Chapter 4
Environmental Consequences

4.1 Introduction

The focus of the analysis of environmental consequences is limited to the determination of whether the proposed HCP/NCCP alternatives would result in a "significant effect on the environment" according to CEQA, or would "significantly affect the quality of the human environment" according to NEPA.

CEQA defines a *significant effect on the environment* as "a substantial, or potentially substantial, adverse change in the environment" (PRC Div. 13 21068). State CEQA Guidelines Section 15382 describes *adverse change* as an "adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

CEQ NEPA Guideline Section 1508.14 defines the *human environment* as "the natural and physical environment and the relationship of people with that environment." *Significantly*, as used in NEPA, requires considerations of both context and intensity (CEQ NEPA Guideline sec. 1508.27).

The evaluation of the potential effects of the alternatives uses the existing conditions in the proposed HCP/NCCP inventory area as the baseline condition against which potential impacts are measured. Specific significance threshold criteria that were used to evaluate the significance of potential effects of the proposed project are presented in the discussion of each resource subject.

In accordance with State CEQA Guidelines (Section 15064[d][3]) and NEPA (40 CFR 1508.8), lead agencies are required to evaluate the proposed project's direct, indirect, and cumulative impacts on the environment. As described in Chapter 2, the proposed project evaluated in this EIS/EIR is the approval and implementation of a comprehensive planning framework for mitigating impacts on covered species and vegetation communities.

The HCP/NCCP would provide incidental take authorization for the participating local jurisdictions including Contra Costa County, City of Brentwood, City of Clayton, City of Oakley, City of Pittsburg, the County Flood Control District and the Implementing Entity of the HCP/NCCP. Project approvals by these entities within the permit area are part of the covered activities proposed under the

HCP/NCCP to be authorized for incidental take. Covered activities are detailed in Section 2.2 Proposed Project and Alternatives. This EIS/EIR addresses the effects of all covered activities under HCP/NCCP. Although all future projects in the permit area are including in this analysis, future projects would undergo project specific environmental review under CEQA.

No specific development or other ground-disturbing activity is approved or authorized as part of the proposed HCP/NCCP approval. Unless it is otherwise exempt, all future development projects and activities, including those undertaken by the Implementing Entity within proposed HCP/NCCP preserves, would proceed through the normal project review and approval process of the local land use agencies (e.g., grading permit issuance, EIR certification). Once the ITPs have been issued to the local land use agencies and the proposed HCP/NCCP has been implemented, the project review process would be expanded to include review and approval of applications for take of covered species. Applications for proposed HCP/NCCP take coverage would be made to the local land use jurisdictions that would be responsible for determining if a project application is complete and the applicant has complied with the terms of the proposed HCP/NCCP. If the application is complete and all conditions have been met, the participating jurisdiction would authorize take coverage for the project. Subsequent compliance with CEQA for individual projects would continue to be required as part of the project review and approval process of the local land use agencies. For projects with Federal involvement (e.g., funding, permitting under Clean Water Act) subsequent NEPA analysis may also be conducted.

Urban development within the HCP/NCCP urban development area, which is a general covered activity under the proposed HCP/NCCP, is development and growth that is planned under the general plans of the County and incorporated cities. The environmental impacts from this urban growth and transportation improvement projects in the region have been evaluated in prior CEQA documents for each of the local general plans. These are listed below.

- City of Pittsburg General Plan EIR (2004).
- City of Brentwood General Plan Update EIR (2001).
- City of Clayton General Plan EIR (2005).
- City of Oakley General Plan EIR (2002).
- Contra Costa General Plan IS/MND (2005).
- State Route 4 Bypass Project Final Supplemental EIR (2004).

These documents are incorporated by reference into this EIS/EIR. These prior analyses considered the effects of planned development, including cumulative effects, within each land use agency's jurisdiction. The analyses in the prior environmental documents, therefore, disclose the impacts and provide the programmatic mitigation measures required for this development. The impacts of urban development within each of the incorporated cities and any mitigation measures that may apply to subsequent projects are summarized in Appendix D.

For purposes of this document, it is assumed that urban development within the permit area will occur consistent with the relevant general plans' policy and guidance, and the programmatic mitigation measures identified in the general plan EIRs will adequately mitigate impacts of this growth. At such time when specific development projects are proposed and greater detail is available for review, subsequent CEQA documents would be required as part of the project review and approval process to identify and mitigate any project-specific impacts. Consistency with the plans and policies of the Cities of Brentwood, Clayton, Oakley, and Pittsburg, therefore, are not discussed in detail in this analysis, except as they would relate to implementation of proposed HCP/NCCP conservation measures.

The following resources are considered in detail for the each of the alternatives.

- Biological Resources
- Land Use and Planning
- Agricultural Resources
- Public Services (fire, police, recreational facilities)
- Hydrology and Water Quality
- Socioeconomics and Environmental Justice
- Geology, Soils, and Seismicity
- Cultural Resources
- Transportation
- Noise
- Air Quality
- Mineral Resources

4.2 Biological Resources

This section describes methods used to analyze potential impacts of the proposed HCP/NCCP and alternatives on biological resources, including potential impact mechanisms and impact assumptions, and any recommended mitigation measures. The resources considered in this discussion of environmental consequences include covered vegetation communities; wetlands, streams, and other jurisdictional waters; covered species and no-take species; and non-covered special-status species.

4.2.1 Methodology and Significance Criteria

The proposed HCP/NCCP is intended to provide local Permittees with take coverage only for those species that are covered under the Plan. Note that *the*

EIS/EIR considers urban development and rural infrastructure projects only in the evaluation of potential impacts to covered species or communities. Impacts to non-covered species from urban development within the HCP/NCCP urban development area or rural infrastructure projects have been assessed programmatically in the city and County general plan EIRs and would be assessed in the future in project-specific environmental documents. The EIS/EIR considers potential impacts on both covered and non-covered special-status species from implementation of the Proposed Plan and alternatives.

The biological resources impact analysis is qualitative; it is not based on site-specific information for most of the impact area. The mitigation measures described for potential impacts on non-covered sensitive biological resources have not been developed through formal consultation or coordination with resource agencies (e.g., CDFG, USFWS, NOAA Fisheries, and USACE). As part of subsequent project-level environmental analysis, agencies would need to be contacted to determine specific compensatory mitigation, if any, for impacts on non-covered federally and state-listed species, wetlands, and riparian habitats. Additional mitigation measures may also be identified as conditions of project permits (e.g., a Section 404 permit or a Streambed Alteration Agreement).

This impact analysis assumes that biological resources could be affected directly or indirectly by activities associated with conservation measures. Many of the conservation measures contained in the Plan are prescriptive measures that would be conditions of development, pursuant to HCP/NCCP coverage, to avoid or minimize impacts, and would result in indirect beneficial effects on covered species or communities. Other conservation measures would be required of the Implementing Entity and may result in avoidance or beneficial impacts to covered species, as well as avoidance, beneficial, or adverse impacts to non-covered species. The following types of activities associated with conservation measures may result in disturbance to biological resources.

- Disturbance to biological resources from increased human presence as part of surveys, monitoring, or recreational use.
- Disturbance to biological resources from construction of trails and recreation facilities.
- Disturbance to biological resources from conversion of habitat associated with restoration, enhancement, or creation activities.
- Removal of vegetation during construction of temporary staging areas and access roads.
- Removal of vegetation as part of management by controlled burns, grazing activities, or herbicide application.
- Disturbance to biological resources through active or passive relocations of individuals.

Implementation of the proposed HCP/NCCP or alternatives could result in direct, indirect, or cumulative impacts on biological resources (cumulative impacts are discussed in Chapter 5).

Direct impacts are those effects of a project that occur at the same time and place as project implementation, such as removal of habitat from ground disturbance. *Indirect impacts* are those effects of a project that occur either later in time or at a distance from the project location but are reasonably foreseeable, such as loss of aquatic species from upstream effects on water quality.

Direct and indirect impacts can also vary in duration and result in temporary, short-term, and long-term effects on biological resources. A *temporary* effect would occur only during the activity. A *short-term* effect would last from the time an activity ceases to some intermediate period of approximately 1 to 5 years (i.e., repopulation of habitat following restoration). A *long-term or permanent* effect would last longer than 5 years after an activity ceases. Long-term effects may be the result of ongoing maintenance and operation of a project, or may result in a permanent change in the condition of a resource, in which case it could be considered a *permanent* effect.

As a basis for this analysis, the EIS/EIR assumes that the land-cover and habitat suitability models developed for the proposed HCP/NCCP accurately represent the baseline conditions for biological resources. The impact assessment takes into account the amount and quality of the habitat available without the project, and the amount and quality of the habitat that would be available with the project when determining the significance of the impact and the necessity and adequacy of mitigation. The quality of future habitats is an important consideration in the overall conservation program, specifically in measures that are proposed to further project goals, such as creating and maintaining wetland habitats that sustain viable wildlife populations. A major assumption used in this analysis is that the proposed conservation measures will be fully effective in their stated objectives, and that habitat conditions predicted to result with implementation of the Proposed Plan would actually develop within the term of the permits. This assumption is substantially supported by the required incorporation of an effective monitoring and adaptive management plan into the proposed HCP/NCCP.

The assessment of impacts in the EIS/EIR also relies on several assumptions made in the proposed HCP/NCCP in assessing impacts on covered species.

- The timing of covered activities within the HCP/NCCP urban development area is unknown; accordingly, activities are assumed to occur during the season(s) with the greatest potential impact on each covered species (e.g., during the breeding season).
- Covered activities within HCP/NCCP preserves will be adjusted to avoid the breeding season of covered species.
- Covered activities will avoid take of all fully protected and extremely rare species.
- Future surveys unrelated to proposed HCP/NCCP implementation that may require capturing and handling individuals of covered species are not assessed by this Plan, nor are they considered covered activities.

- All covered activities will avoid and minimize take in accordance with the conservation measures.

Criteria for Determining Significance

The significance criteria for this analysis were developed from Appendix G of the CEQA Guidelines and from professional judgment. The proposed project would result in a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by CDFG or USFWS.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species.
- Have a substantial adverse effect on wetlands or other sensitive natural vegetation community identified in local or regional plans, policies, or regulations, or by CDFG or USFWS.
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan in the surrounding region.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

4.2.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impacts on Vegetation Communities

Impact BIO-1: Loss of up to 4,152 Acres of Annual Grassland Habitat. An estimated 2,533 acres would be directly impacted by covered activities with the initial urban development area, and 4,152 acres with the maximum urban development area. Under the proposed Plan, at least 13,000 acres of annual grassland outside public lands would be acquired for compensation within HCP/NCCP preserves, with the initial urban development area. As a result, approximately 66% of the total area of annual grassland in the inventory area would be preserved either in HCP/NCCP preserves or existing parks.

Native grasslands would be enhanced within the Preserve System, in accordance with Conservation Measure 2.4, by using experimental burning and/or grazing techniques to enhance cover of native forbs and perennial grasses.

Annual grasslands are common in the inventory area, representing 34% of the land area, and are degraded and dominated by nonnative species. The conservation measures in the proposed project would preserve and enhance native grassland.

This impact would be considered less than significant.

Mitigation Measure: No mitigation measures would be required.

Impact BIO-2: Loss of up to 115 acres of alkali grassland habitat. A total of 1,997 acres of alkali grassland was mapped within the inventory area. This total may be an underestimate because of the difficulty of identifying and mapping alkali grassland. Of this total, 115 acres would be directly impacted by covered activities under either scenario.

Currently, 19% of alkali grasslands are protected within public lands. The conservation strategy would preserve at least 900 acres (with the initial urban development area) of the 1,618 acres of alkali grassland habitat that are currently outside of public lands, resulting in the preservation of 1,279 acres (68%) of the alkali grassland that would remain after full implementation of the proposed Plan. The conservation strategy aims to acquire large blocks of alkali grassland in Zone 5. In accordance with measures described in Chapter 6 of the HCP/NCCP, project applicants would be required to conduct pre-construction surveys to identify alkali grassland habitat and to avoid and minimize impacts whenever possible.

Implementation of the conservation measures under the proposed HCP/NCCP to survey for and identify alkali grasslands that would be impacted by covered activities, avoid or minimize impacts, and acquire and enhance alkali grasslands within preserves would reduce this *impact to less than significant.*

Mitigation Measure: No mitigation measures would be required.

Impact BIO-3: Loss of up to 238 acres of oak woodland and oak savanna habitat. Covered activities would directly impact between 42 acres (with the initial urban development area) and 165 acres (with the maximum urban development area) of oak savanna, and 21 acres (with the initial urban development area) and 73 acres (with the maximum urban development area) of oak woodland. A total of 5,894 acres of oak savanna and 24,198 acres of oak woodland occur in the inventory area. The Proposed Plan provides for the acquisition of at least 900 acres of oak savanna and woodland (500 acres and 400 acres, respectively) with both the initial and maximum urban development areas. Up to a total of 9,000 acres of oak savanna and woodland could be acquired in the preserve system. Impacts on oak savanna would be mitigated at a ratio of 1:1, resulting in the restoration of up to 165 acres within preserves.

The conservation strategy contains several measures to avoid, enhance, and restore oak savanna and oak woodland (see Conservation Measures 1.1, 2.4, and 2.7).

Implementation of the conservation measures under the proposed NCP/HCCP to avoid, enhance, and restore oak savanna and oak woodland would reduce this *impact to less than significant*.

Mitigation Measure: No mitigation measures would be required.

Impact BIO-4: Loss of up to 2 Acres of chaparral/scrub habitat. Under the proposed Plan, covered activities would not directly impact chaparral/scrub habitat under the initial urban development area, and would directly impact up to 2 acres (with the maximum urban development area) of chaparral/scrub. A total of 3,016 acres of chaparral/scrub was mapped in the inventory area. The proposed HCP/NCCP requires that 550 acres of chaparral/scrub be acquired with both the initial and maximum urban development areas.

Under the conservation strategy, the historical extent, frequency, and conditions of fire in the chaparral and coastal sage scrub within the preserves would be assessed and used to determine whether fire or other active management techniques should be used to maintain these stands. Prescribed fire may be used to maintain or enhance chaparral/scrub habitat on preserves; the vegetation would be monitored to determine the effectiveness of this management tool.

With the implementation of Conservation Measure 2.8, and the acquisition and protection within preserves, this impact is considered *less than significant*.

Mitigation Measures: No mitigation measures would be required.

Impact BIO-5: Loss of up to 35 acres of riparian woodland/scrub habitat. Under the proposed Plan, covered activities would directly impact from 30 acres (with the initial urban development area) up to 35 acres (with the maximum urban development area) of riparian/scrub. A total of 448 acres of riparian/scrub was mapped in the inventory area. The proposed HCP/NCCP requires that 60 acres of riparian/scrub be acquired with the initial urban development area and 70 acres be acquired with the maximum urban development area.

Conservation Measures 2.9 and 2.10 provide for enhancement and restoration of riparian woodland/scrub. In addition, affected riparian woodland/scrub would be compensated for at a 1:1 ratio resulting in restoration of an additional 50 to 55 acres of habitat for recovery of covered species and biological diversity.

With the implementation of these conservation measures, the impact on riparian woodland/scrub would be considered *less than significant.*

Mitigation Measures: No mitigation measures would be required.

Impact BIO-6: Loss of up to 255 acres of wetlands, ponds, and sloughs, and 0.8 miles of stream. This land-cover category includes wetland (of undetermined type), alkali wetland, seasonal wetland, aquatic, pond, and slough/channel. Under the proposed Plan, covered activities would directly impact up to 237 acres of these land-cover types (with the initial urban development area) or 255 acres (with the maximum urban development area). A

total of 3,186 acres of these habitats was mapped in the inventory area. The proposed NCP/HCCP requires acquisition of these wetland habitats at differing ratios. Total acquisition would be 470 acres of wetland habitat with the maximum urban development area. Impacts to streams under the proposed Plan would be limited to 0.6 miles of perennial or intermittent streams and 4.0 miles of ephemeral creeks (not mapped) with the initial urban development areas, and 0.8 miles of perennial or intermittent streams and 5.0 miles of ephemeral creeks with the maximum urban development area. Impacts to streams require preservation at a 2:1 ratio for perennial streams and a 1:1 ratio for intermittent and ephemeral streams. Impacts to perennial or intermittent streams also require restoration at a 1:1 ratio where feasible. Where infeasible, restoration of seasonal wetlands or perennial wetlands will be substituted.

Aquatic habitats exhibit a high degree of biological, physical, and hydrologic diversity. The proposed HCP/NCCP includes a number of conservation measures designed to avoid, minimize, and compensate for impacts on these habitats. These measures include:

- Measures set forth in Chapter 6 of the HCP/NCCP requires project proponents to perform a wetland delineation and to document all measures that have been included for avoidance and minimization of impacts to wetlands.
- Conservation Measure 2.12 requires avoidance of wetland, pond, and stream habitats.
- Conservation Measure 2.2 requires wetland and pond enhancement and management.
- Conservation Measure 2.3 requires restoration or creation of between 320 and 354 acres of aquatic habitat to promote recovery of associated species. Restoration of seasonal and alkali wetlands would occur at a ratio of 2:1 and restoration of perennial wetlands and streams would occur at a ratio of 1:1. Restoration of sloughs would be at 0.5:1. Ponds and streams would be created at a ratio of 1:1, except open-water aquatic habitat, which will be created as ponds at a ratio of 0.5:1.

With the implementation of these conservation measures, the impact on aquatic habitats would be considered *less than significant*.

Mitigation Measure: No mitigation measures would be required.

Impact BIO-7: Loss of up to 5,011 acres of cropland or pasture. Under the Plan, covered activities would result in the loss of between 4,050 acres (with the initial urban development area) and 5,011 acres (with the maximum urban development area). The Plan provides for the Implementing Entity to secure acquisition or conservation easements on between 250 and 400 acres of cropland or pasture. Cropland is a common land cover in the area, representing approximately 12% of the total land cover in the inventory area, and approximately 19,808 acres would remain outside preserves or public lands after Plan implementation.

In addition to the land acquisition requirements, Conservation Measures 1.3 and 2.11 provide for development of management plans for cultivated lands and for enhancement of agricultural lands to benefit covered species.

Croplands are common throughout the area and offer limited biological values compared to native habitats. Conservation of croplands as well as enhancement of these lands for biological resources would reduce the impact from loss of croplands to a *less than significant level*.

Mitigation Measure: No mitigation measures would be required.

Impacts on Covered Special-Status Species

Impact BIO-8: Potential disturbance or loss of covered special-status plant and wildlife species and their habitat associated with proposed plan. As described in Section 3.2 *Biological Resources,* 28 special-status plant and wildlife species are proposed for coverage under the proposed Plan. Covered activities, including urban development, rural infrastructure projects, and preserve management, could result in take of these species. Impacts on covered special-status plant and wildlife species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

The proposed HCP/NCCP establishes a conservation strategy to avoid, minimize, and mitigate, to the maximum extent practicable, impacts to each covered species, and to establish and maintain habitat to preserve and recover each covered species. These goals are implemented through specific objectives for each covered species. These goals and objectives would be specifically implemented through a comprehensive conservation strategy, including landscape, vegetation, and species-specific measures. The conservation strategy provides for specific measures relative to each covered species and represents a complete and adequate mitigation program. In addition, the conservation strategy provides for acquisition of preserves comprised of suitable habitat for covered species, organized across the landscape to provide ecosystem integrity.

A comprehensive monitoring and adaptive management program would be required of the Implementing Entity to examine the effectiveness of the program and to ensure that these measures are successful over time in achieving the biological goals and objectives.

When implemented in concert with planned development, the conservation program would avoid, minimize, and mitigate for impacts on these covered species and contribute to recovery of these species. The potential impact on covered special-status plant and wildlife species under the proposed Plan would *be less that significant*.

Mitigation Measures: No mitigation measures would be required.

Impacts on Non-Covered Special-Status Species

Non-covered special status wildlife and plant species with a high likelihood of occurrence in the project area are shown in Tables 4.2-1 and 4.2-2, respectively. These tables describe the potential impact mechanisms on each species and whether the potential impact would be significant. Mitigation measures are recommended for each special status species that could be affected by implementation of the proposed conservation strategy.

Impact BIO-9: Potential disturbance or loss of valley elderberry longhorn beetle and their habitat associated with the proposed plan. The valley elderberry longhorn beetle's entire life cycle is associated with elderberry shrubs in California's Central Valley and the surrounding foothills. Elderberry shrubs are likely to be present in some riparian areas at the eastern fringe of the inventory area. The acquisition of preserve lands and the protection and enhancement of these riparian areas would help to reduce the effects of potential impacts on this species. Nevertheless, disturbance to elderberry shrubs may occur during habitat restoration activities for covered species and during on-going management activities. *This impact would be considered significant but can be mitigated to less-than-significant.*

> **Mitigation Measure BIO-1: Conduct surveys for elderberry shrubs and avoid during restoration activities in suitable habitat.** Within suitable for the valley elderberry longhorn beetle a qualified biologist would identify and mark all elderberry shrubs with stems 1.0 inch or more in diameter within 100 feet of the construction area. A 100-foot buffer would be established around all elderberry shrubs, and no construction activities would be permitted within the buffer zone without consultation with USFWS. In areas where encroachment on the 100-foot buffer has been approved by USFWS, no ground-disturbing activities would be permitted within 20 feet of the dripline of each elderberry shrub unless the activity is necessary to complete the project. No riparian vegetation within 100 feet of elderberry shrubs would be removed by construction activities.

Impact BIO-10. Temporary disturbance to nesting habitat for double crested cormorant, great blue heron, Northern harrier, white-tailed kite, American peregrine falcon, California black rail, California horned lark, loggerhead shrike, and Bell's sage sparrow during restoration activities. Noise, vibration, visual, and proximity related disturbances associated with restoration activities could adversely affect the above-mentioned special-status species, if they are nesting on or adjacent to the restoration site. If individuals of these species nest in the area during restoration activities, construction noise could cause them to abandon their nests or young. The breeding success of these species could be reduced if disturbances reduce the ability of adults to properly care for their eggs or young.

Implementation of Conservation Measure 1.11 would ensure that there is no take of fully protected species; therefore, impacts on nesting white-tailed kite,

American peregrine falcon and California black rail would be less than significant and no additional mitigation for these species is required.

Overall, implementation of the conservation strategy would benefit these special-status species through land preservation (Conservation Measure 1.1), habitat enhancement, restoration, and creation (Conservation Measure 2.1), as well as a variety of other measures such as reducing urban effects (Conservation Measure 1.9) and enhancing the prey base in grassland foraging habitat (Conservation Measure 2.5). Nevertheless, temporary disturbance to nests of these special-status species may occur during habitat restoration or construction activities within the preserves. No mitigation is required if these activities occur during the nonbreeding season (August 16 to February 28). However, if these activities occur during the breeding season, disturbance of nesting special-status birds would be minimized and avoided through implementation of the following mitigation measure. *This impact would be considered significant but can be mitigated to less-than-significant*.

> **Mitigation Measure BIO-2: Conduct preconstruction surveys to locate double crested cormorant, great blue heron, Northern harrier, California horned lark, loggerhead shrike, and Bell's sage sparrow nest sites or rookeries before construction is initiated and avoid breeding sites.** A qualified biologist will conduct surveys in suitable habitat to locate nest sites of the above-mentioned species in the spring of each construction year. Survey results will be submitted to CDFG before restoration activities may proceed. If the survey does not identify any nesting special-status bird species in the area potentially affected by the proposed activity, no further mitigation is required. If nest sites or young are located, a no-disturbance buffer will be established around the active nest. The biologist will consult with CDFG to determine the size of the no-disturbance buffer.

Impact BIO-11. Potential disturbance or loss of non-covered special-status plant species and their habitat associated with the proposed Plan. No restoration or other substantial ground disturbance that could affect non-covered special-status plant species would be expected to occur in chaparral, oak savanna, or oak woodland habitats since the objectives of the proposed Plan are to minimize impacts, and maintain and enhance these habitats (see conservation measures 2.4.1, 2.4.2, and 2.5.1). Operation and maintenance activities in these habitats would be expected to involve minor amounts of disturbance that is not likely to significantly impact non-covered special-status species. Vegetation management in preserves (i.e., grazing, prescribed burns) to enhance habitat and control exotics should benefit species associated with these habitats.

Restoration or construction in grassland, riparian, or other aquatic habitat under the proposed Plan could result in direct impacts to non-covered special-status species associated with these habitats, including fragrant fritillary, rock sanicle, eel-grass pondweed, rayless ragwort, and most-beautiful jewel flower. These activities may result in direct mortality, a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Table 4.2-1. Potential Impacts on Special-Status Wildlife Species with High Likelihood to Occur in Plan Area

Species Common and Scientific Name	Status[a] Federal/State	Impact Mechanisms	Level of Significance	Mitigation Measures
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–	Potential for disturbance or loss of habitat during conversion and habitat restoration activities for covered species, and during on-going management activities particularly where such activities are conducted near riparian habitats.	Less than significant with mitigation.	Mitigation Measure BIO-9.
Northwestern pond turtle *Clemmys marmorata marmorata*	–/SSC	Habitat could be affected during wetland, pond, and riparian enhancement and restoration activities. Potential for disturbance or loss of upland nesting and estivation habitat during conversion and habitat restoration activities for covered species, and during on-going management activities, particularly where such activities are conducted near existing ponds and streams. Not expected to result in a substantial impact on existing population, however restoration or enhancement activities within suitable habitat could temporarily impact species and their habitat. Beneficial effects of restoration and enhancement of ponds and streams that provide habitat.	Less than significant with mitigation.	Mitigation Measure BIO-10
California horned lizard *Phrynosoma coronatum frontale*	–/SSC	Potential for disturbance or loss of habitat during conversion and restoration activities of various habitat types for covered species, and during on-going management activities. Because grassland habitat is abundant in the plan area, potential impacts are not expected to result in a substantial impact on existing population or habitat.	Less than significant.	No mitigation required.

Table 4.2-1. Continued

Species Common and Scientific Name	Status[a] Federal/State	Impact Mechanisms	Level of Significance	Mitigation Measures
Double-crested cormorant *Phalacrocorax auritus* (rookery site)	–/SSC	Potential for disturbance to nesting habitat during habitat restoration activities for covered species and during on-going management activities, particularly where such activities are conducted near existing ponds, streams, and riparian. Habitat could be affected during wetland, pond, and riparian enhancement and restoration activities, and during on-going management activities. Not expected to result in a substantial impact on existing population, but effects could be substantial if rookery site is present at a habitat restoration or enhancement site.	Less than significant with mitigation.	Mitigation Measure BIO-11.
Great blue heron *Ardea herodias* (rookery)	–/–	Potential for disturbance to nesting habitat during habitat restoration activities for covered species and during on-going management activities, particularly where such activities are conducted near existing ponds, streams, and riparian. Habitat could be affected during wetland, pond, and riparian enhancement and restoration activities, and during on-going management activities. Not expected to result in a substantial impact on existing population, but effects could be substantial if rookery site is present at a habitat restoration or enhancement site.	Less than significant with mitigation.	Mitigation Measure BIO-11.

Species Common and Scientific Name	Status[a] Federal/State	Impact Mechanisms	Level of Significance	Mitigation Measures
Northern harrier *Circus cyaneus*	–/SSC	Potential for disturbance to habitat during habitat restoration activities for covered species and during on-going management activities, particularly where such activities are conducted in grassland areas near wetland habitats. Nesting habitat could be affected during grassland enhancement and restoration activities. Not expected to result in a substantial impact on existing population, but effects could be substantial if nest site is present at a habitat restoration or enhancement site.	Less than significant with mitigation.	Mitigation Measure BIO-11.
White-tailed kite *Elanus leucurus*	–/FP	No potential for disturbance to nesting habitat because this species would be protected under Conservation Measure 1.1.4, which would ensure that there is no take of fully protected species.	Less than significant.	No mitigation required.
American peregrine falcon *Falco peregrinus anatum*	–/E, FP	No potential for disturbance to nesting habitat because this species would be protected under Conservation Measure 1.1.4, which would ensure that there is no take of fully protected species.	Less than significant.	No mitigation required.
California black rail *Laterallus jamaicensis coturniculus*	–/T, FP	No potential for disturbance to nesting habitat because this species would be protected under Conservation Measure 1.1.4, which would ensure that there is no take of fully protected species.	Less than significant.	No mitigation required.

Species Common and Scientific Name	Status[a] Federal/State	Impact Mechanisms	Level of Significance	Mitigation Measures
California horned lark *Eremophila alpestris actia*	–/SSC	Potential for disturbance to habitat during habitat restoration activities for covered species and during on-going management activities, particularly where such activities are conducted in grassland habitats. Nesting habitat could be affected during grassland enhancement and restoration activities. Not expected to result in a substantial impact on existing population, but effects could be substantial if nest site is present at a habitat restoration or enhancement site.	Less than significant with mitigation.	Mitigation Measure BIO-11.
Loggerhead shrike *Lanius ludovicianus*	–/SSC	Potential for disturbance to habitat during habitat restoration activities for covered species and during on-going management activities, particularly where such activities are conducted in grassland habitats. Nesting habitat could be affected during grassland enhancement and restoration activities. Not expected to result in a substantial impact on existing population, but effects could be substantial if nest site is present at a habitat restoration or enhancement site.	Less than significant with mitigation.	Mitigation Measure BIO-11.
Suisun song sparrow *Melospiza melodia maxillaris*	–/SSC	No potential for impact because restoration activities would not occur in or adjacent to brackish and tidal marshes supporting cattails, tules, various sedges, and pickleweed.	Less than significant.	No mitigation required.

Species Common and Scientific Name	Status[a] Federal/State	Impact Mechanisms	Level of Significance	Mitigation Measures
Bell's sage sparrow *Amphispiza belli belli*	–/SSC	Potential for disturbance to habitat during habitat restoration activities for covered species and during on-going management activities, particularly where such activities are conducted in chapparal habitats. Nesting habitat could be affected during grassland enhancement and restoration activities. Not expected to result in a substantial impact on existing population, but effects could be substantial if nest site is present at a habitat restoration or enhancement site.	Less than significant with mitigation.	Mitigation Measure BIO-11.

[a] Species Status explanations:

Federal

E = listed as endangered under the federal Endangered Species Act.

T = listed as threatened under the federal Endangered Species Act.

PE = proposed for federal listing as endangered under the federal Endangered Species Act.

PT = proposed for federal listing as threatened under the federal Endangered Species Act.

– = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

– = no listing.

Table 4.2-2. Potential Impacts on Special-Status Plant Species with High Likelihood to Occur in Plan Area

Species Common and Scientific Name	Status[a] Federal/State/ CNPS	Impact Mechanisms	Level of Significance	Mitigation Measures
Contra Costa manzanita *Arctostaphylos manzanita* ssp. *laevigata*	–/–/1B	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required
Congdon's tarplant (spikeweed) *Centromadia (Hemizonia) parryi* ssp. *congdonii*	SC/–/1B	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required
Mt. Diablo bird's-beak *Cordylanthus nidularius*	SC/R/1B	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required
Hospital Canyon larkspur *Delphinium californicum* ssp. *interius*	SC/–/1B	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required
Round-leaved filaree *Erodium macrophyllum*	–/–/2	Potential for disturbance or loss of habitat during restoration activities in grassland areas. Not expected to result in a substantial impact on existing population, however restoration activities within suitable habitat could temporarily impact species. Beneficial effects from restoration and enhancement of grassland habitat.	Less than significant with mitigation.	Mitigation Measure BIO-12

Table 4.2-2. Continued

Species Common and Scientific Name	Status[a] Federal/State/ CNPS	Impact Mechanisms	Level of Significance	Mitigation Measures
Fragrant fritillary *Fritillaria liliacea*	SC/–/1B	Potential for disturbance of habitat and loss of individuals during restoration in grassland. Restoration and enhancement of habitat would benefit species, however, restoration activities could result in temporary impacts.	Less than significant with mitigation.	Mitigation Measure BIO-12
Hall's bush mallow *Malacothamnus hallii*	–/–/1B	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required
Robust monardella *Monardella villosa* ssp. *globosa*	–/–/1B	No restoration proposed in oak woodland or chaparral habitat. Low potential for disturbance from ongoing use or maintenance activities in oak woodland or chaparral. Restoration and enhancement of oak woodland and chaparral habitat should benefit species.	Less than significant.	No mitigation would be required
Mount Diablo phacelia *Phacelia phacelioides*	SC/–/1B	No restoration proposed in oak woodland or chaparral habitat. Low potential for disturbance from ongoing use or maintenance activities in oak woodland or chaparral. Restoration and enhancement of oak woodland and chaparral habitat should benefit species.	Less than significant.	No mitigation would be required
Rock sanicle *Sanicula saxatilis*	–/R/1B	Potential for disturbance of habitat and loss of individuals during restoration grassland. Restoration and enhancement of oak woodland and chaparral habitat would benefit species, however, restoration activities could temporarily impact species.	Less than significant with mitigation.	Mitigation Measure BIO-12

Table 4.2-2. Continued

Species Common and Scientific Name	Status[a] Federal/State/ CNPS	Impact Mechanisms	Level of Significance	Mitigation Measures
Eel-grass pondweed *Potamogeton zosteriformis*	–/–/2	Potential for disturbance of habitat and loss of individuals during restoration of riparian or wetland. Overall beneficial effects of restoration and enhancement of aquatic habitat, however, restoration activities could temporarily impact species.	Less than significant with mitigation.	Mitigation Measure BIO-12
Most beautiful jewel-flower *Streptanthus albidus* ssp. *peramoenus*	–/–/1B	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required
Mt. Diablo jewel-flower *Streptanthus hispidus*	–/–/1B	Potential for disturbance or loss of habitat during restoration activities in grassland areas. Not expected to result in a substantial impact on existing population, however restoration activities within suitable grassland habitat could temporarily impact species. No restoration proposed in chaparral habitat and potential for disturbance from ongoing use or maintenance activities in chaparral is low. Restoration and enhancement of grassland habitat and maintenance of chaparral habitat should benefit species.	Less than significant with mitigation.	Mitigation Measure BIO-12
Rayless ragwort *Senecio aphanactis*	–/–/2	Potential for disturbance of habitat and loss of individuals during restoration in alkali grassland areas. Restoration and enhancement of habitat should benefit species, however, restoration activities could result in temporary impacts.	Less than significant with mitigation.	Mitigation Measure BIO-12

Species Common and Scientific Name	Status[a] Federal/State/ CNPS	Impact Mechanisms	Level of Significance	Mitigation Measures
Oval-leaved viburnum *Viburnum ellipticum*	–/–/2	No restoration proposed in chaparral habitat. Low potential for substantial impacts from ongoing use or maintenance activities in chaparral. Maintenance of chaparral habitat should benefit species overall.	Less than significant.	No mitigation would be required

[a] Species Status explanations:

Federal

E = listed as endangered under the federal Endangered Species Act.

T = listed as threatened under the federal Endangered Species Act.

PE = proposed for federal listing as endangered under the federal Endangered Species Act.

PT = proposed for federal listing as threatened under the federal Endangered Species Act.

SC = federal species of concern.

– = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

R = listed as rare under the California Native Plant Protection Act.

– = no listing.

California Native Plant Society

1A = List 1A species: presumed extinct in California.

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

3 = List 3 species: plants about which more information is needed to determine their status.

– = no listing.

This impact would be significant but could be mitigated to less than significant.

Mitigation Measure BIO-3. Document special status plant populations and avoid or minimize impacts. The Implementing Entity, or its designated agents, will retain a qualified botanist to document the presence or absence of non-covered special-status plant species in the preserves. Surveys for non-covered special-status species may be conducted either as part of project-level environmental review for a specific preserve activity (i.e., restoration project, construction project), or as part of the comprehensive plant survey described in Chapter 6 of the HCP/NCCP. These surveys would conform to Plan requirements (planning surveys for [covered] plants in impact areas and potential preserves) and would determine the presence, location, and extent of any populations of non-covered special-status plant species.

If special-status plants are found, the population would be incorporated into the project or restoration design to avoid, to the extent feasible, direct or indirect impacts to these species. Special-status plants near the project site will be protected during construction by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The Implementing Entity would coordinate with the appropriate agencies (CDFG, USFWS) to develop appropriate avoidance and mitigation measures.

Impact BIO-12: Potential Disturbance or Loss of Common Wildlife Species and Their Habitat Associated with Proposed Plan. Implementation of the proposed NCP/HCCP could disturb common wildlife through modification of habitat or temporary displacement of common wildlife during construction activities. Migratory bird species protected under the Migratory Bird Treaty Act (MBTA) could be affected by covered activities. The following factors would minimize the potential for impacts on common wildlife species to less than significant.

- The major habitat types affected by implementation of the proposed Plan are abundant in the region (annual grassland and cropland).
- Much of the habitat that would be restored or converted is already used for agriculture or grazing activities. A change in land use would not result in significant reductions in common wildlife populations.
- Protection measures established to reduce impacts on covered and non-covered special-status wildlife would also function to protect common wildlife species, including migratory birds.
- Specific measures are included in the HCP/NCCP to avoid impacts on migratory birds protected under MBTA.
- The adverse of affects on birds of presently operating wind turbines in the plan area could be reduced if land with wind turbines is acquired and those turbines are subsequently removed from operation, as is encouraged under the Plan.

Therefore, *the impact would be less than significant.*

Mitigation Measures: No mitigation measures would be required**.**

Alternative 2: Conservation Strategy B

Impacts on Vegetation Communities

Impact BIO-1: Loss of up to 4,152 Acres of Annual Grassland Habitat. The impacts to annual grassland under Alternative 2 would be the same as under Alternative 1. Under the Alternative 2, at least 11,000 acres of annual grassland outside public lands would be acquired for compensation within HCP/NCCP preserves, with the initial urban development area (see Table 2-6). As a result, approximately 61% of the total area of annual grassland in the inventory area would be preserved either in HCP/NCCP preserves or existing parks. Other conservation measures related to annual grassland under Alternative 2 are the same as under Alternative 1.

Implementation of the conservation measures under Alternative 2 to conserve and enhance annual grasslands would reduce this *impact to less than significant.*

Mitigation Measure: No mitigation measures would be required.

Impact BIO-2: Loss of up to 115 acres of alkali grassland habitat. The impacts to alkali grassland under Alternative 2 would be the same as under Alternative 1. The conservation strategy under Alternative 2 would preserve at least 650 acres (with the initial urban development area) of the 1,618 acres of alkali grassland habitat that are currently outside of public lands, resulting in the preservation of 1,029 acres (52%) of the alkali grassland that would remain after full implementation of the proposed Plan. All other aspects of the conservation strategy under Alternative 2 are the same as under Alternative 1.

Implementation of the conservation measures under Alternative 2 to survey for and identify alkali grasslands that would be impacted by covered activities, avoid or minimize impacts, and acquire and enhance alkali grasslands within preserves would reduce this *impact to less than significant.*

Mitigation Measure: No mitigation measures would be required.

Impact BIO-3: Loss of up to 238 acres of oak woodland and oak savanna habitat. Impacts to oak woodland and oak savanna are the same under Alternative 2 as Alternative 1. Alternative 2 provides for the acquisition of at least 850 acres of oak savanna and woodland (450 acres and 400 acres, respectively) with both the initial and maximum urban development areas. All other conservation measures in Alternative 2 related to oak woodland and oak savanna are the same as in Alternative 1.

Implementation of the conservation measures under Alternative 2 to avoid, enhance, and restore oak savanna and oak woodland would reduce this *impact to less than significant*.

Mitigation Measure: No mitigation measures would be required.

Impact BIO-4: Loss of up to 2 acres of chaparral/scrub habitat. Impacts to chaparral/scrub under Alternative 2 would be the same as under Alternative 1. Preservation and management of chaparral/scrub under Alternative 2 would also be the same as under Alternative 1.

With the implementation of the preservation and management measures under Alternative 2, this impact is considered *less than significant*.

Mitigation Measures: No mitigation measures would be required.

Impact BIO-5: Loss of up to 35 acres of riparian woodland/scrub habitat. Impacts to riparian woodland/scrub under Alternative 2 are the same as under Alternative 1. Preservation and management of riparian woodland/scrub under Alternative 2 would also be the same as under Alternative 1. Restoration of riparian woodland/scrub under Alternative 2 would occur throughout the preserve system and would not be prioritized along Marsh Creek, Kellogg Creek, or on or adjacent to Dutch Slough in Oakley. Cropland and pasture would not be acquired within the ULL along Marsh Creek, limiting riparian restoration opportunities in this area under Alternative 2. All other conservation measures for riparian woodland/scrub under Alternative 2 are the same as under Alternative 1.

With the implementation of these conservation measures, the impact on riparian woodland/scrub under Alternative 2 would be considered *less than significant*.

Mitigation Measures: No mitigation measures would be required.

Impact BIO-6: Loss of up to 255 acres of wetlands, ponds, and sloughs, and 0.8 miles of stream. Impacts to wetlands, ponds, sloughs, and streams under Alternative 2 are the same as under Alternative 1. Alternative 2 requires acquisition and restoration of these wetland habitats at the same ratios as under Alternative 1. Minimum acquisition under Alternative 2 within Zone 5 would be 15 acres with the initial urban development area and 23 acres with the maximum urban development area. There would be no minimum acquisition of alkali wetland in Zone 6 under Alternative 2. All other conservation measures related to wetlands, ponds, sloughs, and streams would be the same under Alternative 2 as Alternative 1.

With the implementation of these conservation measures, the impacts on aquatic habitats under Alternative 2 would be considered *less than significant*.

Mitigation Measure: No mitigation measures would be required.

Impact BIO-7: Loss of up to 5,011 acres of cropland or pasture. Impacts to cropland and pasture under Alternative 2 are the same as under Alternative 1. Alternative 2 requires the Implementing Entity to acquire between 1,200 and 1,600 acres of cropland or pasture in Zone 6, significantly more than under Alternative 1. Preservation of cropland and pasture under Alternative 2 would be allowed throughout Zone 6 and would not be focused along creeks (including within the ULL) and near Dutch Slough as in Alternative 1. This additional conservation would preserve more foraging habitat for Swainson's hawk than under Alternative 1 but may provide less breeding habitat (see Impact BIO-5).

Croplands are common throughout the area and are already protected from urban development through strong land use restrictions in Contra Costa County. These habitats offer limited biological values compared to native habitats. Conservation of croplands as well as enhancement of these lands for biological resources would reduce the impact from loss of croplands to a *less than significant level*.

Mitigation Measure: No mitigation measures would be required.

Impacts on Covered Special-Status Species

Impact BIO-8: Potential disturbance or loss of covered special-status plant and wildlife species and their habitat associated with proposed plan. As described in Section 3.2 *Biological Resources*, 28 special-status plant and wildlife species are proposed for coverage under the proposed Plan. Covered activities, including urban development, rural infrastructure projects, and preserve management, could result in take of these species. Impacts on covered special-status plant and wildlife species or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Alternative 2 establishes nearly the same conservation strategy as Alternative 1 to avoid, minimize, and mitigate, to the maximum extent practicable, impacts to each covered species, and to establish and maintain habitat to preserve and recover each covered species. The same comprehensive monitoring and adaptive management program would be required of the Implementing Entity under Alternative 2 as in Alternative 1.

When implemented in concert with planned development, the conservation program under Alternative 2 would avoid, minimize, and mitigate for impacts on these covered species and contribute to recovery of these species. The potential impact on covered special-status plant and wildlife species under the proposed Plan would *be less that significant.*

Mitigation Measures: No mitigation measures would be required.

Impacts on Non-Covered Special-Status Species

Non-covered special status wildlife and plant species with a high likelihood of occurrence in the project area are shown in Tables 4.2-1 and 4.2-2, respectively. These tables describe the potential impact mechanisms on each species and whether the potential impact would be significant. Mitigation measures are recommended for each special status species that could be affected by implementation of the conservation strategy under Alternative 2.

Impact BIO-9: Potential disturbance or loss of valley elderberry longhorn beetle and their habitat associated with the proposed plan. The valley elderberry longhorn beetle's entire life cycle is associated with elderberry shrubs in California's Central Valley and the surrounding foothills. Elderberry shrubs are likely to be present in some riparian areas at the eastern fringe of the inventory area. The acquisition of up to 1,600 acres of cropland or pasture in Zone 6 could provide additional protection for longhorn beetles than in Alternative 1 if these preserves supported suitable habitat for the species (elderberry shrubs). Additional preservation and enhancement of these areas would help to reduce the effects of potential impacts on this species. Nevertheless, disturbance to elderberry shrubs may occur during habitat restoration activities for covered species and during on-going management activities. *This impact would be considered significant but could be mitigated to less-than-significant*.

> **Mitigation Measure BIO-1: Conduct surveys for elderberry shrubs and avoid during restoration activities in suitable habitat.** Mitigation Measure BIO-1 would also apply under Alternative 2.

Impact BIO-10. Temporary disturbance to nesting habitat for double crested cormorant, great blue heron, Northern harrier, white-tailed kite, American peregrine falcon, California black rail, California horned lark, loggerhead shrike, and Bell's sage sparrow during restoration activities. Noise, vibration, visual, and proximity related disturbances associated with restoration activities could adversely affect the above-mentioned special-status species, if they are nesting on or adjacent to the restoration site. If individuals of these species nest in the area during restoration activities, construction noise could cause them to abandon their nests or young. The breeding success of these species could be reduced if disturbances reduce the ability of adults to properly care for their eggs or young.

Implementation of Conservation Measure 1.11 would ensure that there is no take of fully protected species; therefore, impacts on nesting white-tailed kite, American peregrine falcon and California black rail would be less than significant and no additional mitigation for these species would be required.

Overall, implementation of the conservation strategy would benefit these special-status species through land preservation (Conservation Measure 1.1), habitat enhancement, restoration, and creation (Conservation Measure 2.1), as well as a variety of other measures such as reducing urban effects (Conservation Measure 1.9) and enhancing the prey base in grassland foraging habitat (Conservation

Measure 2.5). Nevertheless, temporary disturbance to nests of these special-status species may occur during habitat restoration or construction activities within the preserves. No mitigation would be required if these activities occur during the nonbreeding season (August 16 to February 28). However, if these activities occur during the breeding season, disturbance of nesting special-status birds would be minimized and avoided through implementation of the following mitigation measure. *This impact would be considered significant but could be mitigated to less-than-significant*.

> **Mitigation Measure BIO-2: Conduct preconstruction surveys to locate double crested cormorant, great blue heron, Northern harrier, California horned lark, loggerhead shrike, and Bell's sage sparrow nest sites or rookeries before construction is initiated and avoid breeding sites.** Mitigation Measure BIO-2 would also apply under Alternative 2.

Impact BIO-11. Potential disturbance or loss of non-covered special-status plant species and their habitat associated with the proposed Plan. As with Alternative 1, no restoration or other substantial ground disturbance that could affect non-covered special-status plant species would be expected to occur in chaparral, oak savanna, or oak woodland habitats under Alternative 2 since the objectives of the proposed Plan are to minimize impacts, and maintain and enhance these habitats (see conservation measures 2.4.1, 2.4.2, and 2.5.1). Operation and maintenance activities in these habitats would be expected to involve minor amounts of disturbance that is not likely to significantly impact non-covered special-status species. Vegetation management in preserves (i.e., grazing, prescribed burns) to enhance habitat and control exotics should benefit species associated with these habitats.

Restoration or construction in grassland, riparian, or other aquatic habitat under the proposed Plan could result in direct impacts to the same non-covered special-status plants associated with these habitats as under Alternative 1.

This impact would be significant but could be mitigated to less than significant.

> **Mitigation Measure BIO-3. Document special status plant populations and avoid or minimize impacts.** Mitigation Measure BIO-3 would also apply under Alternative 2.

Impact BIO-12: Potential Disturbance or Loss of Common Wildlife Species and Their Habitat Associated with Proposed Plan. Implementation of Alternative 2 could disturb common wildlife through modification of habitat or temporary displacement of common wildlife during construction activities in the same ways as in Alternative 1. The same factors as in Alternative 1 would minimize the potential for impacts on common wildlife species to *less than significant* under Alternative 2.

> **Mitigation Measures:** No mitigation measures would be required**.**

Alternative 3: Reduced Development Area

Impacts on Vegetation Communities

Impact BIO-1: Loss of Covered Habitats. Under Alternative 3, the extent of covered activities within the HCP/NCCP initial urban development area would be reduced; consequently, the impact on certain land cover types would be reduced. The impact on habitats would be reduced as follows.

- Annual grassland: Impact reduced by 480 acres; total impact of 2,053 acres.
- Alkali grassland: No change in impact; total impact of 115 acres.
- Oak savanna: No reduction in impact; total impact of 42 acres.
- Oak woodland: No reduction in impact; total impact of 21 acres.
- Chaparral/scrub habitat: No reduction in impact; total impact of 2 acres.
- Riparian woodland/scrub: No reduction in impact; total impact of 30 acres.
- Wetland, ponds, and sloughs: Impact reduced by 9 acres; total impact of 228 acres.
- Cropland and pasture: Impact reduced by 2,625 acres; total impact of 1,425 acres.

Conservation measures under Alternative 3 to address these habitats would be the same as those under Alternatives 1 and 2, including the minimum preserve acquisition requirements. As a result, Alternative 3 would provide for a proportionately larger amount of preservation of annual grassland, alkali grassland, wetland and sloughs, chaparral/scrub, and cropland relative to impacts than in Alternatives 1 or 2. Alternative 3 would adequately mitigate for impacts to these habitats from covered activities and as a result *this impact would be considered to be less than significant.*

Mitigation Measures: No mitigation measures would be required**.**

Impacts on Covered Special-Status Species

Impact BIO-8: Potential disturbance or loss of covered special-status plant and wildlife species and their habitat associated with proposed plan. Conservation measures under Alternative 3 to address impacts on covered special-status plant and wildlife species would be the same as those under Alternative 1 and 2, including the minimum preserve acquisition. As a result, Alternative 3 would provide adequate conservation and mitigation for impacts to these species from covered activities.

This impact would be considered to be less than significant.

Mitigation Measures: No mitigation measures would be required**.**

Impacts on Non-Covered Special-Status Species

Impact BIO-9: Potential disturbance or loss of valley elderberry longhorn beetle and their habitat associated with the proposed plan. The potential for impacts to valley elderberry longhorn beetle under Alternative 3 may be slightly lower than Alternative 1 due to the reduced impacts to cropland and pasture in the far eastern portion of the County (Zone 6) where the longhorn beetle is found. Nevertheless, disturbance to elderberry shrubs may occur during habitat restoration activities for covered species and during on-going management activities under Alternative 3. *This impact would be considered significant but could be mitigated to less than significant*.

> **Mitigation Measure BIO-1: Conduct surveys for elderberry shrubs and avoid during restoration activities in suitable habitat.** Mitigation Measure BIO-1 would also apply under Alternative 3.

Impact BIO-10. Temporary disturbance to nesting habitat for double crested cormorant, great blue heron, Northern harrier, white-tailed kite, American peregrine falcon, California black rail, California horned lark, loggerhead shrike, and Bell's sage sparrow during restoration activities. As described under Alternative 1, noise, vibration, visual, and proximity related disturbances associated with restoration activities could adversely affect the above-mentioned special-status species, if they are nesting on or adjacent to the restoration site.

Implementation of Conservation Measure 1.11 would ensure that there is no take of fully protected species; therefore, impacts on nesting white-tailed kite, American peregrine falcon and California black rail would be less than significant and no additional mitigation for these species would be required.

Overall, implementation of the conservation strategy would benefit these special status species through land preservation (Conservation Measure 1.1), habitat enhancement, restoration, and creation (Conservation Measure 2.1), as well as a variety of other measures such as reducing urban effects (Conservation Measure 1.9) and enhancing the prey base in grassland foraging habitat (Conservation Measure 2.5). Nevertheless, temporary disturbance to nests of these special status species may occur during habitat restoration or construction activities within the preserves. No mitigation is required if these activities occur during the nonbreeding season (August 16 to February 28). However, if these activities occur during the breeding season, disturbance of nesting special-status birds would be minimized and avoided through implementation of the following mitigation measure. *This impact would be considered significant but could be mitigated to less than significant*.

> **Mitigation Measure BIO-2: Conduct preconstruction surveys to locate double crested cormorant, great blue heron, Northern harrier, California horned lark, loggerhead shrike, and Bell's sage sparrow nest sites or rookeries before construction is initiated and avoid breeding sites.** Mitigation Measure BIO-3 would apply to Alternative 3.

Impact BIO-11. Potential disturbance or loss of non-covered special-status plant species and their habitat associated with proposed plan. As described under Alternative 1, restoration or construction in grassland, riparian, or other aquatic habitat under the proposed Plan could result in direct impacts to non-covered special status species associated with these habitats, including fragrant fritillary, rock sanicle, eel-grass pondweed, rayless ragwort, and most-beautiful jewel flower. These activities could result in direct mortality, a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

This impact is significant but could be mitigated to less than significant.

> **Mitigation Measure BIO-3. Document special status plant populations and avoid or minimize impacts.** Mitigation Measure BIO-3 would apply to Alternative 3.

Impact BIO-12: Potential disturbance or loss of common wildlife species and their habitat associated with proposed plan. Implementation of Alternative 3 would result in impacts to common wildlife species comparable to that described above for Alternative 1.

> **Mitigation Measures:** No mitigation measures would be required**.**

Alternative 4: No Project/No Action

Under this alternative, the proposed HCP/NCCP would not be implemented, and the associated take permits would not be authorized. It is anticipated that development within the HCP/NCCP urban development area and development of rural infrastructure projects would continue; however, project approvals would be handled on a case-by-case basis. Project applicants without a federal nexus (i.e., Section 404 Permit) would be required to obtain individual Section 10 permits by preparing project-level HCPs. In the absence of a coordinated conservation program, mitigation would be less likely to be effective on both the small scale and the large scale.

While project-by-project mitigation may be effective at targeting and preserving high-value habitat, the creation of a large number of smaller mitigation sites may result in ineffective species conservation across the landscape. Smaller preserve areas may fail to meet preserve design standards to maximize preserve size, incorporate environmental gradients, minimize edges, and preserve habitat linkages. This could particularly affect species such as the San Joaquin kit fox that require large areas of habitat areas or require preservation of linkages between areas of suitable habitat.

Independent mitigation could further reduce the success of mitigation, which would likely reduce the benefits to special-status species. Under the No Project/No Action alternative, there would be no single entity responsible to track mitigation in a coordinated manner and to ensure its success over time. Project

applicants could be able to partially or perhaps even fully avoid mitigation responsibilities, and the quality of mitigation sites may be compromised. Furthermore, the absence of a comprehensive monitoring and adaptive management program would create less certainty in the long-term success of mitigation sites.

4.3 Land Use and Housing

4.3.1 Methodology and Significance Criteria

Impacts related to land use and housing were assessed on the basis of the proposed HCP/NCCP, consultation with County planning staff, and review of applicable documents such as the cities' and County's general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the proposed Plan would have a significant impact on land use.

The proposed Plan would have a significant impact if it causes any of the following results.

- Physically divides an established community.
- Creates land uses substantially incompatible with existing land uses within or adjacent to the inventory area.
- Substantial conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Plan (including, but not limited to general plans or zoning ordinances) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflicts with other applicable HCPs or NCCPs.
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on land use associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. Land use impact analysis and mitigation contained in previous CEQA documents are incorporated by reference. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each participating jurisdiction determined that programmatic impacts on land use would be mitigated to a less-

than-significant level through implementation of general plan policies and the adoption of identified mitigation measures, except the City of Brentwood. The City of Brentwood has determined that there is a significant and unavoidable impact resulting from inconsistency between the City's General Plan and the County's ULL. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

It should be noted that potential impacts related to inducing housing demand (from population growth) and physical displacement of people were analyzed and dismissed from further analysis for the reasons disclosed in Chapter 3, Section 3.1.1 of this document.

4.3.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan

Impact LU-1: Physically divide an established community through acquisition and preservation of lands. The proposed HCP/NCCP would provide incidental take coverage for growth and development within the established cities and in areas necessary for development of supporting infrastructure, in exchange for conservation of key areas of habitat throughout the rural parts of East Contra Costa County. Establishment of preserves under the proposed Plan would occur within the six Zones. Zones 1–5 encompass all unprotected and undeveloped land in the inventory area, most of which occurs outside the current ULL. Zone 6 encompasses all cultivated agriculture outside the current ULL. These zones contain scattered residential uses, such as ranchettes. Additionally, the unincorporated communities of Byron, Knightsen, and Bay Point are located within the Zones. Although lands surrounding these communities are proposed for preserve acquisition, land within the communities would not be acquired. Acquisition of lands for conservation purposes, preserve development, potential recreational uses, and ongoing preserve maintenance activities would not physically divide any established communities in the inventory area.

The impact on established communities in the inventory area would be considered to be less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-2: Incompatibility of preserves with existing land uses. Creation of a system of preserves under Conservation Measure 1.1 could result in potential incompatibilities with surrounding land uses. Existing land uses in Zones 1–5 include grazing and other agricultural production, while the predominant existing use in Zone 6 is cultivated agriculture.

Establishment of preserves in Zones 1–5 would result in minor land use changes. While lands would remain undeveloped, they would be managed primarily for covered species protection and enhancement, with some passive recreational use allowed. In accordance with Conservation Measure 1.2, grazing is expected to continue as a management tool on many of the preserve lands that are acquired in Zones 1–5. If necessary, grazing practices may be modified and brought into compliance with the proposed HCP/NCCP's conservation strategy and adaptive management framework. Such modifications could include shifting grazing regimes from year-round to seasonal or changes in grazing intensity, duration, and location.

In accordance with Conservation Measure 1.1, preserve lands in Zone 6 would be acquired through purchase of conservation easements that would provide for continued agricultural use of the land. Such easements would help achieve the biological goals and objectives of the proposed Plan while allowing continuation of current agricultural use.

Conservation Measure 1.3 further describes the need for agricultural management plans for preserved croplands and pasturelands. These plans would describe the agricultural practices that would be undertaken to ensure the land's suitability for covered species. Conservation Measure 1.3 also indicates that habitat maintenance and enhancement measures would be compatible with maintaining the ongoing economic viability of agricultural use.

The impact on existing land uses between the initial urban development area and the maximum urban development area would be comparable, although additional preservation under the latter would result in slightly greater potential for impact on surrounding land uses. Measures included in the proposed HCP/NCCP to reduce incompatibilities with surrounding land uses would be effective at reducing any impacts on additional land acquisitions.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-3: Incompatibility of preserves with adjacent land uses. As shown in Figure 3-2, a variety of land uses surround Zones 1–6; these include parks and open space, agriculture, and developed uses that range from rural residential to industrial. Because of the need to ensure adequate protection of species and habitat, and because of the sensitivity of acquiring preserve lands in areas of active use, the proposed Plan includes a wide range of measures to eliminate or minimize incompatibility with surrounding uses.

The proposed HCP/NCCP preserve design strategy would follow principles of conservation biology that seek to avoid biological incompatibilities between adjacent uses, including maximizing preserve size, minimizing the number of preserves, limiting edge effects, and buffering urban impacts. With certain provisions and restrictions, agricultural lands within 1.0 mile of the preserve boundary would also be eligible for take coverage during the course of routine agricultural activities and during the permit term of the HCP/NCCP.

Conservation Measure 1.9 would apply to preserves that occur at the edge of the HCP/NCCP urban development area or adjacent to areas with moderate or high priorities for land acquisition. It includes multiple design elements that would be considered for the urban-wildland interface to reduce potential incompatibilities. Specific elements include buffers, fencing, trails, minor roads with permanent wildlife barriers, access restrictions, and noninvasive and fire-resistant landscaping.

The urban-wildland interface is defined as a narrow zone (<100 feet) between urban development and preserve areas. The design guidelines in HCP/NCCP Appendix E recognize that it is not practical to retrofit existing development that borders planned preserve areas, but it is possible to incorporate interface design features into new development. The interface design features would reduce indirect effects of development on covered species and habitats in the preserves, and also reduce the entry of species into developed areas, reducing potential impact of the adjacent preserve on adjacent properties. The design guidelines also allow that the width of the buffer zone can be reduced if the indirect effects of adjacent development are reduced through good design practices. Thus, it is unlikely that development design cannot accommodate appropriate site-specific interface design requirements and also achieve development in accordance with land use designations.

As one example, it is common local practice to provide for firebreak areas and sometimes fencing between residential development and wildland areas for safety reasons alone. Incorporation of the interface design requirements to be cognizant of mitigation for indirect species effects may change the specific techniques used in the interface, but not substantially reduce the available land for development.

Conservation Measure 1.8 would provide for buffer zones between preserves and adjacent developed or agricultural lands to "eliminate or minimize the potential adverse effects of adjacent urban and agricultural uses on sensitive preserved, enhanced, restored, and created natural communities and covered species habitats."

Conservation Measure 1.5 would provide that as part of the recreation plan developed for preserve lands, new trails will be sited to minimize impacts on sensitive species and communities, including covered species, and disturbance to adjacent landowners and land uses.

These conservation measures would be considered effective means of reducing potential land use incompatibility between the preserves and adjacent uses. Because these measures are not dependant on the acreage acquired, the level of impact would be similar under both the initial permit area and the maximum final permit area scenarios.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-4: Potential inconsistencies between preserve land acquisition and local land use plans and policies. Establishment of preserves under the proposed HCP/NCCP is the principal conservation activity that would result in changed land use and potential inconsistencies with local plans.

Nearly all land and easement acquisition in unincorporated parts of the county would be in areas that are designated as Agricultural Lands (AL). Preserve lands would be managed for the benefit of covered species and habitat; however, agricultural use of much of the preserve land is anticipated to continue. Some acquisitions are proposed in unincorporated areas that are designated as Agricultural Core (AC) but such acquisitions of land or easements (easements are more likely) would allow for continued agricultural use, and would be consistent with plans or policies.

The proposed HCP/NCCP includes undeveloped areas within the current County ULL in Acquisition Analysis Zones if these areas have potential conservation value and are connected to undeveloped lands outside the HCP/NCCP urban development area. The Zones also include lands that are within current city boundaries and would be subject to the plans and policies of that city's general plan, as well as areas that are within the current ULL and are considered in a city's general plan. In addition, the Zones include areas that are outside the County ULL but that are given planning and policy consideration in city general plans and may be included in the recent City-adopted ULLs in Pittsburg and Antioch. HCP/NCCP acquisition of lands in these areas could conflict with a city's general plan policies (refer to Figure 4-1) as discussed below.

Zones that extend into current city boundaries include the following.

City of Antioch. Subzone 2h overlaps with the southwest portion of the city of Antioch. The City of Antioch General Plan's Sand Creek Focus Area overlaps at its western third with approximately three quarters of the proposed HCP/NCCP Subzone 2h. The General Plan designates this overlapping area as Open Space (about three quarters of the overlapping area), Hillside and Estate Residential (about one quarter of the overlapping area), and Golf Course/Senior Housing/Open Space (a minor portion of the overlapping area).

Subzone 2h (approximately 1,200 acres in size) is a high priority area for land acquisition under the proposed HCP/NCCP. The HCP/NCCP has a goal of 600 acres of preservation (see HCP/NCCP Chapter 5) in this subzone, a portion of which would need to be in the Sand Creek Focus Area. The HCP/NCCP also has a goal of 2,400 acres of preservation in subzones 2e, 2f, and 2h combined. According to Conservation Measure 1.1, land acquired in Subzone 2h would target known occurrences of Mount Diablo manzanita and Brewer's dwarf flax, and would include suitable habitat for silvery legless lizard. Additional acquisitions are also proposed in this area to support foraging and movement of San Joaquin kit fox. Thus, it is possible that 500 to 600 of the area of overlap of subzone 2h in the Sand Creek Focus Area may be acquired. There is sufficient flexibility in the requirements of the proposed HCP/NCCP

within subzone 2h and in the descriptions of land use designations under the Antioch General Plan that the goals and objectives of the HCP/NCCP and the General Plan could be met overall such that there would not be a fundamental incompatibility.

Subzone 2g is a low priority area for preservation that overlaps with Antioch's Sand Creek Focus Area. There are no specific requirements for acquisition in subzone 2b. All land in the area of overlap is designated by the City as Open Space; therefore no conflict in proposed land use exists.

Subzone 2i is a low priority area for preservation. This subzone overlaps with about two thirds of the Sand Creek Focus Area. There are no specific acquisition requirements for subzone 2i. There is sufficient land in Subzone 2i outside the Antioch city limits and sufficient General Plan identification of open space within the area of overlap to achieve the preservation goals for Subzone 2i without a conflict in land use.

Subzone 1d is a low priority area for preservation, a portion of which is within the City of Antioch. This subzone is designated in the Antioch General Plan as Estate Residential. The HCP/NCCP proposes acquisition of 25% (474 acres) of this subzone, which is nearly 1,900 acres in size, leaving ample room for development opportunities. The proposed HCP/NCCP can be implemented without conflicting with the Antioch's designated land use in this subzone.

City of Pittsburg. Subzone 1e overlaps with a portion of the Southwest Hills subarea of the city of Pittsburg. The City of Pittsburg General Plan designates this area for low-density residential (1–7 units/acre), hillside low-density residential (<5 units/acre), and open space.

Subzone 1e is a low priority acquisition zone. Conservation Measure 1.1 states that no land acquisition requirement is given for Subzone 1e, but lands may be acquired in this area if they are contiguous with Subzone 1a. Because no specific land acquisition is targeted for this area, and because the requirement for contiguous acquisitions would minimize potential conflicts with planned residential uses, preservation under the proposed HCP/NCCP would not conflict with the intent of the City of Pittsburg General Plan for this area.

Cities of Oakley and Brentwood. The proposed HCP/NCCP includes the acquisition of land for enhancement and restoration of riparian habitat along Marsh Creek within the Cities of Oakley and Brentwood.

The City of Oakley General Plan (2002) includes the policy "6.3.7 Preserve and expand stream corridors in Oakley, restoring natural vegetation where feasible" and the programs "6.3.G Evaluate the feasibility of expanding drainage easements along waterways and modifying banks and/or levees to increase the width of stream corridors" and "6.3.H Investigate and implement as appropriate City Zoning regulations requiring

expanded setbacks, and land dedications along waterways to allow expansion and enhancement of waterways." The City's policy and programs support the planned efforts under the proposed HCP/NCCP to acquire lands along Marsh Creek for enhancement and restoration of riparian habitat and therefore the HCP/NCCP would not be expected to conflict with the General Plan.

The City of Brentwood General Plan (1993) includes the general policy "7.2 Preserve vegetation: preserve vegetation and associated wildlife habitat in the Brentwood Planning Area" with the specific policy "7.2.5 Restoration: restore riparian habitat values" and general policy "7.3 Waterways: maintain and improve wildlife and plant values along waterways and within flood control facilities" with the specific policies "7.3.1 Channel restoration: restore creek channels to their natural condition" and "7.3.2 Bank stabilization: use natural techniques, including restoration of riparian vegetation to stabilize banks." The City's policies are consistent with the proposed HCP/NCCP goals acquire lands along Marsh Creek for enhancement and restoration of riparian habitat.

Acquisition of lands within current city boundaries, in accordance with the proposed HCP/NCCP, would not result in any inconsistencies with the plans and policies of the City of Pittsburg or the City of Antioch.

Acquisition of preserve lands within the ULL or within planned areas outside the ULL may also conflict with the policy and planning objectives that have been set forth in the city general plans. Although city general plan polices are not binding in these unincorporated areas, this policy guidance has been established to guide the efficient long-term growth and expansion of the cities. Because the proposed HCP/NCCP permit term would extend beyond the planning horizon of the local general plans, the consistency of the HCP/NCCP conservation objectives with this long-term planning is considered here. Areas where the proposed HCP/NCCP Zones would overlap with the unincorporated planning area are described in Table 4.3-1. The Contra Costa County General Plan currently applies in all of these unincorporated areas. Land acquisition priorities in the Subzones listed in Table 4.3-1 would be consistent with the County General Plan.

Table 4.3-1. Proposed City Planning Areas outside the County ULL and Consistency with Acquisition Priorities of the Proposed Plan

City	Proposed City Planning Area outside City Limits	City General Plan Prescription	Subzone/ Acquisition Priority	Acquisition Requirement	Potential Compatibility Conflict
Antioch	Roddy Ranch Area	Single-family residential (1,500 units), multifamily residential (200 units), and commercial (425,000 square feet).	2g/low 2f/high 2h/high	1,000 acres of annual grassland, known occurrences of big tarplant, round-leaved filaree, and land for kit fox corridor in 2f. Lands within Horse, Lone Tree, and Deer Valleys in 2e, 2f and 2h for kit fox movement corridors. No specific requirements for 2g.	High
Antioch	Special Planning Area "R"	Single-family residential (1,215 units), multifamily residential (135 units), and commercial (175,000 square feet).	2i/low 2g/low	No specific requirements in either subzone.	Low
Brentwood	Special Planning Area "G"	Residential (190–212 acres), commercial (8–30 acres), and open space (150 acres).	2e/high 2f/high	1,800 acres of annual grassland in 2e and 2f. Lands within Horse, Lone Tree, and Deer Valleys in 2e and 2f for kit fox movement corridors.	Moderate
Brentwood	Special Planning Area "H"	Residential, commercial, and open space.	2e/high	1,000 acres of annual grassland. Land within Briones, Horse, Lone Tree, and Deer Valleys for kit fox movement corridors (2e, 2f, 2h).	Moderate
Brentwood	Special Planning Area "J"	Approved development (The Vineyards at Marsh Creek project) and the new Cowell Ranch State Park	2i/low	No specific acquisition requirements.	Low
Pittsburg	Southwest Hills Subarea	Hillside Low-Density Residential (<5 units/acre), park, and open space.	1a/high & low	85 acres of annual grassland.	Moderate
Pittsburg	Woodland Subarea	Hillside Low-Density Residential.	1d/low 1c/high	1,450 acres of annual grassland in Subzones 1c and 1b.	Low
Pittsburg	Buchanan Subarea	Hillside Low-Density Residential	1d/low	474 acres of Subzone 1d.	Low
Clayton	Marsh Creek Area	Mixed use	3b/low	No specific acquisition requirements.	Low

Although policies established in the current general plans are not applicable to these unincorporated lands, they provide a good indication of areas where future

annexations and ULL adjustments may be proposed. The acquisition of land in Subzones 1a, 2e, and 2f would have a moderate or high conflict with the long-range development objectives of the Cities of Pittsburg, Antioch or Brentwood for areas outside the current ULL. Some of these areas are within the recent City-adopted ULLs in Pittsburg and Antioch. Ultimately, any future adjustments to the County ULL would be required to be compatible with any HCP/NCCP preservation and to adequately mitigate any significant impacts on these preserves, including impacts on the County's, cities', and Implementing Entity's ability to successfully implement the proposed HCP/NCCP.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-5: Potential conflicts of preserves with applicable rural land use designations. The majority of lands in Zones 1–6 are outside the ULL and are designated as Agricultural Lands or Agricultural Core in the Contra Costa County General Plan Land Use Element. Zones 1–5, where the primary use is livestock grazing, are predominantly designated as AL. The Contra Costa County General Plan indicates that while the AL designation is intended to be descriptive of the predominant land-intensive agricultural uses in these areas, other uses such as open space and other non-urban uses are allowed. As discussed above (Impact LU-2), although management of preserves in areas where livestock grazing occurs would change, grazing is expected to continue on most lands. Preserve acquisition in Zone 6 would not conflict with the AC and AL designations in this area because lands would be acquired in easement to ensure the maintenance of economically viable agricultural operations in the zone.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-6: Potential conflicts with existing HCPs. The proposed HCP/NCCP inventory area is bordered by San Joaquin County in the east and Alameda County in the south. San Joaquin County has been purchasing conservation easements in the western portion of that county since the *Multi-Species Habitat Conservation and Open Space Plan* was completed in 2001. Although there is not an approved or in-process conservation plan to the south of the inventory area in Alameda County, several agencies (City of Livermore, CDFG, and the Altamont Landfill Open Space Committee) are actively acquiring land in fee title or conservation easements for open space and conservation purposes in Alameda County near Zone 5.

The Proposed Plan does not propose any conservation practices within the jurisdictions of San Joaquin or Alameda Counties that could conflict with the conservation objectives of agencies in those counties. The proposed Plan acknowledges that there is an opportunity to enhance habitat for covered species by linking conserved lands across the San Joaquin River or by locating preserves in close proximity to lands acquired under the *San Joaquin County Multi-Species*

Habitat Conservation and Open Space Plan. The proposed HCP/NCCP also acknowledges that coordinated actions by the HCP/NCCP Implementing Entity and the land acquisition agencies operating in Alameda County would enhance the effectiveness of the HCP/NCCP preserves.

The proposed Plan would not conflict with the biological goals and objectives or other conservation planning occurring in San Joaquin or Alameda County. Implementation of the proposed Plan may have a beneficial impact on land use by coordinating acquisition with the *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan* and conservation in Alameda County, and thereby avoiding potential land use incompatibilities.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-7: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Pittsburg - Pittsburg's current strategy to meet its housing needs is based primarily on residential development within the current city limits.

Within the City of Pittsburg, the HCP/NCCP identifies portions of the western part of the City as low acquisition priority within subzone 1e. Subzone 1e includes about 633 acres with a maximum buildout potential of 3,705 potential units. No specific acquisition minimum requirements are included in the HCP/NCCP for this subzone. Only limited acquisition is actually expected within low priority acquisition areas overall. At this time, the amount of acquisition within subzone 1e is expected to be very limited. With such limited expected acquisition, the HCP/NCCP is likely to have little to no effect in the short and medium-term on the ability of the City of Pittsburgh to fulfill its RDND allocations.

The City of Pittsburg concluded in its 2004 Housing Element (p. 13-76) "Pittsburg contains adequate land within the City limits to accommodate housing objectives." The City is a participant in the HCPA and has not identified that the HCP/NCCP will be an obstacle to meeting its current or future RHND needs.

In the long-term, acquisitions may occur within areas currently designated for future residential development (in the City General Plan) outside the city limits (but within the recent City-adopted ULL) that may limit the future ability of the City to meet residential allocations from these specific areas. HCP/NCCP acquisition zones overlap with two specific areas of concern outside the current city limits (but within the newly adopted City ULL: the Faria property in subzone 1a and the Montreux et al property in subzone 1d.

- The Faria South property is approximately 370 acres, is within the Southwest Hills planning area, and is designated for Hillside low-density residential, park and open space. The HCP/NCCP designated less than 25% of this property (roughly 85 acres) as high-priority and the remainder is designated

as low priority. If a portion of the property is acquired for the HCP/NCCP, the City will not have the opportunity to meet its future RHND allocation on these 85 acres and will need to seek elsewhere to provide for residential needs. Presuming all of these 85 acres could otherwise be developed a maximum density (for hillside low-density residential = < 5 dus/acre), the opportunity lost can be estimated as < 425 units. Actual amounts are likely to be less than this theoretical maximum as slope, drainage, and other site considerations are not included in this estimate.

- The Montreux et al. property is outside the city limits, inside the recently adopted City ULL, and within subzone area 1d, a HCP/NCCP low priority acquisition area. Current estimates are that between 25% and 30% (500 to 600 acres) may be acquired in this subzone for the HCP/NCCP. Given the size of area 1d (1,900 acres), there would remain substantial acreage (> 1,300 acres) within area 1d for future residential development even with limited HCP/NCCP acquisition.

Given the ample residential opportunities identified by the City within city limits and the opportunities outside city limits within low-priority acquisition areas, the HCP/NCCP is not expected to result in short, medium or long-term impediments to meet housing allocations overall for the City of Pittsburg. For this reason, this is a less than significant housing impact.

Antioch. The city of Antioch concluded in its General Plan that Antioch "has adequate land capacity to meet is share of regional housing growth through and beyond 2006".

The HCP/NCCP includes acquisition areas that overlap with the Sand Creek Focus Area (within the city limits), and the Roddy Ranch and the Ginochio property (outside the city limits). Each of these areas is analyzed in respect to residential development capacity and the impact of the HCP/NCCP.

The Sand Creek Focus Area encompasses approximately 2,700 acres within the city. The Sand Creek Specific Plan designates this area for a mix of residential, commercial, recreational (golf course), and open space. The focus area overlaps with the high priority acquisition subzone 2h and the low priority subzone 2i.

- Subzone 2h (1,200 acres) overlaps with the western third of the focus area. The overlapping area (about 900 acres) is designated approximately three-quarters open space, one quarter Hillside and Estate Residential, and a minor portion as golf course/senior housing/open space (City of Antioch 2003). Subzone 2h is a high priority area for land acquisition under the proposed HCP/NCCP. The HCP/NCCP has a goal of 600 acres of preservation in this subzone (see HCP/NCCP Chapter 5), a portion of which would need to be in the Sand Creek Focus Area. The HCP/NCCP also has a goal as to preserve 2,400 acres in subzones 2e, 2f, and 2h combined. Thus, it is possible that 500 to 600 acres of the area of overlap of subzone 2h in the Sand Creek Focus Area may ultimately be acquired. If there is acquisition within the one-quarter of the overlapping area designated for residential use, there could be a potential displacement of residential use (an assumed maximum of 150 acres of residentially-designated use) to other parts of Antioch.

However, given the flexibility of the HCP/NCCP in meeting its goals within this subzone and the limited area of overlap, overall the potential for this displacement to actually occur is likely to be low.

- Subzone 2i is approximately 3,200 acres and includes the eastern two-thirds of the Sand Creek Focus Area (about 1,800 acres). Acquisition in this area is likely to be limited as there is no minimum acquisition requirement for subzone 2i. Given that the RMP designates part of the overlap for open space, and the subzone contains substantial areas outside the focus area, there is ample flexibility in preserve assembly to avoid substantial conflict for the eastern two-thirds of the Sand Creek Focus Area.
- Within the Sand Creek Focus Area, if up to 600 acres of the portion within subzone 2h within the focus area is ultimately acquired, approximately 450 acres could overlap with designated open space and at the most perhaps 150 acres may conflict with areas designated for residential use. If this were to occur, the City would lose the opportunity within the 150 acres for hillside and estate residential. The exact number of units is not estimated; however on a gross basis, loss of 150 acres out of an overall opportunity area of 15,000 acres (City General Plan Table 9.U) would represent a reduction of about 1 percent of land designated for Antioch residential development.

Roddy Ranch and the Ginochio property are located outside the Antioch city limits

- The Roddy Ranch area is located outside the City and encompasses more than 2,100 acres and was previously proposed as a master planned development consisting of single family residential (1,500 units), multifamily residential (200 units), and commercial (425,000 square feet). Approximately 1100 acres within the Roddy Ranch have deeded development rights, including the golf course in the center of the ranch. The November 2005 ballot measure adopting the City's new ULL reduced residential development in this area from 1,700 units to 700 units. The Roddy Ranch area is within high-priority subzones 2f and 2h and low-priority subzone 2g. Only the northern portion of the Roddy Ranch is within the new ULL. Approximately 500 acres of the Roddy Ranch are within the new ULL and not deed restricted. The developable portion of the Roddy Ranch within the new ULL is within high priority acquisition subzone 2h (300 acres) and low priority subzone 2g (200 acres), reflecting a reduction in the amount of high priority designation in this portion of the Ranch since the Draft HCP/NCCP. Likewise, due to the adoption of the Antioch ULL, Chapter 5 in the Final HCP/NCCP has been revised to indicate that "conservation of narrower movement routes will be pursued through the western and central portions of Horse Valley through Subzone 2h (west of and through the Roddy Ranch Golf Course) to connect to larger proposed conservation areas in Lone Tree Valley". It is therefore possible (though unlikely) that 300 acres of developable land within the Roddy Ranch Ranch and the Antioch ULL would acquired by the HCP/NCCP, representing a reduction of about 2 percent of land designated for Antioch residential development.
- The Ginochio property (also referred to as Special Planning Area "R") encompasses approximately 1,070 acres and has been proposed as a master

planned development of single family residential (1,215 units), multifamily residential (135 units), and commercial (175,000 square feet). The Ginochio property is within the low priority subzones 2g and 2i. The conflict between residential development and preserve acquisition is considered low given the limited level of likely acquisition within this subzone.

Overall, combining the estimates above for the Sand Creek Focus Area (up to 150 acres, Roddy Ranch (up to 300 acres), and the Ginochio Property (no assumed acquisition), HCP/NCCP acquisition could eliminate up to 450 acres of currently residentially designated land out of 15,000 acres (assuming elimination of 1,000 acres due to the November 2005 ballot). This would represent a loss of about 3% residential development opportunity overall. Given the extensive remaining areas (~14,000 acres) available for residential development identified by the City in its General Plan, the compatibility conflicts identified are not considered to be an ultimate impediment to the City meeting its current nor its future regional housing allocations. Given that there is a potential for acquisition to occur within areas already designated open space (such as within the western part of the Sand Creek Focus Area) and the flexibility of preserve design, the actual level of conflict is likely to be lower than the conservative estimates presented above. For these reasons and given the overall amount of available residentially-designated lands that are not affected by the Plan, this is considered a less than significant housing impact for the City of Antioch.

Brentwood - Within the Brentwood city limits and County ULL, the only HCP/NCCP acquisition zone is subzone 2i, which is a low-priority area. Only a limited part of the subzone overall (which includes unincorporated land and area within the City of Antioch) is expected to be acquired. This subzone overlaps with the portion of Special Planning Area "J" that is west of the planned State Route 4 Bypass. This area already contains approved development (the Vineyards and Cowell Ranch State Park) has already been substantially planned, thus future limited acquisitions would not likely result in any effect on land use compatibility or residential buildout.

Special Planning Areas "R" is located mostly within low-priority subzone 2i with a small portion possibly in low-priority subzone 2g. The City has no current planning or land use designations for this area. For the same reasons noted above, limited acquisition in this area is not likely to hinder residential goals if proposed for this site.

However, potential future land use compatibility conflicts may exist in Special Planning Areas "G" and "H" (located outside the city and the ULL) because they are located with high-priority HCP/NCCP acquisition areas. SPA "G" is designated for residential use (195 acres; max of 195 dwelling units), limited commercial use (25 acres), and open space (150 acres) of open space and is located within subzones 2e and 2f. SPA "H is designated for residential (192 acres, max. of 384 dwelling units), public facilities (90 acres) , limited commercial (10 acres) and open space (158 acres) and is located within subzone 2e. The Brentwood Housing Element does not identify residential allocations outside of the City limits in terms of their potential to contribute to meeting RHND requirements. If substantial portions of SPA "G" and "H" are acquired

for the HCP/NCCP, there could be an opportunity loss of up to 353 acres of residential use (and up to 579 units). In this case, Brentwood residential development would need to occur within the City/ULL and in SPA "R".

Given that at present, the City has ample acreage within the City to accommodate short-term and mid-term growth residential growth (> 3,700 unit potential beyond 2007 requirements) and SPA "R" will be available for future growth, the land use incompatibility is identified as a less than significant housing impact for the City of Brentwood.

Oakley - The only acquisition area within the City of Oakley is low-priority subzone 6a. The only preservation requirements for this subzone (which is over 11,000 acres in size) is for 250 to 400 acres of cropland or pasture that are to be acquired in subzones 6a, 6b, 6c, or 6f along Kellogg Creek, Marsh Creek or adjacent to Dutch Slough.

The City of Oakley has a RHND for 1999 - 2006 of 1,208 units, all of which are designated to be met within the City's jurisdiction (e.g. city limits) and none within its sphere of influence. As of 2001, the City identified about 1,656 acres with a residential buildout of 7,224 units in the City. (City of Oakley, Housing Element, 2002).

These numbers demonstrate that there is ample available acreage and residential capacity to meet current and future RHND requirements in the City of Oakley. Limited acquisition along creeks or near Dutch Slough within the City is highly unlikely to result in a substantial conflict between the HCP/NCCP and the City's land use plan and ability to meet residential needs.

Conclusion regarding housing impacts - The HCP/NCCP is not expected to be a substantial impediment to meeting current or future residential development needs, including affordable housing allocations. All of the local jurisdictions (Pittsburg, Antioch, Brentwood, and Oakley) have identified that they have sufficient residentially-designated land within their current city limits to meet their current and future regional housing needs, including affordable housing. As noted above, in the long-term there are several compatibility conflicts between areas outside the city limits that are designated high-priority HCP/NCCP acquisition areas and are designated for residential use. However, most of these areas are located in the foothills, and are designated for low-density housing. These areas are likely to provide market rate housing, not low-income housing which is usually provided within city limits in areas designated for medium and high-density residential development. Overall, given the local jurisdiction identification of substantial available acreage for residential development and that the limited areas of conflict primarily concern market-rate housing, the HCP/NCCP is not likely to result in a disproportionate impact on low-income housing utilized by economically disadvantaged residents of eastern county. In the long-term, Pittsburg, Antioch, and Brentwood may need to adjust the location of future residential development depending on where HCP/NCCP acquisitions actually occur, but given the ample opportunity lands that are identified in the local jurisdictional housing elements and the flexibility in the preserve system

assembly, there is no substantial evidence that the HCP/NCCP will hinder the ability of the local jurisdictions to meet their regional housing allocations.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 2: Conservation Strategy B

Impact LU-1: Physically divide an established community through acquisition and preservation of lands. Impacts on established communities under Alternative 2 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-2: Incompatibility of preserves with existing land uses. Impacts on existing land uses under Alternative 2 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-3: Incompatibility of preserves with adjacent land uses. Impacts on adjacent land uses under Alternative 2 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-4: Potential inconsistencies between preserve land acquisition and local land use plans and policies. Impacts on local plans and policies under Alternative 2 would be slightly different compared to Alternative 1. Land acquisition requirements under Alternative 2 in Subzone 1a are greater than under Alternative 1 (367 acres vs. 85 acres) resulting in a slightly greater conflict with proposed plans for development in Pittsburg in the Southwest Hills Subarea outside the County ULL (the overall compatibility conflict is still considered moderate). Land acquisition requirements in Subzones 1b and 1c would be lower in Alternative 2 than in Alternative 1, resulting in a reduced conflict between the HCP and land use plans in Pittsburg's Woodland Subarea (the overall compatibility conflict is the same for this plan, low). There are no other differences in potential land use compatibility between Alternative 2 and Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-5: Potential conflicts of preserves with applicable land use designations. Impacts on applicable land use designations under Alternative 2 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-6: Potential conflicts with existing habitat conservation plans. Impacts on existing HCPs under Alternative 2 would be comparable to those under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-7: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Pittsburg - Alternative 2 would include 280 acres more high-priority acquisition in subzone 1a than Alternative 1. This would increase the potential displacement of future residential development, but given the ample residential opportunities identified by the City within city limits and the opportunities outside city limits within low-priority acquisition areas, this alternative would also not be expected to result in short, medium or long-term impediments to meet housing allocations overall for the City of Pittsburg. For this reason, this is a less than significant housing impact.

Antioch - Alternative 2 does not change acquisition priorities relative to areas within the City limits or within areas of future potential growth in the City-adopted ULL, thus its impacts are same as Alternative 1. As disclosed above, reason, this is considered a less than significant housing impact for the City of Antioch.

Brentwood - Alternative 2 does not change acquisition priorities relative to areas within the City limits or within areas of future potential growth outside the City, thus its impacts are same as Alternative 1. As disclosed above, reason, this is considered a less than significant housing impact for the City of Brentwood.

Oakley - Alternative 2 would acquire more cropland/pasture than Alternative 1 in Zone 6. However, acquisition areas would be mostly outside of city limits and there are adequate residential opportunities within the city limits and in other remaining low-priority acquisition areas outside city limits, such that this alternative is considered to have a less than significant housing impact for the City of Oakley.

Conclusion regarding housing impacts for Plan - This alternative would not hinder short or medium-term ability of the local cities to meet their regional housing needs. In the long-term, Pittsburg, Antioch, and Brentwood may need to adjust the location of future residential development depending on where HCP/NCCP acquisitions actually occur, but given the ample opportunity lands that are identified in the local jurisdictional housing elements and the flexibility in the preserve system assembly, there is no substantial evidence that the HCP/NCCP will hinder the ability of the local jurisdictions to meet their regional housing allocations.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development Area

Impact LU-1: Physically divide an established community through acquisition and preservation of lands. Impacts on established communities under Alternative 3 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-2: Incompatibility of preserves with existing land uses. Impacts on existing land uses under Alternative 3 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-3: Incompatibility of preserves with adjacent land uses. Impacts on adjacent land uses under Alternative 3 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-4: Potential inconsistencies between preserve land acquisition and local land use plans and policies. Impacts on local plans and policies under Alternative 3 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-5: Potential conflicts of preserves with applicable land use designations. Impacts on applicable land use designations under Alternative 3 would be the same as under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-6: Potential conflicts with existing habitat conservation plans. Impacts on existing HCP under Alternative 3 would be comparable to those under Alternative 1, as described above.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact LU-7: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Alternative 3 would only include development within city limits and on land outside city limits already designated for development as covered activities under the HCP/NCCP. With the reduced impact area, the acquisition area would also be reduced. Relative to Alternatives 1 and 3, there would be less HCP/NCCP acquisitions within areas designated for residential use and less potential displacement of residential development to other locations.

Although residential development on land currently not designated for development would not be a covered activity under this alternative, there would remain opportunity for developers to go through the existing endangered species act compliance processes.

This alternative would not hinder short or medium-term ability of the local cities to meet their regional housing needs. In the long-term, Pittsburg, Antioch, and Brentwood may need to adjust the location of future residential development depending on where HCP/NCCP acquisitions actually occur, but given the ample opportunity lands that are identified in the local jurisdictional housing elements and the flexibility in the preserve system assembly, there is no substantial evidence that this alternative will hinder the ability of the local jurisdictions to meet their regional housing allocations.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 4: No Project/No Action

Under Alternative 4, the proposed HCP/NCCP would not be implemented. Land use policies within the County and for each city would remain as they are at present. Individual new developments would be assessed for compliance with local policies and regulations under CEQA/NEPA as they occur, and would be individually required to mitigate any potentially significant impacts on land use. Development within the incorporated cities would be consistent with general plan guidance. However, mitigation for impacts of this development would occur on a case-by-case basis and could result in greater inconsistencies between existing, adjacent, and planned land uses. Individual project mitigation may be inconsistent in terms of location, management requirements, buffers, and linkages to other mitigation areas. Consequently, these mitigation activities could have effects on adjacent lands (e.g., species movements off site), and could be in turn affected by surrounding uses. The resulting land use pattern could not be the most efficient and effective for all types of uses. Regarding housing, this alternative would not change existing residential development potential.

4.4 Agriculture

4.4.1 Methodology and Significance Criteria

Impacts related to agriculture were assessed on the basis of the proposed HCP/NCCP, consultation with County planning staff, and review of applicable documents such as the cities' and County's general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the Plan would have a significant impact on agriculture.

The proposed Plan would have a significant impact if it causes any of the following results.

- Results in the conversion of a substantial amount of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California State Resources Agency, to nonagricultural use.
- Conflicts with existing zoning for agricultural use or a Williamson Act contract.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on agricultural resources associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez,

CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions determined that programmatic impacts on agricultural resources would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures, except the City of Brentwood. The City of Brentwood has determined that buildout of the City's General Plan would result in a significant and unavoidable impact to important farmland. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

4.4.2 Impacts and Mitigation Measures

Alternative 1: Proposed Project (Conservation Strategy A)

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use. Areas identified in the Plan for acquisition contain land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (See Table 4.4-1). Zone 6 contains all the cultivated agriculture outside the ULL in East Contra Costa County. The majority of Zone 6 is designated as Prime Farmland, with smaller areas of Farmland of Statewide Importance and Unique Farmland. The Implementing Entity would acquire up to 400 acres of cropland and pasture in Zone 6 and within the ULL along Marsh Creek and Kellogg Creek, mainly as habitat for Swainson's hawk, western burrowing owl, and tricolored blackbird. Cropland or pasture may also be acquired adjacent to Dutch Slough in Oakley.

Most cropland acquired through easement in Zone 6 would remain in agricultural production, but would be managed to support new foraging habitat or improve existing foraging habitat for some covered species, with some possible limitations on agricultural practices intended to protect covered species. Although restrictions may be placed on some lands acquired by easement, these lands would remain in agricultural production under the proposed HCP/NCCP and would not be converted to nonagricultural use. Other cropland or pasture may be converted to riparian woodland/scrub, upland habitat, or wetlands where physical conditions are suitable. The ultimate amount of conversion is unknown, but is expected to be approximately 75-200 acres. This conversion would amount to less than 2% of the total available Prime Farmland, Farmland of Statewide Importance, and Unique Farmland in Zone 6.

Zones 1–5 contain Grazing Land and Farmland of Local Importance with only a few very small areas of Prime or Unique Farmland (see Figure 3-3). Land in Zones 1–5 would be acquired primarily by purchase in fee title. Agricultural land acquired may continue in agricultural use, or it may be converted to open

space to accommodate the needs of covered species. Although Prime or Unique Farmland could be acquired in Zones 1–5, the total acreage that could be converted to nonagricultural use is extremely small. Furthermore, some important lands would not be converted to nonagricultural use because they would continue to be grazed after acquisition.

There would be no difference in the impact on Important Farmland between the initial urban development area and the maximum urban development area. Increased acquisition requirements in Zone 6 with the maximum urban development area would emphasize acquisition of additional cropland through conservation easement and would not result in any additional conversion of important farmland.

The amount of Prime, Statewide, and Unique Farmland in Zones 1–5 that may be converted to nonagricultural uses under the Plan is small and represents only a fraction of the total amount of Prime, Statewide, and Unique Farmland within the county. Most of the agricultural land acquired by the implementing entity would remain in some form of agricultural production.

This would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact AG-2: Conflict with existing zoning for agricultural use or a Williamson Act contract. Under the proposed HCP/NCCP, lands currently zoned for agriculture or under Williamson Act contract may be purchased through conservation easement or in fee title, or donated in lieu of payment, for conservation purposes. Preservation of lands within areas zoned for agricultural use would not conflict with the permitted uses of agriculturally zoned lands in the Contra Costa County General Plan, as open space falls within the permissible uses in the agricultural designation of the Contra Costa County General Plan.

Prime and non-prime farmland under Williamson Act contract is located throughout Zones 1–6. The Williamson Act generally prohibits public agencies from acquiring Prime Farmland covered under the Act for the location of a public improvement if there is other land within or outside the preserve on which it is reasonably feasible to locate the public improvement. In accordance with Section 51293 of the Act, this prohibition does not apply to the acquisition of a fee interest or conservation easement for a term of at least 10 years in order to restrict the land to agricultural or open space uses.

In East Contra Costa County, virtually all prime farmland enrolled under the Williamson Act lies within Zone 6. Under the proposed HCP/NCCP, some of the up to 400 acres of land purchased in or near Zone 6 would be purchased through conservation easement and would remain in agricultural production under Williamson Act contract through the landowner. The remaining purchases in fee title would be for open space use and therefore consistent with Williamson Act contracts. Because there would be no change in use, any land purchased by the Implementing Entity in Zone 6 would not foster growth on adjacent or nearby

Table 4.4-1 East Contra Costa County HCP/NCCP Farmland Impacts

FMMP Farmland Category	Total Acres	Initial UDA	Maximum UDA Additional	Maximum (IUDA + MUDA) Acquired		Areas Not Acquired	
Prime Farmland*	18,037	241	125	366	2%	17,671	98%
Statewide Importance*	3,959	5	26	31	1%	3,928	99%
Unique farmland*	3,238	149	124	274	8%	2,964	92%
Local Importance	18,275	7,011	1,264	8,276	45%	9,999	55%
Grazing	36,241	16,198	3,351	19,548	54%	16,693	46%
Developed	1,784	34	22	57	3%	1,727	97%
Water	149	0	0	0	0%	149	100%
Other Land	3,079	465	8	473	15%	2,606	85%
Total	84,762	24,104	4,920	29,024	34%	55,738	66%

* = Considered significant farmland per significance criteria

FMMP = Farmland Mapping and Monitoring Program

NOTE: While farmland areas will be acquired, in only limited cases is acquisition expected to result in physical conversion from current agricultural use. This would occur when restoration or other intensive management activities would be conducted and is most likely to be limited to riparian areas/aquatic resource areas.

parcels, and it would not accelerate the cancellation or non-renewal of Williamson Act contracts of these parcels.

Acquisition Zones 1–5 contain large amounts of non-prime land enrolled under the Williamson Act. Land within Zones 1–5 would be acquired primarily in-fee. Because public agencies are not eligible for coverage under a Williamson Act contract, any of these contracted lands in Zones 1–5 that are purchased in-fee or donated in-lieu of payment to the Implementing Entity would be removed from Williamson Act contract. Although the contract would be voided, the land would remain in agricultural production or as open space, a use that is compatible with a Williamson Act contract, and would create no physical change in the environment. In accordance with Government Code Section 51291(b), the Implementing Entity would be required to notify the Director of the California Department of Conservation and the Contra Costa County Community Development Department of Williamson Act–contracted land proposed for acquisition. There would be no physical impact on the environment from removal of these lands from Williamson Act contract.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 2: Conservation Strategy B

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use. Under Alternative 2, the Implementing Entity would acquire conservation easements in Zone 6 on least 1,200 acres of croplands and pasturelands with the initial urban development area, or on at least 1,600 acres of croplands and pasturelands with the maximum urban development area.

Cropland acquired through easement in Zone 6 would remain in agricultural production, but would be managed to support new foraging habitat or improve existing foraging habitat for some covered species, with some possible limitations on agricultural practices intended to protect covered species. Although restrictions may be placed on some lands acquired by easement, these lands would remain in agricultural production under the proposed HCP/NCCP and would not be converted to nonagricultural use.

Impacts under Alternative 2 in Zones 1–5 are the same as under Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact AG-2: Conflict with existing zoning for agricultural use or a Williamson Act contract. Under Alternative 2, lands currently zoned for agriculture or under Williamson Act contract would be purchased through conservation easement. Preservation of lands within areas zoned for agricultural

use would not conflict with the permitted uses of agriculturally zoned lands in the Contra Costa County General Plan, as open space falls within the permissible uses in the agricultural designation of the Contra Costa County General Plan.

In East Contra Costa County, virtually all prime farmland enrolled under the Williamson Act lies within Zone 6. Under Alternative 2, all lands in Zone 6 would be purchased through conservation easement and would remain in agricultural production under Williamson Act contract through the landowner. Because there would be no change in use, any land purchased by the Implementing Entity in Zone 6 would not foster growth on adjacent or nearby parcels, and it would not accelerate the cancellation or non-renewal of Williamson Act contracts of these parcels.

Impacts under Alternative 2 in Zones 1–5 are the same as under Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development

Although the types of activities within the proposed Preserve System would be the same under Alternative 3 as under the proposed Plan, less agricultural land would be acquired for preservation under this alternative.

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use. Under Alternative 3 land would be acquired in Zones 1–5 through in-fee purchases or in-lieu donations. Lands acquired in Zone 6, if any, would be purchased by conservation easement and would not result in any impacts on important farmlands. Less land would be acquired in Zone 5 under Alternative 3; accordingly, the potential impact on Farmlands of Importance would be less than those of the proposed HCP/NCCP.

The amount of Prime or Unique Farmland in Zones 1–5 that may be converted to nonagricultural uses under Alternative 3 would be small, and much of the land acquired by the Implementing Entity would remain in some form of agricultural production.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact AG-2: Conflict with existing zoning for agricultural use or Williamson Act contract. Preserve land in Zones 1–6 acquired by the Implementing Entity would be compatible with agricultural zoning. Acquisition in Zones 1–5 would result in the cancellation of Williamson Act contracts, but because the acquired lands would be acquired for and maintained as permanent open space, there would be no physical impact on the environment.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 4: No Project/No Action

Under this alternative, the proposed HCP/NCCP would not be implemented. Agricultural uses and production would remain as they are at present. Williamson Act lands would remain in agricultural production under contract, unless the individual property owners request removal of the lands from the Williamson Act contract as contracts expire. Individual new developments that would conflict with zoning for agriculture or attempt to convert designated agricultural lands to nonagricultural uses would be assessed under CEQA/NEPA on an individual basis as they occur, and would be required to mitigate any potentially significant impacts on agricultural resources.

4.5 Public Services

4.5.1 Methodology and Significance Criteria

Impacts related to public services were assessed on the basis of project plans, consultation with County planning staff, and review of applicable documents such as the city and County general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the project would have a significant impact on public services.

For the purposes of this analysis, the proposed Plan would have a significant impact if it causes any of the following results.

- Results in substantial adverse physical impacts associated with the provision of new or physically altered police protection, fire protection, or park facilities, the construction of which could cause significant environmental impacts, in order to maintain:
  - acceptable service ratios for fire services, police services, or parks and recreation;
  - response times for fire or police services; and
  - other performance objectives for fire services, police services, or parks and recreation.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on public services associated with this development and recommended mitigation measures are summarized in Appendix D of this document. The relevant CEQA documents are available collectively for public

review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, California). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions determined that programmatic impacts on public services would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

4.5.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact PS-1: Increased demand for fire protection services as a result of increased recreation and use of prescribed burns. The Proposed Plan would result in the creation of new recreational areas in the inventory area. Land uses in the area proposed for the Preserve System currently consist of agriculture, open space, and parcels of private land. New recreational uses would lead to an increase in the number of visitors to these areas through the implementation of new trail systems, viewing areas, and other recreational facilities. The risk of fire would likely increase, because more people would be participating in recreational activities that may pose potential fire hazards. Possible human activities that may increase the fire risk include campfires, cigarette smoking, and barbeques.

In addition, prescribed burning would occasionally be used in the preserves for vegetation management. Although prescribed burns would be conducted by qualified personnel and only under conditions favorable to the safe implementation of prescribed fire, there remains the possibility that burns could get out of control. Thus, prescribed burning could result in an increased risk of wildland fires.

ECCFPD typically responds to fires, including structural and wildland fires, in the unincorporated areas of the county, and would be called on to respond to fires in the Preserve System. Although the fire risk would increase from the activities mentioned above, the implementation of the Preserve System would a gradual process requiring years. ECCFPD currently has adequate existing or planned facilities to address the potential increased need presented by the proposed Preserve System (Wahl pers. comm. 2004).

Funding for additional fire protection would be achieved through provisions of the proposed HCP/NCCP. Chapter 9 of the proposed HCP/NCCP describes this additional need for fire protection and states:

the Implementing Entity will pay the County and other land management agencies to cover preserve-related public safety costs on an annual basis. The number of police officers and firefighters funded per 5-year period is based on the total area projected to constitute designated preserves during the specified period and the predetermined areal extent of preserve that would require the funding of one officer or firefighter, respectively.

The difference in potential impact on fire services between the initial urban development area and the maximum urban development area would be in proportion to the additional acreage of the preserve system (approximately 5,000 acres). This difference would be offset by an additional in-lieu payments to Contra Costa County for the additional firefighting services needed.

This impact would be considered less than significant.

Mitigation: No mitigation would be required.

Impact PS-2: Increased demand for police protection services due to increased recreational use in the preserves. As discussed above (Impact PS-1), the Preserve System would attract new visitors to areas that currently do not experience a high volume of human activity. Accordingly, the addition of recreational areas would increase the demand for law enforcement within the preserves. The Contra Costa County Sheriff's Department responds to incidents in the unincorporated areas of the County and would be responsible for protecting the preserves. EBRPD Police also respond to incidents within and near regional parks and preserves. The current network of stations is believed to be adequate to provide any additional police services required by the creation of preserves in the unincorporated areas (Hasbrouck pers. comm. 2004). Moreover, funding for any additional police protection would be achieved through provisions of the proposed HCP/NCCP, as stated in the discussion of Impact PS-1.

The difference in potential impacts on police services (like the difference in impacts on fire protection services discussed above) between the initial urban development area and the maximum urban development area would be negligible.

This impact would be considered less than significant.

Mitigation: No mitigation would be required.

Impact PS-3: Increase in recreational opportunities and parklands in East Contra Costa County. The Proposed Plan would increase the amount of recreational parkland in East Contra Costa County. Although exact locations and acreage of proposed recreational areas within the Preserve System cannot be determined at present, Conservation Measure 1.5 in the proposed HCP/NCCP acknowledges the need for recreational uses and provides for development of a preserve recreation plan. This conservation measure states that recreation will be allowed in areas of the Preserve System only where it is "compatible with the

preservation and enhancement of covered vegetation communities, covered species, and biological communities."

The Proposed Plan would increase the amount of recreational land in East Contra Costa County, creating a beneficial impact. As is true of fire protection and police services described above (Impacts PS-1 and PS-2), the difference in beneficial impacts on recreational opportunities between the initial urban development area and the maximum urban development area would be negligible.

This impact would be considered beneficial.

Mitigation: No mitigation would be required.

Alternative 2: Conservation Strategy B

Impact PS-1: Increased demand for fire protection services as a result of increased recreation and use of prescribed burns. Under Alternative 2, less grassland and more cropland and pasture would be protected with the initial urban development area than under Alternative 1. This may result in reduced demands for additional fire protection services because less fire-prone grassland will occur in the preserve system. However, these differences are slight. There would be no difference in impact on fire protection services between Alternative 2 and Alternative 1 with the maximum urban development area. Under Alternative 2, in-lieu payments will be made to Contra Costa County to offset the additional fire protection needs, as with Alternative 1.

This impact would be *considered less than significant.*

Mitigation: No mitigation would be required.

Impact PS-2: Increased demand for police protection services due to increased recreational use in the preserves. Impacts to police protection services under Alternative 2 are the same as under Alternative 1.

This impact would be *considered less than significant.*

Mitigation: No mitigation would be required.

Impact PS-3: Increase in recreational opportunities and parklands in East Contra Costa County. Alternative 2 would increase the amount of recreational parkland in East Contra Costa County in the same way as Alternative 1. The size of the preserve system under each alternative is nearly the same.

This impact would be *considered beneficial.*

Mitigation: No mitigation would be required.

Alternative 3: Reduced Development Area

Although the types of activities within the proposed Preserve System would be the same as under Alternative 1, the reduced development under Alternative 3 would require the purchase of less land than Alternative 1.

Impact PS-1: Increased demand for fire protection services as a result of increased recreation and use of prescribed burns.

Impact PS-2: Increased demand for police protection services due to increased recreational use in the preserves. Under Alternative 3, the reduced extent of preserve areas would result in fewer prescribed burns and fewer recreational visitors. The reduction in burns and recreational use would reduce the demand for fire protection and law enforcement compared to the demands under Alternative 1.

Impacts on police and fire services would remain *less than significant.*

Mitigation: No mitigation would be required.

Impact PS-3: Increase in recreational opportunities and parklands in East Contra Costa County. Under this alternative, fewer acres of preserve would be created, less land would restored, and fewer recreational opportunities would be developed. There would still be a *beneficial impact* on recreational resources through an increase in recreational areas; however, the benefit would be slightly reduced in comparison to Alternative 1 due to fewer acres of preserve and, therefore, fewer recreational opportunities.

Mitigation: No mitigation would be required.

Alternative 4: No Project/ No Action

Under Alternative 4, the proposed HCP/NCCP would not be implemented. ECCFPD and the Sheriff would continue to serve the current residents and visitors in the unincorporated areas of the county. Existing parks and open space operated by the state, EBRPD, and CCWD would continue to be available to recreational users. Individual development would be expected to continue and be addressed by CEQA. Individual development projects may impact public services and provide for mitigation, including land dedication for recreational purposes, but such land dedication would not be coordinated at a regional scale as it would under the proposed HCP/NCCP.

No impacts on fire and police protection or recreational facilities would occur.

4.6 Hydrology and Water Quality

4.6.1 Methodology and Significance Criteria

This section describes potential impacts on water resources, and hence on downstream special-status fish species, resulting from implementation of the proposed Plan or the alternatives. For the purposes of this analysis, the proposed Plan would have a significant impact if it causes any of the following results.

- Violates water quality standards or waste discharge requirements.
- Substantially alters existing drainage patterns or substantially increases the rate or amount of surface runoff in a manner that would result in erosion or siltation on- or offsite.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding.

To analyze potential impacts from the proposed Plan and alternatives, the above significance criteria will be compared to existing water quality objectives and assessed using professional judgment.

As described in Section 4.1, development within each of the incorporated cities that are participants to the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts to water resources associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions determined that programmatic impacts on water resources would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plans and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

4.6.2 Impacts and Mitigation Measures

Potential impacts of the HCP/NCCP on water quality are discussed here in terms of short- and long-term impacts of the covered activities and projects as well as the impacts of implementation of the conservation strategy.

As discussed in Chapter 2 *Proposed Project and Alternatives,* covered activities include activities and projects associated with urban growth and specific infrastructure projects outside the ULL; and activities that occur inside the proposed HCP/NCCP preserves.

Potential water quality impacts of covered activities and projects were assessed separately from those that involve habitat conservation and management.

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact WTR-1: Potential for short-term degradation of surface water quality from construction associated with urban growth and infrastructure projects. Urban growth and infrastructure development would potentially result in temporary impacts on water quality during construction. Construction-related water quality impacts that typically occur during land development activities can involve increased erosion and subsequent release of sediment into the drainage system, and increased risk of pollutant spills from construction equipment (e.g., fuel, oil).

The federal CWA Section 402 prohibits the discharge of pollutants to navigable waters from point and nonpoint sources, unless authorized by an NPDES permit issued by the appropriate RWQCB. Project proponents are also responsible to ensure construction activities comply with the conditions in SWRCB's General Permit for Stormwater Discharges Associated with Construction Activity for projects over 1 acre. Compliance with this general permit requires preparation of a SWPPP, implementation of BMPs identified in the SWPPP, and monitoring to ensure that effects on water quality are minimized. Further, the Provision C.3 Amendments of the Contra Costa County Clean Water Program's (CCCCWP's) amended NPDES Permit (Order No. R2-2003-0022; Permit No. CAS 002912) contain performance standards to reduce construction and post construction impacts of new development on local water quality for projects over 0.25 acre (10,000 square feet). Project-level CEQA analysis and permit review would address construction-related discharges.

Potentially significant short-term water quality impacts from urban development and infrastructure projects covered in the HCP/NCCP would be reduced to a less-than-significant level by the implementation of the Conditions on Covered Activities included in the HCP/NCCP, existing water quality regulations, and by any additional project-level mitigation determined to be necessary during project -level permit processing and CEQA analysis. No additional mitigation is necessary.

Impact WTR-2: Potential for long-term degradation of surface or groundwater quality, alteration of drainage patterns, increased flooding potential associated with urban growth and infrastructure projects covered in the HCP/NCCP.

Water Quality Effects of Development - Full build-out of the covered urban development area and infrastructure projects outside the ULL would potentially increase impervious surface area, alter stream channel morphology, and groundwater resources.

Long-term water quality impacts from increased impervious surfaces can result in altered storm hydrographs, loss of wetland and riparian habitat, increased water temperature, introduction of urban pollutants, and introduction of dry weather discharges. Increases in impervious surfaces changes the storm hydrograph by increasing flow velocity, the peak, and quantity of storm runoff. The velocity and erosive force of storm runoff is higher from developed areas than from natural surfaces, such that it triggers surface and stream channel erosion, which can lead to downstream sedimentation. In addition to loss of land and riparian habitat, downstream sedimentation can reduce in-channel habitat, cause channel widening, and flooding at flow constriction points, such as culverts and road crossings. Alterations to the storm runoff peak and increased storm flow volume result from reduced natural infiltration and uptake from native soils and vegetation. Larger and faster runoff peaks restrict natural groundwater recharge, deposition of sediment and pollutants from the water column, and floodplain connectivity. Increased storm flow volume causes flooding of developed areas, particularly when flood control structures are inadequate or floodplain areas have been disconnected from stream channels. Increased impervious surfaces and resulting alterations to the storm hydrograph from covered urban growth would result in potentially significant impacts on water quality.

Developed areas experience loss of vegetative cover, which reduces pollutant filtration and increases pollutant transport. Pollutants, including sediment, nutrients, and toxic chemicals, are naturally removed from surface waters to a degree through soil infiltration and vegetative uptake. Disconnection of an aquatic resource to its natural floodplain, loss of wetlands, and reduction in riparian areas would reduce these vegetative functions. In addition to the loss of pollutant removal functions, urban growth can introduce urban pollutants, such as vehicle combustion byproducts and pesticides, to the watershed. Without natural filtration mechanisms, these urban pollutants are concentrated and transported throughout the watershed by stormwater runoff. Increased concentrations of urban pollutants in the HCP/NCCP permit area would result in potentially significant water quality impacts from covered urban growth.

Channel shape and functioning are affected by flood control activities and streamside development. Channel modifications are often implemented to protect developed areas from the risk of flooding due to increased storm runoff from increased impervious surfaces. Installation of culverts, channel straightening and widening, hardened banks, streambed lining, and other measures to increase flood protection to adjacent and downstream areas

adversely affect beneficial uses of streams. Flood protection measures often disconnect a stream from its natural floodplain areas, thus increasing the potential for localized and downstream flooding. Increases in the frequency and magnitude of flooding promote further channel and water quality degradation due to increased erosion potential and pollutant transport. Additionally, channel modifications reduce in-channel and riparian habitat for aquatic wildlife. Altered channel morphology would result in potentially significant water quality impacts.

Increased impervious surfaces and channel modifications would also adversely affect groundwater resources. Impervious surfaces of urban developments reduce groundwater recharge areas. Loss of groundwater recharge areas reduces groundwater levels and shallow subsurface flows. In turn, the quantity of groundwater supplies can reduce and baseflows in adjacent streams can be lowered and wetlands can be dewatered. Altered stream baseflows adversely affects channel and riparian habitat. Lowered groundwater levels resulting from restricted recharge areas due to urban growth would result in potentially significant impacts on groundwater resources.

Effect of HCP/NCP Conservation Measures - HCP/NCCP covered activities must comply with Conservation Measure 1.7 (Stream Setbacks) and Conservation Measure 1.10 (Hydrology and Erosion Control). Through these conditions as well as project-specific measures identified through project-level CEQA permitting and appropriate permit review, fill associated with covered activities will not result in significant decrease in flood storage. Acquisition of preserve land within the upper watershed will allow for infiltration of precipitation through natural land to attenuate potential future buildout runoff.

Groundwater storage in upper portions of watershed will be enhanced through preservation activities. While aquifers within urbanized areas are in general not used for water supply, provision of stream setbacks and hydrograph modification management will maintain opportunities for recharge within the covered activity areas. Project-level analysis would address specific groundwater effects of covered activities.

Wetland losses are mitigated through HCP/NCCP Conservation Measures 1.7, 2.2, 2.3, 2,9, 2.10 and 2.12. Extents of impacts are profiled in HCP Table 4-2 and 4-3. Overall, covered activities will not result in net loss of wetlands, ponds or streams. Quantification of effects and preservation by stream basin has been added to Appendix K of the HCP/NCCP.

Regarding hydrology, geomorphology, and substrate, the overall effect of the HCP/NCCP is to preserve the most intact upper watershed natural land cover areas while allowing development within the already altered urbanized portions of East County. By comparison with project-by-project approaches, implementation of development in compliance with the HCP/NCCP and in concert with the conservation strategy will alter overall hydrology, geomorphology, and substrate in the inventory area far less. Regarding wildlife corridors, by providing for stream setbacks across the permit area, implementation will provide for protection of stream/riparian corridors.

Development could also increase runoff in local streams. The HCP/NCCP mitigates this potential through the requirements for stream setbacks and for compliance with the C.3 provisions. Project-level CEQA analysis and permit review would address specific-project runoff impacts. HCP/NCCP would provide opportunities to preserve and restore natural hydrology regimes in the upper watershed. Without the HCP/NCCP, there is likely to be more, not less hydrograph modification in the various project sub-basins as a relatively greater amount of development is more likely to occur in the upper watershed.

Dry-season flows may occur from covered activities, especially urban development. The HCP/NCCP mitigates this potential through the requirements for stream setbacks and for compliance with the C.3 provisions. Project-level CEQA analysis and permit review would address specific-project runoff impacts.

Temperature alteration is a potential effect of covered activities. However, the HCP/NCCP requires stream setbacks and the C.3 provisions, which will result in greater infiltration of water prior to entry into receiving waterbodies, which will attenuate temperature increases associated with development. Project-level impacts on temperature will be evaluated in project-level CEQA review and water quality permitting.

Potentially significant long-term water quality impacts from urban development and infrastructure projects covered in the HCP/NCCP would be reduced to a less-than-significant level by the implementation of the Conservation Measures included in the HCP/NCCP and by any additional project-level mitigation determined to be necessary during project -level permit processing and CEQA analysis.

Table 4.6-1 provides a guide to where water quality is addressed in the HCP/NCCP and Table 4.6-2 summarizes the beneficial effects of the conservation measures relative to water quality.

Impact WTR-3: Potential for short-term degradation of surface water quality from activities in HCP/NCCP preserves. The restoration, enhancement, and creation of habitat in preserves established under the proposed Plan would result in a significantly adverse but mitigable impact on water quality. Implementation of the proposed Plan could increase the potential for pollutant loading to the drainage system, and ultimately to the San Joaquin River, Suisun Bay, and San Francisco Bay. Degradation of water quality could affect native and special-status fish species within and downstream of the inventory area. Water quality impacts could occur as a result of construction and operation of proposed HCP/NCCP preserves. Although construction would occur over time and in several different areas, potentially significant water quality impacts could occur.

Construction-related water quality impacts that typically occur during land development activities involve increased erosion and subsequent release of sediment into the drainage system, and increased risk of pollutants from construction equipment (e.g., fuel, oil) released into the drainage system. The federal CWA prohibits the discharge of pollutants to navigable waters from point

and nonpoint sources, unless authorized by an NPDES permit. To enforce this mandate, SWRCB requires that land disturbance, including construction of wetland habitat, of more than 1 acre requires the preparation of a SWPPP and implementation of BMPs and monitoring to ensure that adverse effects on water quality are minimized. However, construction-related activities for restoration and creation of habitat reserves less than 1 acre also have the potential to temporarily affect water quality.

This impact would be considered significant, but implementation of the following measure would ensure consistency with statewide and local programs for water quality control during construction and would consequently reduce the impact to a less-than-significant level.

Mitigation WTR-1: Implement erosion and sediment control BMPs. For construction or restoration of habitat within the preserves, the Implementing Entity or its designated agents will implement multiple erosion and sediment control BMPs in areas with potential to drain to surface waters. These BMPs will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure could include the following.

- Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) will be employed to control erosion from disturbed areas.
- Drainage facilities in downstream offsite areas will be protected from sediment using BMPs acceptable to the County and RWQCBs.
- Grass or other vegetative cover will be established on the construction site as soon as possible after disturbance. At minimum, vegetative application will be completed by September 15 to allow plants to establish. No disturbed surfaces will be left without erosion control measures in place between October 15 and April 15.

BMPs would be consistent with Contra Costa County and participating city ordinances, and with grading, erosion, and sediment control standards. The final selection of BMPs will be subject to review by the County.

Impact WTR-4: Potential for long-term degradation of surface or groundwater quality, alteration of drainage patterns, increased flooding potential from activities in HCP/NCCP preserves. The proposed plan could alter the existing surface water drainage pattern through creation of habitat reserves. The surface water drainage pattern would be modified to increase and encourage a naturally functioning hydrologic system. The increase of properly functioning wetland areas will improve water quality and flood control by slowing flow velocity and causing sediment and pollutants to settle and absorb

into wetland vegetation and bottom sediments. The proposed Plan would have an overall benefit to surface water drainage and water quality.

The proposed project could alter the existing groundwater recharge pattern through creation and restoration of habitat reserves. The increase of properly functioning wetland areas, including ponds, would improve groundwater quality and encourage recharge by filtering out sediment and pollutants and by creating groundwater recharge areas. The proposed Plan would have an overall benefit to groundwater.

The proposed Plan could alter flood and drainage patterns through the creation of habitat reserves. The proposed HCP/NCCP's conservation strategy outlines methods to enhance and maintain water quality, prevent siltation, and enhance flood protection (Conservation Measures 1.7 and 1.10). The conservation measures establish buffers between urban development and protected streams to protect uplands and wetlands within the proposed HCP/NCCP preserves. The buffer zones would reduce the potential for flooding through the establishment of a floodplain and meandering channel. Impacts on people or structures from flooding would be reduced through implementation of the proposed Plan. The overall impact would be beneficial.

Alternative 2: Conservation Strategy B

Impact WTR-1: Potential for short-term degradation of surface water quality from urban and infrastructure development. The overall character of development would be similar to Alternative 1 and would also result in a significant but mitigable impact on water quality.

This impact would be considered significant, but implementation of the following measure would ensure consistency with statewide and local programs for water quality control during construction and would consequently reduce the impact to a less-than-significant level.

> **Mitigation WTR-1: Implement erosion and sediment control BMPs.** Mitigation Measure WTR-1 would also apply under Alternative 2.

Impact WTR-2: Potential for long-term degradation of drainage patterns or surface water quality due to urban and infrastructure development. Covered activity development would be similar to that possible with Alternative 1 and could alter the existing surface water drainage patterns and water quality similarly.

Potentially significant long-term water quality impacts from urban development and infrastructure projects covered in the HCP/NCCP would be reduced to a less-than-significant level by the implementation of the Conservation Measures included in the HCP/NCCP and by any additional project-level mitigation determined to be necessary during project -level permit processing and CEQA analysis.

Impact WTR-3: Potential for short-term degradation of surface water quality from activities in preserves. The restoration, enhancement, and creation of habitat in preserves established under Alternative 2 is the same as under Alternative 1 and would also result in a significant but mitigable impact on water quality.

This impact would be considered significant, but implementation of the following measure would ensure consistency with statewide and local programs for water quality control during construction and would consequently reduce the impact to a less-than-significant level.

Mitigation WTR-1: Implement erosion and sediment control BMPs. Mitigation Measure WTR-1 would also apply under Alternative 2.

Impact WTR-4: Impact WTR-4: Potential for long-term degradation of surface or groundwater quality, alteration of drainage patterns, increased flooding potential from activities in HCP/NCCP preserves. Alternative 2 could alter the existing surface water drainage pattern through creation of habitat reserves and would have an overall benefit to surface water drainage and water quality, as with Alternative 1. Alternative 2 would have an overall benefit to groundwater as with Alternative 1. Alternative 2 could alter flood and drainage patterns through the creation of habitat reserves in the same way as Alternative 1. The overall impact is beneficial.

This impact would be considered beneficial.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development Area

In comparison to the proposed Plan, Alternative 3 would result in reduced potential for impacts on water quality, surface and groundwater, and flooding and drainage, because less land would be converted to habitat preserves.

Impact WTR-1: Potential for short-term degradation of surface water quality from urban and infrastructure development. The overall character of development would be less than Alternative 1 because it would be restricted to areas currently designated for development. However, this development could also result in a significant but mitigable impact on water quality.

This impact would be considered significant, but implementation of the following measure would ensure consistency with statewide and local programs for water quality control during construction and would consequently reduce the impact to a less-than-significant level.

Mitigation WTR-1: Implement erosion and sediment control BMPs. Mitigation Measure WTR-1 would also apply under Alternative 3.

Impact WTR-2: Potential for long-term degradation of drainage patterns or surface water quality due to urban and infrastructure development. Covered activity development would be similar, but less than that possible with Alternative 1. Where development occurred, it could alter the existing surface water drainage patterns and water quality significantly, if uncontrolled.

Potentially significant long-term water quality impacts from urban development and infrastructure projects covered in the HCP/NCCP would be reduced to a less-than-significant level by the implementation of the Conservation Measures included in the HCP/NCCP and by any additional project-level mitigation determined to be necessary during project -level permit processing and CEQA analysis.

Impact WTR-3: Potential for short-term degradation of surface water quality from activities in preserves. The potential for water quality impacts, although reduced under Alternative 3, would result in disturbance of more than 1 acre of land.

This impact would be considered significant. However, implementation of the following mitigation measure would ensure consistency with statewide and local programs for water quality control during construction and would consequently reduce impacts to a less-than-significant level.

Mitigation WTR-1: Same as described above for Alternative 1.

Impact WTR-4: Potential for long-term degradation of surface or groundwater quality, alteration of drainage patterns, increased flooding potential from activities in HCP/NCCP preserves. These impacts would be comparable to those described for Alternative 1.

This impact would be considered beneficial.

Mitigation: No mitigation measures would be required.

Alternative 4: No Project/No Action

Under Alternative 4, implementation of the proposed HCP/NCCP would not occur, and no take permits would be issued. Compliance with ESA, CESA, and CEQA would continue to be addressed on a case-by-case basis. Implementation of individual HCP/NCCPs rather than a broad-scale HCP/NCCP would not have substantially different impacts on water quality. The Contra Costa Clean Water Program's NPDES Permit would continue to meet stormwater control requirements for proposed development; accordingly, degradation of water quality would not be expected.

4.7 Socioeconomics and Environmental Justice

4.7.1 Methodology and Significance Criteria

For the purposes of this analysis, an impact is considered to be significant if it would result in any of the following.

- Substantially affect employment, industry, or commerce, including requiring the displacement of businesses or farms.
- Substantially affect property values or the local tax base.
- Substantial disproportionate affect on minority, low-income, elderly, disabled, transit-dependent, or other specific interest group(s).

4.7.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact SOCIO-1: Effects on employment, industry, or commerce, or displacement of businesses or farms from implementation of the proposed Plan. The proposed HCP/NCCP would result in a number of changes to the land development process that could have market or regional effects. The process of land development is complex and subject to a wide range of influences and effects. The implementation of the proposed Plan would influence a number of these factors, often in competing ways. It is not possible to quantify the degree of effect of the proposed HCP/NCCP because the proposed Plan is programmatic and does not specify locations of actions, and there is a high degree of uncertainty regarding the extent of the proposed Plan's effects on economic factors. The potential effects on regional economic conditions that would result from Plan implementation and issuance of take permits is described qualitatively and by comparing conditions with and without implementation of the proposed Plan.

Implementation of the proposed HCP/NCCP and issuance of take permits would change development conditions, which could in turn affect the overall economic and market climate in the area. Issuance of take permits to local authorities would streamline the permit process and clearly define project mitigation requirements for future projects. The streamlined process may allow for quicker completion of projects and greater efficiency in land development. Take authorization under the proposed Plan would be associated with specific costs in the form of HCP/NCCP fees or land dedications.

The proposed Plan also makes specific requirements of project applicants in terms of implementation of conservation measures. These costs may be minor in some cases, such as biological survey costs. In other cases, conservation

measures may have higher costs, such as conservation measure requirements for reduced development footprint, setbacks from riparian areas, or setbacks from adjacent wildlands. These measures may reduce the developable area of a property and have substantial implications to project proponents in potential project revenue.

The acquisition of lands for preserves and management of these lands primarily for purposes of biological resources is a component of the proposed Plan that would have implications for regional economic conditions. The proposed HCP/NCCP is a regional plan and does not identify specific lands targeted for acquisition. Instead, the decision to acquire land for HCP/NCCP preserves would rely on identification of willing sellers and a determination that subject properties are suitable for acquisition based on the objectives of the HCP/NCCP. The acquisition of lands currently in agricultural use would not be expected to substantially reduce current agricultural uses or affect the agricultural economy of the region. See Section 4.4 *Agriculture* for a discussion of impacts on agricultural lands.

Cultivated agricultural lands in Contra Costa County are primarily in the far eastern portions of the county, in and around an area designated in the County General Plan as AC. The proposed Plan contemplates land acquisition in the County's AC, but most land acquired in this area would be acquired through conservation easement. Lands acquired by conservation easement would permit continued agricultural use. Agricultural management plans will be prepared for preserved croplands and pasturelands (Conservation Measure 1.3). Changes in agricultural practices (e.g., use of pesticides or herbicides, schedule of activities) may be required as conditions of the proposed HCP/NCCP easement, but the conditions would be compatible with maintaining the ongoing economical viability of agricultural use. The use of conservation easements within this area would avoid displacing any farms and avoid substantially affecting the major economically productive lands in the county.

Agricultural lands elsewhere in the county are primarily grazing lands with limited areas of hay or cultivated crops. Lands outside the AC would be acquired primarily through in-fee purchase, although conservation easements are not precluded. Lands acquired in-fee would be managed to support the conservation objectives of the proposed Plan. Previous uses of these properties, such as cultivation of crops or grazing, may be eliminated or modified to ensure that such activities are compatible with the conservation objectives. Lands currently in agriculture would likely continue in agricultural use under lease to farmers and under prescribed protocols of an agricultural land management plan (Conservation Measure 1.3). Grazing would be continued or used on many of the acquired preserve lands to support vegetation management objectives (Conservation Measure 1.2).

The proposed Plan would not affect regional economy, substantially displace farms, or permanently change the conditions that affect individual businesses or the local economic climate (land use, transportation systems, customer base, etc.).

This impact would be considered less than significant.

Mitigation Measure: No mitigation measures would be required.

Impact SOCIO-2: Potential effects on property values or local tax base from acquisition of land for preserves. Implementation of the proposed HCP/NCCP may affect property values and the local tax base, primarily as a result of the acquisition of land for conservation purposes.

Property values are dependent on a wide range of site-specific and broad geographic considerations, such as size and shape of the property, accessibility and visibility, environmental conditions, legal constraints, utilities, zoning and regulation, land supply, and overall economic climate. The proposed Project would not rezone any parcels, introduce any new or substantially different uses, or alter or expand any support infrastructure to these areas (e.g., expand water service, improve transportation network) such that the value of surrounding lands would be affected. Land acquisition under the proposed HCP/NCCP could indirectly affect property values by influencing a number of land valuation factors.

Land acquisition for preserves would result in specific restrictions on the use of individual preserve properties. The extent and type of restrictions would be highly variable, depending on the current conditions and use of the property. For example, agricultural lands acquired may continue in agriculture use, but with minor conditions on use to enhance biological values. Restrictions on use of property could be perceived in the marketplace as detrimental to the value of adjacent agricultural properties. The proposed HCP/NCCP provides take coverage for adjacent agricultural parcels to prevent impacts on surrounding agricultural practices. Other more intensively managed lands in proximity to preserves (i.e., commercial or industrial uses) would not likely be affected to any measurable degree, because these lands offer little habitat value that would attract sensitive species.

Similarly, acquisition and maintenance of lands in open space could increase property values. Implementation of the proposed Plan could result in land speculation, whereby lands are purchased with the intent to resell to the HCP/NCCP Implementing Entity at a profit. Land speculation is not likely to be substantial in East Contra Costa County due to the broad areas that are suitable for acquisition. Land acquisition for open space is also viewed as an important amenity in the regional context and could have a positive effect on land values. Preserved lands in proximity to developed areas, but within the region, is a substantial component of property values of the residential housing market.

Finally, land acquisition under the proposed Plan could affect the local tax base by removing lands from the County tax rolls. Lands acquired through conservation easement would continue to be taxed as agricultural lands and would not affect the tax base. Land acquired in fee title would be broadly distributed throughout inventory area. Because the proposed Plan does not specify the amount of in-fee versus easement acquisition, or specific parcels for acquisition, a detailed determination of impact on the tax base is not feasible. In

general, lands within the county are typically taxed at approximately 1.20% of their appraised value (Contra Costa County 2004). (Actual tax rates vary between tax rate zones. Because specific parcels cannot be identified, a specific tax rate cannot be defined.) Land values in East Contra Costa vary depending on the size of the parcel and proximity to services and utilities. The average assessed value for land in Contra Costa County varies from $3,300 per acre for large parcels of 120 acres or more to $66,200 per acre for large developable parcels within the ULL. Based on a study by Economic and Planning Systems, Inc. (2006), the hypothetical acquisition cost of land for the HCP/NCCP initial permit area would be approximately $177,000,000. This study assumed that all lands to be included in the HCP/NCCP preserves would be through in-fee purchase, so this estimate can be considered a maximum hypothetical land value. Based on a tax rate of 1.20%, this would equate to a potential maximum reduction in property tax receipts for the County of $2,124,000. The property tax roll for land in Contra Costa County in 2003 was approximately $40,483,000,000. The loss in property tax under the proposed Plan would represent approximately 0.005% of the County's annual property tax revenue.

This impact would be less than significant.

Mitigation Measure: No mitigation measures would be required.

Impact SOCIO-3: Potential effects on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups from acquisition of land for preserves. Minority and low-income populations are found throughout the county, as described in Section 3.7, *Socioeconomics and Environmental Justice*, but the activities associated with the proposed HCP/NCCP would be broadly distributed throughout East Contra Costa County and would not result in disproportionately high or significant effects on minority or low-income populations.

The HCP/NCCP is not expected to be a substantial impediment to meeting current or future residential development needs, including affordable housing allocations as described in Section 4.3 *Land Use and Housing*.

All of the local jurisdictions (Pittsburg, Antioch, Brentwood, and Oakley) have identified that they have sufficient residentially-designated land within their current city limits to meet their current and future regional housing needs, including affordable housing. As noted above, in the long-term there are several compatibility conflicts between areas outside the city limits that are designated high-priority HCP/NCCP acquisition areas and are designated for residential use. However, most of these areas are located in the foothills, and are designated for low-density housing. These areas are likely to provide market rate housing, not low-income housing which is usually provided within city limits in areas designated for medium and high-density residential development. Overall, given the City's own identification of substantial available acreage for residential development and that the limited areas of conflict primarily concern market-rate housing, the HCP/NCCP is not likely to result in a disproportionate impact on low-income housing utilized by economically disadvantaged residents of the eastern county. In the long-term, Pittsburg, Antioch, and Brentwood may need to

adjust the location of future residential development depending on where HCP/NCCP acquisitions actually occur, but given the ample opportunity lands that are identified in the local jurisdictional housing elements and the flexibility in the preserve system assembly, there is no substantial evidence that the HCP/NCCP will hinder the ability of the local jurisdictions to meet their long-term regional housing allocations including those for affordable housing.

Removal of lands from agricultural production could result in a loss of agricultural jobs, an employment sector that has a large percentage of minority and low-income workers. The proposed Plan could potentially remove from production less than 1% of irrigated agricultural land including cropland, vineyards, and orchards. The loss in land available for agricultural use would be offset in part by the purchase of easements on agricultural lands that would ensure continued agricultural use. The proposed project is likely to have only a minor impact on the agricultural economy, and it would not disproportionately affect minority, low income, elderly, disabled, transit-dependent, or other interest groups.

This impact would be less than significant.

Mitigation Measure: No mitigation measures would be required.

Alternative 2: Conservation Strategy B

Under Alternative 2, the effects on socioeconomic conditions and environmental justice would be essentially the same as under the proposed Plan.

Impacts SOCIO-1, SOCIO-2, and SOCIO-3.

These impacts would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development Area

Under Alternative 3, less preserve land would be acquired. As a result, the level of habitat restoration and construction may be reduced. Effects under this alternative would be comparable to those described above for Alternative 1.

Impacts SOCIO-1, SOCIO-2, and SOCIO-3.

These impacts would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 4: No Project/No Action

Under Alternative 4, the proposed HCP/NCCP would not be implemented. Under this alternative, there would be no socioeconomic or environmental justice impacts. Any development that would occur would be addressed by CEQA on a project-by-project basis.

4.8 Geology, Soils, and Seismicity

4.8.1 Methodology and Significance Criteria

Impacts related to geology and soils were assessed on the basis of the proposed HCP/NCCP, consultation with County planning staff, and review of applicable documents such as the cities' and County's general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the proposed Plan would have a significant impact on geology and soils.

The proposed Plan would have a significant impact if it causes any of the following results.

- Exposes people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
  - strong seismic ground shaking;
  - seismic-related ground failure, including liquefaction; or
  - landslides.
- Results in substantial soil erosion or the loss of topsoil.
- Is located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC) (1994), creating substantial risks to life or property.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on geology, soils, and seismicity associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions determined that programmatic impacts on geology, soils, and seismicity would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

4.8.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact GEO-1: Expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure. The primary concern related to human exposure to rupturing earthquake faults, ground shaking, or ground failure is the potential for damage to structures or to people occupying the structures. The Alquist-Priolo Act prohibits structures intended for human occupancy from being built on traces of active faults and regulates construction in the corridors of active faults. No structures for human occupancy are proposed for construction to support implementation of the proposed Plan or the Preserve System. Any minor construction, such as installation of restrooms, would be built according to appropriate standards, including the current UBC and California Building Standards Code (CBSC).

This impact would be considered to be less than significant.

Mitigation: No mitigation measures would be required.

Impact GEO-2: Expose people or structures to landslides. Earthwork, such as habitat restoration and creation, may create temporary or permanent slopes that could become unstable if improperly designed or constructed. Although landslides are known to occur in the area, the State has not yet issued a seismic hazards mapping act for the Tassajara 7.5-minute quadrangle, the area where much of the proposed Preserve System would be located. In the unincorporated portions of the County, restoration or other activities requiring substantial grading (more than 200 cubic yards of soil) would require the Implementing Entity to obtain a grading permit from the County Department of Building Inspection. In order to obtain a grading permit, the Implementing Entity would be required to retain a qualified professional to conduct site-specific geotechnical investigations consistent with all applicable standards of professional engineering geologic/geotechnical practice. These investigations would be conducted once land has been designated for restoration/creation and will provide a geologic basis for the development of appropriate project design. Earthwork recommendations to ensure slope stability and erosion controls, based on site conditions, would be incorporated into the project construction documents. The Implementing Entity may also be required to secure an NPDES permit as part of

the grading permit (see also Mitigation Measure WQ-1). Periodic monitoring and inspection during construction would be conducted by County staff to ensure proper implementation of all design recommendations as stated in County regulations.

No structures for human occupancy are proposed for construction to support implementation of the Plan or the Preserve System. Earthwork would take place only in areas not open to the public. Consequently, there is no additional risk to humans or structures from habitat restoration or creation activities.

This impact would be considered to be less than significant.

Mitigation: No mitigation measures would be required.

Impact GEO-3: Result in substantial soil erosion or loss of topsoil. Restoration activities would include ground-disturbing earthwork such as digging, trenching, grading, and other activities that may promote soil erosion and/or loss of topsoil. Mitigation Measure WQ-1 states that the Implementing Entity, when undertaking such ground-disturbing activities, will require implementation of appropriate BMPs and, if activities would disturb more than 1 acre of land, prepare and implement a SWPPP subject to requirements of Section 402 of the federal CWA and NPDES. The SWPPP would include BMPs to control erosion and sedimentation. If more than 1 acre of land is disturbed during the restoration or creation activities in the Preserve System, the Implementing Entity would be required to obtain and implement the SWPPP. The specific acreage of land that will be disturbed will not be known until land acquisition of each parcel takes place. If necessary, the Implementing Entity would be responsible for monitoring to ensure the SWPPP is enforced.

Adherence to the aforementioned regulations and implementation of Mitigation Measure WQ-1 would reduce this impact to a less-than-significant level.

Mitigation: No mitigation measures would be required.

Impact GEO-4: Be located on expansive soil. When building on expansive soils, some construction materials (e.g., steel or concrete) may become corrosive. Compliance with the California Building Standards Code, which contains provisions for design and construction on expansive soils, is required in order to prevent corrosion.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 2: Conservation Strategy B

Impact GEO-1: Expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground

failure. Under Alternative 2, the expected exposure of people or structures to geologic hazards is the same as under Alternative 1.

This impact would be considered to be less than significant.

Mitigation: No mitigation measures would be required.

Impact GEO-2: Expose people or structures to landslides. Under Alternative 2, no structures for human occupancy are proposed for construction. Earthwork would take place only in areas not open to the public. Consequently, there is no additional risk to humans or structures from habitat restoration or creation activities.

This impact would be considered to be less than significant.

Mitigation: No mitigation measures would be required.

Impact GEO-3: Result in substantial soil erosion or loss of topsoil. Impacts under Alternative 2 related to soil erosion and loss of topsoil as the same as under Alternative 1.

Adherence to the aforementioned regulations and implementation of Mitigation Measure WQ-1 would reduce this impact to a less-than-significant level.

Mitigation: No mitigation measures would be required.

Impact GEO-4: Be located on expansive soil. When building on expansive soils, some construction materials (e.g., steel or concrete) may become corrosive. Compliance with the California Building Standards Code, which contains provisions for design and construction on expansive soils, is required in order to prevent corrosion.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development Area

Under Alternative 3, less preserve land would be acquired. As a result, the level of habitat restoration and construction may be reduced. Activities under this alternative would be comparable to those described above for Alternative 1.

Impacts GEO-1, GEO-2, GEO-3, and GEO-4.

These impacts would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 4: No Project/No Action

Under Alternative 4, the proposed HCP/NCCP would not be implemented. Under this alternative, there would be no impacts on geology and soils because no restoration or construction activities would take place within the proposed Preserve System. Seismic and landslide risks would remain at their current level because these risks are inherent within the region. Any development that would occur would be addressed by CEQA on a project-by-project basis.

4.9 Cultural Resources

4.9.1 Methodology and Significance Criteria

This section describes potential impacts on cultural resources. Impacts on cultural resources were assessed on the basis of the proposed HCP/NCCP and alternatives, consultation with County planning staff, and review of applicable documents such as the cities' and County's general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the proposed Plan would have a significant impact on cultural resources.

For the purposes of this analysis, and based on the implementation guidelines for NEPA, CEQA, and Section 106 of the NHPA, an impact was considered to be significant and to require mitigation if it would result in any of the following.

- A substantial adverse change in the significance of a historical resource, as defined by CEQA.
- Alteration of characteristics of a property that may qualify it for listing in the NRHP.
- Effects that would diminish the integrity of an NRHP-listed or eligible property, as defined in Chapter 3 *Affected Environment*.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on cultural resources associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions has determined that programmatic impacts on cultural resources would be mitigated to a less-than-significant level through implementation of

general plan policies and the adoption of identified mitigation measures. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan, and would be subject to the mitigation measures identified such that the impacts identified would be adequately mitigated. For development activities, no additional mitigation measures are identified in the EIR beyond the General Plan policies.

4.9.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact CR-1: Potential impacts on known or unknown cultural resources, cultural deposits, or human remains. Activities conducted pursuant to the proposed HCP/NCCP, including habitat restoration, creation, enhancement, and management activities, may disturb sites that are currently listed or are eligible for listing in the NRHP, cultural deposits, human remains, or other cultural resources. Specific resources that may be affected by conservation activities cannot be identified until specific locations for these activities are selected. All projects conducted under the proposed HCP/NCCP would be subject to separate CEQA review and mitigation, if necessary, for identified impacts on cultural resources. For activities on preserves within the HCP/NCCP preserve system, the Implementing Entity would be required to comply with Section 106 of the NHPA.

This impact would be considered significant but could be mitigated to a less-than-significant level.

Mitigation Measure CR-1: Develop HCP/NCCP cultural resources management plan. The HCP/NCCP Implementing Entity will prepare a cultural resources management plan to ensure that implementation of the proposed HCP/NCCP would not result in significantly adverse impacts on prehistoric or historic resources. The cultural resources management plan would consist of the following.

- Establishment of an APE for the HCP/NCCP, in consultation with SHPO, ACHP, and USFWS.
- Summary of known resources in the APE that are currently listed in the NRHP, CRHP, or local historic registries.
- Identification of areas of potential cultural sensitivity in the APE.
- Development of a Standard Mitigation Measures Agreement that establishes the mitigation and recordation measures to treat the adverse effects of undertakings such as:
  - relocation (of individual structures),
  - recordation,

- data recovery, and
- curation.

The cultural resources management plan will be developed as a basis for establishment of a programmatic memorandum of agreement (MOA) between USFWS, SHPO, and ACHP for general compliance with the requirements of the NHPA Section 106 process.

Mitigation Measure CR-2: Stop work if cultural materials are discovered during ground-disturbing activities. Because specific locations of preserves and the conservation activities within the preserves are not known at present, no archaeological surveys of such preserves could be conducted, and the presence or absence of subsurface archaeological deposits remains unknown. Conservation activities involving ground disturbance could have a significant impact on archaeological deposits. There is a potential for the discovery of buried archaeological deposits.

If archaeological deposits, such as chipped stone or groundstone, historic debris, or building foundations, are discovered during construction-related activities, all ground-disturbing activities will cease within a 100-foot radius. A qualified archaeologist will be notified immediately to assess the discovery.

If human remains of Native American origin are discovered during ground-disturbing activities, it will be necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Pub.Res. Code Sec. 5097). If human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

1. The county coroner has been informed and has determined that investigation of the cause of death is required; and
2. If the remains are of Native American origin:
    a. The descendents of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Pub. Res. Code Sec. 5097.98; or
    b. The Native American Heritage Commission was unable to identify a descendent or the descendent failed to make a recommendation within 24 hours after being notified by the commission.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and

disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that excavation be stopped in the vicinity of the discovered human remains until the coroner can determine whether the remains are those of a Native American.

Alternative 2: Conservation Strategy B

Impact CR-1: Potential impacts on known or unknown cultural resources, cultural deposits, or human remains. Activities conducted pursuant to the Alternative 2 and their affects are essentially the same as under the proposed Plan. *This impact would be considered significant but can be mitigated to a less-than-significant level.*

Mitigation Measure CR-1: Develop HCP/NCCP cultural resources management plan. Mitigation Measure CR-1, as described above, would apply under Alternative 2.

Mitigation Measure CR-2: Stop work if cultural materials are discovered during ground-disturbing activities. Mitigation Measure CR-2, as described above, would also apply under Alternative 2.

Alternative 3: Reduced Development Area

Under Alternative 3, a comparable level and type of activity would occur as with the proposed HCP/NCCP associated with implementation of the conservation program and establishment and maintenance of the proposed preserve system. Although the degree of adverse impacts on cultural resources could be slightly reduced because the extent of land acquisition and thus the extent of potential site disturbance may be less, impacts on cultural resources under Alternative 3 would be comparable to those under Alternative 1.

Impact CR-1: Potential impacts on known or unknown cultural resources, cultural deposits, or human remains. Activities conducted pursuant to the Alternative 3 and their affects are essentially the same as under the proposed HCP/NCCP. *This impact would be considered to be significant but can be mitigated to a less-than-significant level.*

Mitigation Measure CR-1: Develop HCP/NCCP cultural resources management plan. Mitigation Measure CR-1, as described above, would apply under Alternative 3.

Mitigation Measure CR-2: Stop work if cultural materials are discovered during ground-disturbing activities. Mitigation Measure CR-2, as described above, would also apply under Alternative 3.

Alternative 4: No Project/No Action

Under Alternative 4, the proposed HCP/NCCP would not be implemented, and there would be no impacts on cultural resources. No conservation management and corresponding ground-disturbing activities would be undertaken within the proposed preserve system.

Future development would be expected to occur under the No Action/No Project alternative. Such development would continue to be addressed largely under CEQA on a project-by-project basis. Some development would be expected to require compliance with NEPA as a result of federal funding or permitting, and would also require compliance with Section 106 of the NHPA.

The level of impact on cultural resources under the No Action/No Project Alternative is difficult to evaluate. Without a regional HCP/NCCP, individual development projects would need to comply with ESA, CESA, and CWA Section 404 and to develop their own project-specific mitigation for impacts on species and habitats. This mitigation would likely include habitat creation, restoration, and enhancement activities that involve ground disturbance. Such mitigation would likely have similar effects on cultural resources as those effects under the proposed HCP/NCCP and Alternatives 1, 2, and 3.

4.10 Transportation and Circulation

4.10.1 Methodology and Significance Criteria

This chapter addresses short-term construction impacts and long-term operational impacts of the proposed HCP/NCCP on the surrounding transportation system. Potential impacts were assessed by reviewing the local standards and general plans, and by contacting local agencies.

For the purposes of this analysis, the proposed Plan would have a significant impact if it causes any of the following results.

- A substantial increase in traffic compared to existing traffic volumes and the capacity of the roadway system.
- Safety hazards due to design features or incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle transit) or inadequate emergency access.
- Conflict with adopted transportation plans, programs, or projects.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on transportation associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These documents are available collectively for public review at the

Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions except the City of Pittsburg and the City of Brentwood has determined that programmatic impacts on transportation would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures. The City of Pittsburg has determined that buildout in accordance with the respective general plans would result in impacts to level of service standards for intersections and roadway segments that would remain significant after implementation of plan policies. The City of Brentwood has determined that buildout in accordance with their general plans would result in a significant and unavoidable impacts to traffic levels. No additional mitigation measures are identified in the EIRs.

It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

4.10.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact TRA-1: Temporary construction-related traffic increases and traffic safety hazards. Although specific locations of preserves have not yet been determined, the habitat modification within the preserves, construction of preserve-related structures, and construction of any associated roadways may result in minor traffic increases and traffic safety hazards. Minor traffic increases would occur as a result of construction worker commute trips. Impacts associated with traffic safety hazards and construction-related nuisances could include movement of construction equipment, temporary lane closures, delays, detours, and other construction site hazards. The level of activity associated with construction of preserve elements would occur over multiple years and in various locations within the Zones. Additionally, impacts associated with construction would be temporary, and extensive traffic increases and safety hazards would not be likely occur given the rural nature of many of the roadways adjacent to the Zones.

Because exact locations of preserves and the level of activity at each preserve have yet to be determined, it is difficult to predict specific areas where preserve-related traffic could contribute to traffic increases and/or traffic safety impacts. Furthermore, traffic levels on roadways in the inventory area could change over the permit term. Nonetheless, construction activities could result in increased traffic and traffic safety hazards.

This impact would be considered significant. However, implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure TR-1: Prepare and implement a traffic control plan. For any restoration or construction activity requiring a grading permit from the County or a city, the Implementing Entity or its designated contractor will, as part of the application for a grading permit, prepare a traffic control plan to address construction-related traffic nuisances and public safety. The purpose of the traffic control plan will be to accomplish the following objectives.

- Reduce, to the extent feasible, the number of vehicles (construction and other) on the roadways adjacent to the construction site.
- Reduce, to the extent feasible, the interaction between construction equipment and other vehicles.
- Promote public safety through actions aimed at driver and road safety.
- Ensure safety for bicyclists and pedestrians throughout the construction area.

The traffic control plan will include the following measures.

- Through access for emergency vehicles will be provided at all times.
- Access will be maintained for driveways and private roads.
- Adequate off-street parking will be provided for construction-related vehicles through the construction period.
- Pedestrian and bicycle access and circulation will be maintained during construction. If construction encroaches onto the trail or a sidewalk, a safe detour will be provided for pedestrians at the nearest painted crosswalk. If construction encroaches on a bike lane, warning signs will be posted that indicate that bicycles and vehicles are sharing the roadway.
- Lane closures (partial or entire), traffic controls, and construction materials delivery will be restricted to between 9:00 a.m. and 4:00 p.m. on weekdays to avoid more congested morning and evening hours.
- Traffic controls on arterials and collectors should include flag persons wearing bright orange or red vests and using a “stop/slow” paddle to warn drivers.
- Access to public transit should be maintained, and movement of public transit vehicles will not be impeded as a result of construction activities.
- Construction warning signs will be posted, in accordance with local standards or those set forth in the Manual on Uniform Traffic

Control Devices, in advance of the construction area and at any intersection that provides access to the construction area.

- If lane closures occur, local fire and police departments will be notified of construction locations, and alternative evacuation and emergency routes will be designed to maintain response times during construction periods, if necessary.
- Written notification will be provided to appropriate contractors regarding appropriate routes to and from construction sites, and weight and speed limits for local roads used to access construction sites.
- A sign with the name, telephone number, and email address to contact with complaints regarding construction traffic will be posted at all active construction sites.

Impact TRA-2: Potential conflicts with transportation plans, programs, and planned projects. A number of transportation projects are proposed in the inventory area, including programmed and future projects in the 2004 *Update of the Contra Costa Countywide Comprehensive Transportation Plan* (CTP) (see Table 3.10-1), programmed or planned projects in MTC's RTP), many planned projects in the County or city capital improvement plans, and local projects that may not be specifically listed. Projects that would occur in priority acquisition areas for the proposed HCP/NCCP include the following.

- Byron Highway-Vasco Road Connector.
- Kirker Pass Road widening.
- Marsh Creek Road realignment at selected curves.
- Vasco Road widening/SR 84.
- Bridge replacement, repair, and retrofit.
- Marsh Creek regional trail.
- SR 239 (Brentwood–Tracy Expressway).

Many of the transportation projects identified would require only minor additional right-of-way or would be conducted within existing rights-of-way, and would have minimal potential to conflict with land acquisition objectives of the proposed HCP/NCCP. Others are still conceptual and offer only general information on alignments or construction locations. Nevertheless, the establishment of preserves in areas where land may be required for transportation project rights-of-way could impair construction of these projects, as well as limit the suitability of these areas as resource preserves.

The degree of impact on planned transportation improvements would be less with the initial urban development area than with the maximum urban development area. Substantially more land would be acquired in Zones 5 and 6 with the maximum urban development area, where a large number of the potentially impacted transportation projects would occur. Future transportation projects will

be required to consider potential impacts on the proposed HCP/NCCP and preserves.

This impact would be *considered significant. However, implementation of the following mitigation measure would reduce this impact to a less-than-significant level.*

> **Mitigation TRA-2: Avoid planned transportation improvement sites.** As part of the process of identifying suitable sites for proposed HCP/NCCP land acquisition, the Implementing Entity will avoid lands that are within or adjacent to proposed alignments for the following planned transportation projects.
>
> - Byron Highway-Vasco Road Connector.
> - Kirker Pass Road widening.
> - Marsh Creek Road realignment at selected curves.
> - Vasco Road widening/SR 84.
> - Bridge replacement, repair, and retrofit.
> - Marsh Creek regional trail.
> - SR 239 (Brentwood–Tracy Expressway).
>
> These projects are identified in CCTA's Contra Costa CTP or MTC's RTP. Lands within or adjacent to the proposed rights-of-way should not be considered for acquisition unless it is determined that, as part of acquisition, adequate avoidance and minimization measures could be provided to permit construction of the proposed project and avoid inconsistencies with the goals and objectives of the proposed HCP/NCCP.

Impact TRA-3: Potential traffic increases from proposed HCP/NCCP implementation, including operation and maintenance of preserves. There would be only minor changes in traffic on the roadways due to vehicle trips associated with Plan implementation. Approximately 10 key positions have been identified in the HCP/NCCP as necessary to implement the Plan. These positions may be filled by staff in different agencies, contracted to private specialists, filled at different stages of Plan implementation, or combined. Most vehicle trips would be broadly distributed: they would be associated with species surveys and investigation of potential lands for acquisition, and with operation, maintenance, and passive recreational use of preserves.

Although the exact locations of preserves and affected roadways cannot be identified, the establishment of preserves would result in only minor additional vehicle trips. Operation would not generate sufficient additional travel to result in long-term degradation of LOS on adjacent streets.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 2: Conservation Strategy B

Impact TRA-1: Temporary construction-related traffic increases and traffic safety hazards. Impacts under Alternative 2 from temporary construction-related traffic increases and traffic safety hazards would be the same as under Alternative 1.

This impact would be considered significant. However, implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure TR-1: Prepare and implement a traffic control plan. Mitigation Measure TR-1 also applies to Alternative 2.

Impact TRA-2: Potential conflicts with transportation plans, programs, and planned projects. Under Alternative 2, potential conflicts with transportation plans, programs, and planned projects would be the same as under Alternative 1.

This impact would be considered significant. However, implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation TRA-2: Mitigation Measure TRA-2 also applies to Alternative 2.

Impact TRA-3: Potential traffic increases from proposed HCP/NCCP implementation, including operation and maintenance of preserves. Staffing levels under Alternative 2 are the same as under Alternative 1 for both urban development areas. Therefore, impacts under Alternative 2 from potential increases in traffic from Plan implementation are the same as under Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development Area

Impact TRA-1: Temporary construction-related traffic increases and traffic safety hazards. Under Alternative 3, construction and habitat restoration activities would occur, but to a lesser extent than under Alternative 1. The reduction in acres of preserve would result in a slight decrease in preserve-related construction traffic compared to Alternative 1.

This impact would be considered significant. However, implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure TR-1: Prepare and implement a traffic control plan. As described above under Alternative 1.

Impact TRA-2: Potential conflicts with transportation plans, programs, and planned projects. Potential conflicts with planned transportation projects under Alternative 3 would be comparable to but slightly less than under Alternative 1 due to the lower level of planned land acquisition, particularly in Zones 5 and 6, where many transportation improvements are planned. Future transportation projects would be required to consider potential impacts to the proposed HCP/NCCP and preserves.

This impact would be considered significant. However, implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation TRA-2: As described above under Alternative 1.

Impact TRA-3: Potential traffic increases from operation and maintenance of preserves. Potential long-term impacts on traffic conditions under Alternative 2 would be comparable but slightly lower than that described above for Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 4: No Project/No Action

Under Alternative 3, the proposed HCP/NCCP would not be implemented. Construction activities associated with the HCP/NCCP preserves and acquisition of preserve lands in areas planned for transportation projects would not occur.

No impacts on transportation facilities would occur.

4.11 Noise

4.11.1 Methodology and Significance Criteria

Significance Criteria

Impacts related to noise were assessed on the basis of the proposed HCP/NCCP, consultation with County planning staff, and review of applicable documents

such as the cities' and County's general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the Plan would have a significant impact on noise.

The proposed Plan would have a significant impact if it causes any of the following results.

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the proposed Plan.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed Plan.

Impact Mechanisms

There would be two primary sources of noise related to the proposed HCP/NCCP.

- Truck traffic hauling excavated material and fill/cover material to and from sites of habitat restoration/creation.
- Construction equipment engaged in earthmoving, and construction associated with habitat enhancement, modification, or creation.

Habitat restoration activities would require the use of heavy construction equipment. Table 4.11-1 lists the noise levels produced by various types of construction equipment. Properly maintained equipment will produce noise levels comparable to the levels shown in the table. The types of construction equipment used for earthmoving typically generate noise levels of 70–90 dBA at a distance of 50 feet when the equipment is operating.

Construction equipment operations can vary from intermittent to fairly continuous use, with multiple pieces of equipment operating concurrently. A worst-case construction scenario may consist of concurrent operation of a bulldozer (87 dBA), a backhoe (90 dBA), a grader (90 dBA), and a front loader (82 dBA) in the same general area. Peak construction-period noise from this combination of equipment would be about 94 dBA at the noise source.

Table 4.11-1. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Crane, derrick	88
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jack hammer	88
Loader	85
Paver	89
Pneumatic tool	85
Pump	76
Rock drill	98
Roller/sheep's foot	74
Scraper	89
Shovel	82
Truck	88

Source: Federal Highway Administration 1995.

Table 4.11-2 summarizes noise levels as a function of distance from an active construction site with the previously described equipment in operation. Episodes of noise levels greater than 60 dBA will occasionally occur at locations within about 1,900 feet of a construction site. Episodes of noise levels greater than 70 dBA will occur at areas within about 750 feet of a construction site.

Table 4.11-2. Estimated Noise near Construction Site

Distance Attenuation		Distance to dBA Contours	
Distance to Receptor (feet)	Sound Level at Receptor (dBA)	Sound Level at Contour (dBA)	Distance to Contour (feet)
50	94	95	45
100	88	90	79
200	82	85	138
400	75	80	240
600	72	75	417
800	69	70	736
1,000	67	65	1,115
1,500	62	60	1,918
2,000	59	55	2,902
2,500	56	50	4,006
3,000	54	45	5,365
4,000	50	40	7,407
5,280	46	35	8,074
7,500	39	30	8,801

Notes:

The following assumptions were used.

Basic sound level dropoff rate:	6.0
Atmospheric absorption coefficient:	0.5
Reference noise level:	94
Distance for reference noise level:	50

Calculations include the effects of atmospheric absorption at a dropoff rate of 0.5 dB/100 meters. The effects of local shielding from buildings and topography are not included and will substantially reduce sound levels.

Except for sounds with highly distinctive tonal characteristics, noise from a particular source will not be identifiable when its level is substantially less than background noise levels.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on noise conditions associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions except the City of Pittsburg has determined that programmatic impacts on noise would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures. The City of Pittsburg General Plan EIR determines that buildout of the City's general plan would result in impacts to noise from increased traffic that would be significant and unavoidable. No additional mitigation measures are identified in the EIR beyond the General Plan policies.

It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan, and would be subject to the mitigation measures identified such that the impacts identified would be adequately mitigated.

4.11.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impact NOISE-1: Exposure of noise-sensitive land uses to construction-related noise. Habitat enhancement and creation, construction of preserve-related structures, and development and use of associated roadways may occur near sensitive noise receptors, such as residences and existing state and regional parks. Construction noise, although temporary, would be above existing ambient noise levels and may be heard by residents and visitors to nearby parks.

Significance criteria, as defined by the California State Parks System, would be noise that is "clearly noticeable and objectionable" to park visitors. The noise generated from construction activities is not expected to meet these criteria but, as described in the discussion of impact mechanisms above, implementation of the proposed Plan would result in noise levels exceeding 60 dBA at distances as great as 1,900 feet from excavation and other earthworking activities.

Because habitat restoration and other preserve-related construction activities would occur with both the initial and maximum urban development areas, there would be a negligible difference in potential noise impacts.

This impact would be *considered significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.*

> **Mitigation Measure NOISE-1: Employ noise-reducing construction practices.** To reduce noise levels to the maximum extent practicable, the remediation contractor will employ the following noise-reducing construction practices.

- During construction phases, the contractor will ensure that construction is performed in accordance with noise standards for the County and any city within 1 mile.
- During construction phases, noise-generating activities within 300 feet of an occupied residence will only be performed during normal daylight hours (6:00 a.m.–10:00 p.m.) Monday through Saturday, wherever feasible.
- Mufflers should be kept operable and effective on all construction equipment, generators, and vehicles. All internal combustion engines must be operated with exhaust and intake silencers. Wherever possible, noise-generating construction equipment should be shielded from nearby residences by noise-attenuating buffers such as structures or truck trailers.
- Prior to construction within 1,000 feet of residences, written notice should be provided to potentially affected residences identifying the type, duration, and frequency of construction activities. Notification materials will also identify a mechanism for residents to register complaints if construction noise levels are overly intrusive or construction occurs outside the required hours.
- Construction staging and stockpile areas will be located at least 1,000 feet from occupied residences, or contractors will be required to provide appropriate noise-reducing engine-housing enclosures. Equipment warm-up areas, water tanks, and storage areas should be located in the established staging area or in other portions of the site more than 1,000 feet from existing residences, as feasible.
- Throughout the construction period, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, or installing temporary barriers around stationary construction noise sources at the request of the County or affected city.

Impact NOISE-2: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards. Activities at the preserves, including restoration activities, monitoring, pest management, recreation, and infrastructure maintenance would occur within the Preserve System on a permanent and ongoing basis. As discussed under Impact NOISE-1 above, noise-sensitive land uses adjacent to and within the proposed Preserve System area include scattered residences and nearby parks. Ongoing activities at the preserves are not expected to create substantial new sources of noise, as they would not generally involve noise-generating actions. Any new noise generated by these activities would be minimal and is not expected to exceed County or city standards.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact NOISE-3: Potential increases in traffic noise levels. Implementation of the proposed NCP/HCCP would result in minor increases in traffic associated with habitat restoration and construction in different locations throughout the inventory area. Activities associated with preserve enhancement or construction would be expected to generate a low number of daily trips by both construction workers and trucks, and would not significantly affect noise conditions in the area crossed by the proposed access easement.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 2: Conservation Strategy B

Impact NOISE-1: Exposure of noise-sensitive land uses to construction-related noise. Habitat enhancement and creation, construction of preserve-related structures, and development and use of associated roadways are the same under Alternative 2 as under Alternative 1. Therefore, potential impacts related to noise exposure are also the same.

This impact would be considered significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

- **Mitigation Measure NOISE-1: Employ noise-reducing construction practices.** Mitigation Measure NOISE-1 also applies to Alternative 2.

Impact NOISE-2: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards. Impacts under Alternative 2 related to permanent exposure of noise-sensitive land uses are the same as under Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impact NOISE-3: Potential increases in traffic noise levels. Under Alternative 2, implementation of the proposed NCP/HCCP would result in the same potential increases in traffic noise levels as under Alternative 1.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Alternative 3: Reduced Development

Although the types of activities would be the same as in Alternative 1, Alternative 3 allows for the purchase of less land than Alternative 1. Under this

Alternative, fewer preserves would be created, less land would be restored, and fewer recreational opportunities would be developed. The exact acreage by which the Preserve System would be reduced is unknown. Because there would be less construction and recreation than in Alternative 1, noise impacts from these activities would be reduced, but the overall impacts would be similar to those described for Alternative 1.

Impact NOISE-1: Exposure of noise-sensitive land uses to construction-related noise. Impacts would be the same as those described above for Alternative 1.

This impact would be considered significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

> **Mitigation Measure NOISE-1: Employ noise-reducing construction practices.** See discussion of Alternative 1.

Impact NOISE-2: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards. Impacts would be the same as those described above for Alternative 1.

This impact would be considered less than significant.

> **Mitigation:** No mitigation measures are required.

Impact NOISE-3: Potential increases in traffic noise levels. Impacts would be the same as those described above for Alternative 1.

This impact would be considered less than significant.

> **Mitigation:** No mitigation measures would be required.

Alternative 4: No Project/No Action

Under Alternative 3, the proposed HCP/NCCP would not be implemented. Noise levels in incorporated cities unincorporated areas of the county would remain as they are at present. The County and incorporated cities would continue to strive to meet their standards for noise. Individual new developments would be assessed for noise under CEQA/NEPA as they occur, and would be required to mitigate excessive noise levels. Because very little of the land proposed for the Preserve System is zoned for development, permanent noise from individual projects would create minimal impacts; however, any construction-related noise in these areas would create a significant impact.

4.12 Air Quality

4.12.1 Methodology and Significance Criteria

Air quality impacts associated with the proposed HCP/NCCP and alternatives would be limited to potential construction emissions resulting from construction equipment exhaust and fugitive dust. These potential impacts would occur on a temporary basis during construction of potential preserve-related structures and roadways. Once construction is completed, neither the proposed Plan nor the alternatives are expected to generate significant pollutant emissions. Additionally, short-term air quality impacts may occur as a result of prescribed burning on various preserves.

Federal Criteria

The NEPA review process must be integrated with other regulatory review processes and consider applicable regulations. A non-transportation project located in a nonattainment or maintenance area must undergo a general conformity analysis in accordance with 40 CFR 93 to ensure that the project does not:

- cause or contribute to new violations of any standard in any area;
- increase the frequency or severity of an existing violation of any standard; or
- delay timely attainment of any standard required interim emission reduction, or other milestones.

As part of the general conformity process, a conformity analysis is required if a federal action satisfies one of the following two conditions.

- The action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at or above emission rates shown in Table 4.12-1.
- The action's direct and indirect emissions of any criteria pollutant represent 10% of a nonattainment or maintenance area's total emissions inventory for that pollutant.

Table 4.12-1. Emission Rates for Criteria Pollutants in Nonattainment Areas

Pollutant	Emission Rate (Tons per Year)
Ozone (Volatile organic compounds or NO_X)	
Serious nonattainment areas	50
Severe nonattainment areas	25
Extreme nonattainment areas	10
Other ozone nonattainment areas outside an ozone transport region	100
Marginal and moderate nonattainment areas inside an ozone transport region	
Volatile organic compounds	50
NO_X	100
CO: All nonattainment areas	100
SO_2 or NO_2: All nonattainment areas	100
PM10	
Moderate nonattainment areas	100
Serious nonattainment areas	70
Pb: All nonattainment areas	25

Note: *De minimis* threshold levels for conformity applicability analysis.
Source: 40 CFR 51.853.

If the total direct emissions associated with the action are below the *de minimis* levels indicated in Table 4.12-1, general conformity requirements do not apply; the action is considered in conformity and would not result in an adverse impact. Because the inventory area is in attainment for the criteria pollutants indicated in Table 4.12-1 except ozone (moderate status), conformity for ozone must be completed for the alternatives.

State Criteria

Appendix G of the State CEQA Guidelines states that a project would normally have a significant impact on the environment if it causes any of the following results.

- Conflicts with or obstruct implementation of the applicable air quality plan.
- Violates any air quality standard or contribute substantially to an existing or projected air quality violation.
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Exposes sensitive receptors to substantial pollutant concentrations.

- Creates objectionable odors affecting a substantial number of people.

The guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make these determinations. The BAAQMD does not require quantification of construction emissions. Instead, it requires implementation of effective and comprehensive feasible control measures to reduce PM10 emissions (Bay Area Air Quality Management District 1999). PM10 emitted during construction activities varies greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, and weather conditions. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to reduce PM10 emissions during construction. These control measures are summarized in Table 4.12-2. According to BAAQMD, if all control measures indicated in Table 4.12-2 are implemented (as appropriate, depending on the size of the construction area), air pollutant emissions from construction activities would be considered less than significant (Bay Area Air Quality Management District 1999).

Table 4.12-2. Bay Area Air Quality Management District Feasible Control Measures for Construction Emissions of PM10

Basic Control Measures: the following controls should be implemented at all construction sites.
▪ Water all active construction areas at least twice daily.
▪ Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
▪ Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
▪ Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Enhanced Control Measures: the following measures should be implemented at construction sites greater than 4 acres in area.
▪ Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
▪ Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (e.g., dirt, sand).
▪ Limit traffic speeds on unpaved roads to 15 mph.
▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
▪ Replant vegetation in disturbed areas as quickly as possible.
Optional Control Measures: the following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or for any other reason may warrant additional emissions reductions.
▪ Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
▪ Install windbreaks or plant trees/vegetative windbreaks at windward side(s) of construction areas.
▪ Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
▪ Limit the area subject to excavation, grading, and other construction activity at any given time.
Source: Bay Area Air Quality Management District 1999

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on air quality associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These previous CEQA documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions except the City of Pittsburg has determined that programmatic impacts on air quality would be mitigated to a less-than-significant level through

implementation of general plan policies and the adoption of identified mitigation measures. The City of Pittsburg General Plan EIR determines that buildout of the City's general plan would result in increased emissions of carbon monoxide, ozone precursors, and particulate matter, result in degradation of local air quality, and be inconsistent with the 1997 Clean Air Plan, that would be a significant and unavoidable impact. No additional mitigation measures are identified in the EIR beyond the General Plan policies.

It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan, and would be subject to the mitigation measures identified such that the impacts identified would be adequately mitigated.

4.12.2 Impacts and Mitigation Measures

Alternative 1: Proposed Plan (Conservation Strategy A)

Impacts under NEPA

Impact AIR-1: Short-term increase in emissions from construction activities. Although specific locations of preserves have not yet been determined, the creation of preserves, preserve-related structures, and associated roadways may result in an increase in vehicle emissions (CO, ozone precursors, and PM10) and fugitive dust on a temporary basis. These emissions would be generated during construction from operation of construction equipment and by worker commute trips.

In areas exposed to high concentrations of vehicle exhaust, CO is typically considered to be a primary pollutant concern. Examples include urban intersections and freeway corridors. The potential preserve acquisition sites are generally located in rural areas that do not usually experience high concentrations of CO from vehicle exhaust. Therefore, issues associated with CO concentrations are not expected to be of concern for the proposed HCP/NCCP.

Construction of various preserve elements may generate ozone precursors (NO_x and ROG) through the operation of construction vehicles. Although the majority of land uses adjacent to the Zones are open space, agriculture, and parks, portions of some Zones border the city limits of cities and may be adjacent to sensitive receptors. However, the level of activity associated with construction of preserve elements would occur over multiple years and in various locations within the preserve acquisition zones. Additionally, impacts associated with construction would be temporary.

Despite the short-term nature of construction activities, and the fact that construction would occur sporadically over a period of up to 30 years in multiple locations, the SFBAAB is in nonattainment for ozone. Additional contributions

of these pollutants could result in potentially adverse air quality impacts above the *de minimis* levels indicated above. Since habitat restoration and other preserve-related construction activities would occur with both the initial and maximum urban development area scenarios, the difference in potential impacts on air quality would be negligible.

This is impact would be *considered significant. However, implementation of the following mitigation measures would reduce emissions of NO_x and PM10 to a less-than-significant level.*

Mitigation Measure AIR-1: Implement NO_x-reducing construction practices. The project proponent will implement the following NO_x-reducing construction practices, as required, during construction of preserve elements.

- Require use of Purinox instead of diesel fuel.
- All machinery will be retrofitted with lean-NO_x catalysts to reduce NO_x emissions.
- Install high-pressure injectors on all vehicles, where feasible.
- Use Caterpillar prechamber diesel engines or equivalent, together with proper maintenance and operation.
- Maintain equipment according to manufacturers' specifications, except as specified above.
- Restrict the idling of construction equipment to 10 minutes.
- Install catalytic converters on gasoline-powered equipment.
- Use only diesel equipment or diesel vehicles with engines built in 1996 or later.

Mitigation Measure AIR-2: Implement PM10-reducing construction practices. The project proponent will implement the PM10-reducing construction practices indicated in Table 4.12-2 during construction of preserve elements. These mitigation measures are required by BAAQMD for all construction activities within its jurisdiction.

Impact AIR-2: Short-term increases in CO, ROG, PM10, and NO_x from prescribed burning. Several conservation measures in the proposed HCP/NCCP call for varying degrees of prescribed burning for habitat enhancement and maintenance on a preserve-specific basis. Conservation Measure 1.2 describes the need for preserve management plans for each preserve in Zones 1–5. This conservation measure identifies prescribed burning as an anticipated method for vegetation management, to be determined on a preserve-by-preserve basis. Conservation Measure 2.4, which addresses native grassland enhancement, also includes recommendations for prescribed burning. This conservation measure anticipates that native grassland enhancement within the preserves would likely require a mix of prescribed burning and other management techniques at different sites and at different scales. Additionally,

Conservation Measure 2.8 addresses the need for prescribed burns in chaparral/scrub habitat. It is anticipated that burning would be used sparingly and strategically in this vegetation community, and only when necessary to reduce extreme fire hazards in areas of likely fire risk, or to enhance unoccupied habitat for Alameda whipsnake.

Specific details related to prescribed burning will be included in each preserve's management plan. For purposes of this analysis, it is assumed that prescribed burning would occur infrequently and temporarily within Zones 1–5. CO is the primary emission from wildland fires, followed by ROG, PM10, and NO_x. Because prescribed burning would occur with both the initial and maximum urban development area scenarios, the difference in potential impacts on air quality from prescribed burns would be negligible.

This impact would be considered significant. However, implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure AIR-3: Comply with California Air Resource Board's (ARB's) *Smoke Management Guidelines for Agricultural and Prescribed Burning*. The proposed HCP/NCCP will comply fully with ARB's *Smoke Management Guidelines for Agricultural and Prescribed Burning*. California's Smoke Management Program addresses potentially harmful smoke impacts from agricultural, forest, and rangeland management burning operations.

Mitigation Measure AIR-4: Comply with BAAQMD Regulation 5 requirements for wildland vegetation management burning. The proposed NCP/HCCP will comply fully with BAAQMD Regulation 5 requirements for all prescribed burns. Compliance entails submission of a smoke management plan for each burn. Each smoke management plan will include specific objectives of the burn, acreage, tonnage to be burned, burn schedule, and particulate matter emissions estimates. If burning were to significantly change from what was originally detailed in the smoke management plan, consultation with BAAQMD staff would be required, and a new smoke management plan may be required, depending on the type of burn.

Impact AIR-3: Determination of Conformity with the State Implementation Plan. The proposed Plan would conform to the SIP if its annual emissions are less than 50 tons of ozone (volatile organic compounds or NOx). The proposed Plan, including construction-related activity, would be implemented over the 30-year term of the permit. Actual periods of construction may vary during this time. Construction emissions from the proposed Plan may result from vehicle trips for implementation of the Plan and maintenance of preserve lands, and use of heavy equipment for excavation and earth moving required for habitat restoration or enhancement. Based on the assumed construction of one large-scale habitat restoration project a year, the proposed Plan would result in annual emissions of 0.11 tons per year of ROG and 1.31 tons per year of NOx.

Conformity calculations are provided in Appendix E. These emissions would not exceed the *de minimus* thresholds of 50 tons per year for these ozone precursors.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impacts under CEQA

Impact AIR-4: Short-term increase in emissions from construction activities. As discussed above, BAAQMD has not established a significance threshold for PM10. Instead, it requires implementation of effective and comprehensive feasible control measures to reduce PM10 emissions (Table 4.12-2).

Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure AIR-5: Implement BAAQMD requirements for the management of PM10. For all construction activities, all appropriate mitigation measures from Table 4.12-2 shall be implemented.

Impact AIR-5: Short-term increases in CO, ROG, PM10, and NO_x from prescribed burning. Prescribed burns could result in potentially significant air quality impacts, as described above. Although BAAQMD does not require the quantification of emissions from open burning (Bourguignon pers. comm.), these impacts are still potentially significant.

Implementation of Mitigation Measures AIR-3 and AIR-4 would reduce this impact to a less-than-significant level.

Mitigation Measure AIR-3: Comply with California ARB Smoke Management Guidelines for Agricultural and Prescribed Burning.

Mitigation Measure AIR-4: Comply with BAAQMD Regulation 5 requirements for wildland vegetation management burning.

Alternative 2: Conservation Strategy B

Impacts under NEPA

Impact AIR-1: Short-term increase in emissions from construction activities. Impacts under Alternative 2 from construction on short-term emissions are the same as under Alternative 1.

This is impact would be considered significant. However, implementation of the following mitigation measures would reduce emissions of NO_x and PM10 to a less-than-significant level.

Mitigation Measure AIR-1: Implement NO_x-reducing construction practices. Mitigation Measure AIR-1 also applies to Alternative 2.

Mitigation Measure AIR-2: Implement PM10-reducing construction practices. Mitigation Measure AIR-2 also applies to Alternative 2.

Impact AIR-2: Short-term increases in CO, ROG, PM10, and NO_x from prescribed burning. The level of prescribed burning expected under Alternative 2 would be similar to that under Alternative 1. The preserve system under Alternative 2 would contain less grassland with the initial urban development area than under Alternative 1 (11,000 acres vs. 13,000 acres), so slightly less prescribed burning and its associated emissions would be expected. The amount of chaparral and oak savanna land cover types would be nearly the same in each alternative.

This impact would be considered significant. However, implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure AIR-3: Comply with California Air Resource Board's (ARB's) *Smoke Management Guidelines for Agricultural and Prescribed Burning*. Mitigation Measure AIR-3 also applies to Alternative 2.

Mitigation Measure AIR-4: Comply with BAAQMD Regulation 5 requirements for wildland vegetation management burning. Mitigation Measure AIR-4 also applies to Alternative 2.

Impact AIR-3: Determination of Conformity with the State Implementation Plan. Alternative 2 would conform to the SIP if its annual emissions are less than 50 tons of ozone (volatile organic compounds or NOx). Conformity calculations provided in Appendix E for the proposed Plan also apply to Alternative 2. These emissions would not exceed the *de minimus* thresholds of 50 tons per year for these ozone precursors.

This impact would be considered less than significant.

Mitigation: No mitigation measures would be required.

Impacts under CEQA

Impact AIR-4: Short-term increase in emissions from construction activities. As discussed above, BAAQMD has not established a significance threshold for PM10. Instead, it requires implementation of effective and

comprehensive feasible control measures to reduce PM10 emissions (Table 4.12-2).

Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

> **Mitigation Measure AIR-5: Implement BAAQMD requirements for the management of PM10.** For all construction activities, all appropriate mitigation measures from Table 4.12-2 shall be implemented.

Impact AIR-5: Short-term increases in CO, ROG, PM10, and NO_x from prescribed burning. Prescribed burns could result in potentially significant air quality impacts, as described above. Although BAAQMD does not require the quantification of emissions from open burning (Bourguignon pers. comm.), these impacts are still potentially significant.

Implementation of Mitigation Measures AIR-3 and AIR-4 would reduce this impact to a less-than-significant level.

> **Mitigation Measure AIR-3: Comply with California ARB Smoke Management Guidelines for Agricultural and Prescribed Burning.**
>
> **Mitigation Measure AIR-4: Comply with BAAQMD Regulation 5 requirements for wildland vegetation management burning.**

Alternative 3: Reduced Development

Although the types of activities within the proposed Preserve System would be the same as under Alternative 1, there would be less construction of preserve elements and fewer prescribed burns under Alternative 2 as a result of the acquisition of fewer acres of preserve land. Consequently, the potential for air quality impacts would be less than those under Alternative 1. Construction and prescribed burns would be expected to occur under the Reduced Development Alternative; accordingly, the following *significant but mitigable impacts* would also be expected to occur.

Impact AIR-1: Short-term increase in emissions from construction activities.

Impact AIR-2: Short-term increases in CO, ROG, PM10, and NO_x from prescribed burning.

Impact AIR-3: Determination of Conformity with the State Implementation Plan.

Impact AIR-4: Short-term increase in emissions from construction activities.

These impacts would be considered to be significant. However, implementation of the mitigation measures listed below would reduce these impacts to less-than-significant levels.

Mitigation: Mitigation Measures AIR-1, AIR-2, AIR-3, AIR-4, and AIR-5, as described above, would apply.

Alternative 4: No Project/No Action

Under Alternative 3, the proposed HCP/NCCP would not be implemented. Air quality in incorporated cities within the county and unincorporated areas of the county would remain as they are at present. The County and incorporated cities would continue to strive to meet standards for air quality. Individual new developments would be assessed for air quality impacts under CEQA/NEPA as they occur, and would be required to mitigate potential impacts. Because very little of the land proposed for the Preserve System is zoned for development, permanent air quality impacts from individual projects would be minimal; however, any construction-related air quality impacts in these areas would be potentially significant.

4.13 Mineral Resources

4.13.1 Methodology and Significance Criteria

This section describes potential impacts on mineral resources. For the purposes of this analysis, the proposed Plan would have a significant impact if it causes any of the following results.

- Results in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Results in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

The criteria used to determine the significance of impacts on mineral resources are based on the criteria defined in Appendix G of the CEQA Guidelines.

As described in Section 4.1, development within the County and each of the incorporated cities that are participants in the proposed HCP/NCCP has been analyzed in previous CEQA documents that are hereby incorporated by reference. The impacts on mineral resources associated with this development and recommended mitigation measures are summarized in Appendix D of this EIS/EIR. These documents are available collectively for public review at the Contra Costa County Community Development Department (651 Pine Street, 4th Floor—North Wing, Martinez, CA). Individual general plans and EIRs are also available at each of the respective land use agencies.

In adopting the EIRs for the local general plans, each of the participating jurisdictions determined that programmatic impacts on mineral resources would be mitigated to a less-than-significant level through implementation of general plan policies and the adoption of identified mitigation measures. It is assumed that all development approved by the participating local jurisdictions would be consistent with the policies of the respective general plan and would be subject to the mitigation measures identified, such that the impacts identified would be adequately mitigated.

4.13.2 Impacts and Mitigation Measures

Alternative 1: Proposed Project (Conservation Strategy B)

Impact MIN-1: Loss of availability of a known mineral resource that would be a value to the region and the residents of the state, or loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Implementation of the proposed HCP/NCCP would result in acquisition and preservation of lands in Zones 3 and 5 that may be classified as mineral resource areas of statewide or regional importance under SMARA, and that are designated for protection in the Contra Costa County General Plan. Although lands in proximity to the mineral resource protection area are currently quarried and are therefore less suitable for acquisition under the proposed HCP/NCCP, lands within the mineral protection zone could be offered for acquisition or in-lieu land dedication under the proposed Plan. Species and habitat conservation would preclude future mineral extraction. The use of preserve lands acquired under the proposed HCP/NCCP, whether acquired in fee title or by conservation easement, would be restricted to ensure attainment of the biological goals and objectives of the proposed HPC/NCCP.

This impact would occur with both the initial and maximum urban development area scenarios; however, the degree of impact with the initial urban development area would be less. With the maximum urban development area, an additional 2,950 acres of land would be acquired in Zone 5, and the potential to affect lands designated for protection of mineral resources would be greater.

This impact would be considered significant; however, implementation of the following mitigation measure would ensure protection of significant mineral resources and consistency with the mineral protection policies of the Contra Costa General Plan and would therefore reduce this impact to a less-than-significant level.

Mitigation MIN-1: Evaluate mineral resources. The Implementing Entity shall, when evaluating lands for acquisition in Zones 3 and 5, determine if the lands are within mineral resource protection areas designated in the Contra Costa County General Plan. Lands within the mineral resource protection area will be considered for acquisition only

if the Implementing Entity determines that acquisition would not impair future mineral resource extraction in the area by introducing an inherently incompatible use, or by restricting access to other mineral resource areas. Lands adjacent or in proximity to the designated mineral protection area will also be evaluated to assess compatibility with potential future mineral extraction operations, such as quarry transport trucks.

Alternative 2: Conservation Strategy B

Impact MIN-1: Loss of availability of a known mineral resource that would be a value to the region and the residents of the state, or loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Implementation of Alternative 2 would result in acquisition and preservation of lands in Zones 3 and 5 in the same was as with Alternative 1. Less land would be acquired in Zone 5 with the initial urban development area under Alternative 2 than under Alternative 1, so the potential for this impact would be reduced under Alternative 2 with that scenario. Land acquisition in Zone 5 with the maximum urban development area is nearly the same between Alternative 2 and Alternative 1.

Under Alternative 2, this impact would occur with both the initial and maximum urban development areas; however, the degree of impact with the initial urban development area would be reduced. With the maximum urban development area, an additional 5,858 acres of land would be acquired in Zone 5, and the potential to affect lands designated for protection of mineral resources would be greater.

This impact would be considered significant; however, implementation of the following mitigation measure would ensure protection of significant mineral resources and consistency with the mineral protection policies of the Contra Costa General Plan and would therefore reduce this impact to a less-than-significant level.

Mitigation MIN-1: Mitigation Measure MIN-1 also applies to Alternative 2.

Alternative 3: Reduced Development Area

Although the types of activities in the proposed Preserve System would be the same as for the proposed HCP/NCCP, less agricultural land would be acquired for preservation under Alternative 2 than under the proposed HCP/NCCP.

Impact MIN-1: Loss of availability of a known mineral resource that would be a value to the region and the residents of the state, or loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Under Alternative 3, lands

would be acquired for preservation in Zones 3 and 5 that may be designated as an area for mineral production. Although the amount of land acquired may be less than that acquired under the proposed HCP/NCCP, these acquisitions may still affect land designated for mineral resource protection. Mineral extraction would be an incompatible use with species and habitat conservation and would be precluded.

This impact would be considered significant; however, implementation of Mitigation Measure MIN-1 would reduce this impact to a less-than-significant level.

Mitigation MIN-1: As described above.

Alternative 4: No Project/No Action

Under the No-Action/No-Project alternative, implementation of the proposed HCP/NCCP would not occur, and no take permits would be issued. Development is likely to continue; however, compliance with ESA, CESA, and CEQA would be addressed on a case-by-case basis. Acquisition of lands for preservation would occur as mitigation for individual actions, but this acquisition would not be coordinated as it would be under the proposed HPC/NCCP. Acquisition in Zones 3 and 5, where mineral resources occur, would not be likely to occur under the No-Action/No-Project alternative, since these areas offer limited conservation opportunities. No impact on mineral resources would occur.