of fertilizers or other soil amendments shall not cause contamination of surface or groundwater." The CCRMP contains general goals (3.2-3 and 3.2-4), one objective (3.3-3), and one action (3.4-1) for the protection of Cache Creek water quality. Specific requirements for use of fertilizers or other soil amendments are not addressed in the CCRMP.

Yolo County General Plan

The Yolo County General Plan contains policies for the protection of the public health and the environment pertaining to toxic and hazardous materials, oil spills, emergency plans, and emergency response (Policies S18, S19, S21, and S22, respectively). These policies all prescribe that: Yolo County shall develop emergency plans to be implemented in the event of accident, fire, or flood involving toxic or hazardous materials; the County will cooperate with other emergency agencies in case of oil spills; an emergency plan to be developed by the County shall be part of the Safety and Seismic Element of the General Plan; and the County will respond to catastrophic emergencies.

The County has prepared an Emergency Response plan in accordance with the requirements of the General Plan policies (McCanta, 1995). The draft CCRMP would not conflict with these overall emergency plans of the General Plan.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The project would have a significant health hazard effect if it would result in:

- Increased potential for accidental explosion or release of hazardous substances (including but not limited to oil, pesticides, chemicals, or radiation).
- Possible interference with an emergency response plan or emergency evacuation plan.
- The creation of any health hazard or potential health hazard.
- Exposure of people to existing sources of potential health hazards.
- Increased fire hazard in areas with flammable brush, grass, or trees.

Impact 4.12-1
Potential Human Health and/or Environmental Impacts from the Accidental Release of Petroleum Products and Other Chemicals Used during Channel Stabilization, Erosion Control, Weed Eradication, and Habitat Restoration.

Heavy equipment operation requires the use of hazardous materials. During channel modification projects, on-site fueling and maintenance activities could result in spillage of fuels, lubricants, and/or solvents both along the banks of Cache Creek and in the channel. Such spillage may not result in emergency conditions (i.e., imminent danger to life), but could affect soil and water quality and possibly worker safety. Spillage of liquid or gaseous hazardous materials at a plant site could also result in adverse effects to soil and groundwater quality and affect the health and safety of workers. This would be a significant impact without mitigation.

Draft CCRMP

The CCRMP contains Goals, Objectives, Actions, and Performance Standards (collectively referred to as policies) in the Water Resources Element to minimize the potential impacts to the public health from mining and reclamation activities. The policies on the protection of public health in the Water Resources Element are:

Goal 3.2-4: Enhance the quality of water resources by stressing prevention and stewardship, rather than costly remediation.

This goal is appropriate for the protection of water quality in Cache Creek from releases of hazardous materials from heavy equipment working in or near the Creek. However, the

goal is not supported by an objective to minimize the potential for releases of hazardous materials in or near the Creek during mining and reclamation activities.

Action 3.4-1 Discourage activities that impact the surface water quality of Cache Creek. Although surface mining operations are regulated, other land uses along the creek are not. The County shall work with the U.S. Natural Resource Conservation Service and the Yolo County Resource Conservation District to promote alternative soil and water management practices that improve local water resources.

Discouraging activities that could impact surface water quality in Cache Creek is an appropriate action for addressing potential releases into the Creek. However, the action is not specific regarding the releases of hazardous materials during mining and reclamation activities.

PS. 3.5-1 All heavy equipment working within the channel shall be kept in good working order to reduce emissions and preclude the leakage of oils and fuels.

PS 3.5-2 Firms performing work within the channel shall immediately notify the Community Development Director of any events such as fires, explosions, spills, land or slope failures, or other conditions at the site which could pose a hazard to life or property outside the permitted area. Upon request by any County agency, the firm shall provide a written report of any such event, within thirty (30) days, which shall include, but not be limited to, a description of the facts of the event, the corrective measures used, and the steps taken to prevent a recurrence of the incident. This condition does not supersede nor replace any requirement of any other government agency for reporting incidents.

A copy of the firms' approved Business Emergency Response Plans and the approved Spill Prevention Control and Countermeasure Plans shall be filed with the Yolo County Health Department, prior to the commencement of work within the channel.

These performance standards provide protection of water quality in Cache Creek. However, the performance standards do not acknowledge the requirements of the General Permit for Stormwater Pollution Discharges Associated with Construction Activities. These requirements include preparation of a Storm Water Pollution Prevent Plan, which describes the management of hazardous materials during construction activities. The enforcement of requirements for the General Permit is the jurisdiction of the Regional Water Quality Control Board.

Alternative 1a: No Project (Existing Conditions)

Alternatives 1a and 1b would not include the adoption of the CCRMP (or OCMP) and would allow continuation of mining at either actual 1995 rates (Alternative 1a) or at maximum allowable rates according to existing permits in and near Cache Creek (Alternative 1b). Existing permit conditions would mitigate these impacts.

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

Same as alternative 1a.

Alternative 2: No Mining (Alternative Site)

Implementation of this alternative would not result in impacts associated with spillage of hazardous materials from mining and reclamation in and near the Creek, since these activities would not occur.

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

This alternative would increase the width of the CCRMP planning area and not allow any mining within the revised boundaries. Since there would be no mining (and associated reclamation) there would be no use and handling of hazardous materials, except at plant sites (which would likely remain, at least for the short term). Any mining outside the revised CCRMP boundary would be subject to the requirements of the OCMP or existing permit conditions should the OCMP not be adopted. Potential impacts associated with the use, storage, and handling of hazardous materials at the plant is addressed by the CCRMP policies.

Mitigation Measure 4.12-1a (CCRMP)

An objective shall be added to the Water Resources Element to support Goal 3.2-4, as follows:

Obj. 3.3-5: Promote safe hazardous materials use and handling procedures during creek management activities.

Mitigation Measure 4.12-1b (CCRMP)

An action shall be added to the Water Resources Element to ensure that releases of hazardous materials are minimized or eliminated during channel reshaping and restoration:

Action 3.4-6: Establish operating standards for the use and handling of hazardous materials in and near the Cache Creek channel.

Mitigation Measure 4.12-1c (CCRMP)

Performance Standard 3.5-1 shall be revised to include standards for mining and reclamation activities in and near the Creek as well as where maintenance of heavy equipment can take place, as follows:

PS 3.5-1: All heavy equipment used for the channel improvement projects shall be kept in good working order to reduce emissions and preclude the leakage of oils and fuels. Fueling and maintenance activities shall not occur within 100 feet of the active channel. All procedures for handling, storage, and disposal of hazardous materials shall be described in a Storm Water Pollution Prevention Plan if required for the projects.

Mitigation Measure 4.12-1b (A-1a, A-1b, A-2, A-3)

None required.

Implementation of the mitigation measures identified for the CCRMP would reduce the impacts to a less-than-significant level. The impacts for Alternatives 1a, 1b, 2, and 3 are less than significant without mitigation.

Impact 4.12-2
Historic and Future Pesticide Use May Affect the Environment and the Health and Safety of Workers Engaged in Creek Management Activities

Pesticide, herbicide, fungicide, or fertilizer use in the those portion of the planning area that are currently or may have been in agricultural use could have resulted in accumulation of hazardous materials in the shallow soils. Historic chemical uses in the area may have included DDT and toxaphene prior to the 1970s. These chemicals are persistent and bio-accumulative in the environment and workers may be exposed to these chemicals during removal of topsoil as well as reclamation of mined areas.

Based on data collected on the lands for Solano Concrete's short-term application in 1995, the planning area soils do not contain hazardous levels of agricultural chemicals or levels exceeding US EPA's Preliminary Remediation Goals (PRGs). In 1995, Solano Concrete collected six soil samples from random locations on a 113-acre site (Farnham West parcel on property owned by Solano Concrete Company), which was the subject of a short-term mining application to Yolo County. The soil samples were collected (Kleinfelder, 1995) to determine the potential presence of pesticides and herbicides in the near surface soils. The results of the analyses of the samples indicated that the chemicals were present in three of the six locations. DDE, a breakdown of DDT (a pesticide banned in the 1970s), was detected at 2.0, 2.4, and 3.4 parts per billion. The regulatory threshold for DDE, DDD, and DDT is 1,000 parts per billion; above the threshold, the soils would be considered a hazardous waste according to CCR Title 22. The pesticide concentrations also did not exceed the PRGs. (PRGs for DOT, DDD, and DDE range in concentrations from 1,200 to 1,900 parts per billion.)

The fields from which the samples were collected had historical crop rotation with grains, corn, and tomatoes, similar to the crops in the planning area. The soil sample results from the Solano Concrete fields are therefore representative of soil quality conditions in the planning area. Based on these results, it is unlikely that workers coming into contact with the soils during mining and reclamation activities would not be adversely affected by residual agricultural chemicals in the soils.

Draft CCRMP

Pesticides and herbicides may be used in the restoration of habitat in and near the channel of Cache Creek. The CCRMP does not contain any specific policies for restricting the use

of chemicals that could potentially affect water quality. SMARA (Section 3707(d) requires that the "use of fertilizers or other soil amendments shall not cause contamination of surface or groundwater." The CCRMP contains one policy, Action 3.4-3, which provides for analysis of water samples at various sites along Cache Creek, as follows:

Action 3.4-3: Provide for an annual test of the water quality at various sites along Cache Creek. The County should enlist the assistance of other government agencies in carrying out the measurements, to reduce costs and provide accurate information. Testing should include such components as pH, dissolved oxygen, nitrogen, phosphorus, herbicides and insecticides, suspended and floating matter, odor, and opacity. This information would improve habitat restoration efforts and allow the County to monitor potential water quality.

This action would provide information on the potential effects to water quality from the use of herbicides, fertilizers, and other soil amendments used in habitat restoration areas. However, testing for pesticides, which also could be used, is not included in the list of parameters to be analyzed. The CCRMP also does not include implementing policies to protect water quality from use of chemicals in the habitat restoration areas.

Alternative 1a: No Project (Existing Conditions)

Under this alternative, there would be no habitat restoration in and near the channel; therefore, there would be no use of chemicals for habitat restoration that potentially could affect water quality.

Alternative 1b: No Project (Existing Permits and Regulatory Condition); Alternative 2: No Mining (Alternative Site); and Alternative 3: Channel Bank Widening (Implement Streamway Influence Boundary)

Same as alternative 1a.

Mitigation 4.12-2a (CCRMP)

The following objective and performance standard shall be added to the CCRMP to ensure that chemical use in habitat restoration areas do not affect the water quality in Cache Creek. In addition to these additions, Action 3.4-3 has been revised in Hydrology, Section 4.4, to include the analysis of pesticides for annual water monitoring activities.

Objective 3.3-5: Eliminate water quality impacts from the use of pesticides, fertilizers, and other soil amendments in the channel.

Performance Standard 3.5-5: Water quality data collected from Cache Creek shall be regularly evaluated by a trained professional to determine whether the use of chemicals in the habitat restoration areas is affecting water quality. If chemicals are used and a correlation between use and degradation of water quality is established, use of chemicals in the habitat restoration areas shall be reevaluated.

Mitigation Measure 4.12-2b (A-1a, A-1b, A-2, A-3)

None required.

Implementation of Mitigation Measure 4.12-2a would reduce the impact to a less-than-significant level for the CCRMP.

Impact 4.12-3
Open Bodies of Water May Become Breeding Areas for Mosquitoes. An Increase in the Mosquito Population Could Adversely Affect the Public Health

The creation of open bodies of water results in the possibility of providing additional breeding ground for mosquitoes. Mosquitoes typically breed in ponds with stagnant water and along the shores of lakes with shallow water. Open, clear bodies of water, subject to wind action generally do not constitute a significant mosquito breeding habitat. Mosquito generation would be a significant impact.

Draft CCRMP

The CCRMP does not contain any policies pertaining to the control of mosquitoes in those areas where open bodies of water would be created within the planning area as a result of channel reshaping and restoration. However, the changes resulting from channel reshaping and restoration would not result in significant increases in open bodies of water compared to existing conditions. Therefore, this would be a less-than-significant impact.

Alternative 1a: No Project (Existing Conditions)

The different rates and volumes of aggregate extraction under this alternative would not affect the potential for generation of mosquitoes in areas of open bodies of water in or near the Creek; all activities would be conducted in accordance with existing conditions of approval.

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

The impacts would be the same as for Alternative 1a.

Alternative 2: No Mining (Alternative Site)

Under this alternative there would be no further mining in and near the channel. Therefore, there would be no impacts associated with increases in the generation of mosquitoes.

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

Same as alternative 2.

Mitigation Measure 4.12-3a (CCRMP)

None required.

While the impacts associated with this alternative would be less than significant, it is recommended that the CCRMP be amended to include policies in the Water Quality Element to reduce or eliminate the generation of mosquitoes in created open bodies of water, as follows:

> *Goal 3.2-5: Provide habitat restoration without increasing generation of mosquitoes.*
>
> *Objective 3.3-6: Minimize mosquito generating potential in habitat restoration areas.*
>
> *Action 3.4-6: Coordinate all habitat restoration efforts with the Sacramento-Yolo Mosquito and Vector Control District.*

Mitigation Measure 4.12-3b (A-1a, A-1b, A-2, A-3)

None required.