Chapter 2

Proposed Plan and Alternatives

2.1 Introduction

This chapter describes the proposed HCP/NCCP (proposed Plan), including the overall conservation strategy and the conservation measures that collectively are intended to protect species covered by the proposed HCP/NCCP. In accordance with the requirements of NEPA and CEQA, detailed discussions describe alternatives to the proposed HCP/NCCP, the alternatives selection process, and alternatives considered but eliminated.

2.1.1 Plan Location

The proposed HCP/NCCP inventory area—the planning area in which all impacts would be evaluated and conservation would occur—is within eastern Contra Costa County, California (Figure 1-1). The inventory area covers approximately 174,018 acres, or one-third of Contra Costa County, and is entirely within the eastern portion of the County. The inventory area is approximately bounded on the south by the Alameda–Contra Costa County line; on the east by the westernmost Delta sloughs between Oakley and the Alameda–Contra Costa County line; on the north by the San Joaquin River shoreline; and on the southwest and west by the western edges of the watersheds of Kellogg and Marsh Creeks, the Mount Diablo Meridian, and the Clayton sphere of influence.

The inventory area encompasses five incorporated cities: Brentwood, Clayton, Oakley, Pittsburg, and Antioch. Three-quarters of the land in the inventory area, approximately 129,414 acres, are in unincorporated areas of Contra Costa County.

2.1.2 HCP/NCCP Participating Jurisdictions

The proposed HCP/NCCP has been prepared by a number of local entities under a joint powers authority agreement (the HCPA). These entities are Contra Costa County; EBRPD; CCWD; and the Cities of Brentwood, Clayton, Oakley, and Pittsburg. The City of Antioch is within the proposed HCP/NCCP inventory area but is not a participant to the HCP/NCCP.

A new organization would be created to oversee assembly and operation of the Preserve System and ensure compliance with all terms of the HCP/NCCP, permits, and Implementing Agreement. This *Implementing Entity* would be run by a Governing Board of representatives from the cities and the County and an Executive Director. The Implementing Entity would be advised by representatives of USFWS, DFG, other regulatory agencies (when regional wetlands permitting programs are established), local land management agencies, a pool of Science Advisors, and a public advisory committee. It is anticipated that the Implementing Entity would partner with existing agencies and organizations to conduct a significant portion of its responsibilities.

Contra Costa County, the County Flood Control District (not member of HCPA) and the cities of Brentwood, Clayton, Oakley, Pittsburg, and the Implementing Entity would be issued Section 10(a)(1)(B) permits by USFWS and Section 2835 permits by DFG and referred to as the *Permittees* under the proposed HCP/NCCP. Under the terms of the IA, the take of covered species would be authorized for covered activities within each Permittee's jurisdiction.

2.2 Proposed Project and Alternatives

NEPA and CEQA require that an EIS/EIR evaluate a reasonable range of alternatives to the proposed project, including the No-action Alternative. While there is no clear rule for determining a reasonable range, NEPA and CEQA provide guidance that can be used to define the range of alternatives for consideration in the EIS/EIR.

According to NEPA, the range of alternatives required in an EIS is governed by the *rule of reason*, which requires an EIS to set forth only those alternatives necessary to permit a reasoned choice. An EIS must consider a reasonable range of options as defined by the specific facts and circumstances of the proposed action. First, alternatives must fulfill the basic requirements of the statement of purpose and need. Second, alternatives to be analyzed should not have more significant impacts on the environment than the proposed action or result in impacts that are indistinguishable from those of the proposed action. Finally, alternatives must be able to be feasibly carried out in the context of technical, economic, environmental, and other factors. If alternatives have been eliminated from detailed study, the EIS must briefly discuss the reason for their elimination (40 CFR 1502.14[a]; Forty Questions No. 1[a]).

The range of alternatives under CEQA is similarly governed by the rule of reason. Alternatives under CEQA must meet the basic project objectives, should not result in greater impacts on the environment than those of the proposed project, and must be feasible. In determining whether alternatives are feasible, Lead Agencies are guided by the general definition of feasibility found in CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." In accordance with CEQA Guidelines Section 15126.6[f], the Lead Agency should consider site

suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent's control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the Lead Agency relied upon in making the selection. It should also identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (CEQA Guidelines Section 15126[d][2]).

A No-Action (NEPA)/No-Project (CEQA) Alternative is also required to be considered in an EIS/EIR. The No-Action/No-Project alternative allows decision makers to compare the impacts of approving the project to the impacts of not approving the project.

2.2.1 Approach to Developing Alternatives

Alternatives for analysis in the EIS/EIR were considered in the context of the CEQA/NEPA screening criteria described above. For the purposes of analyzing the proposed HCP/NCCP, these criteria are articulated below.

- The feasibility of an alternative in terms of economic, environmental, legal, social, and technological factors.
- The ability of an alternative to fulfill the purpose and need under NEPA and to achieve most of the objectives under CEQA.
- The potential for an alternative to avoid or substantially reduce one or more significant impacts of the proposed HCP/NCCP.

Alternatives that were determined to be infeasible, to fail to meet at least some of the HCP/NCCP objectives, or to ineffectively avoid or substantially lessen the significant impacts of the proposed HCP/NCCP were dismissed from further consideration. Alternatives determined to be feasible or potentially feasible, to meet objectives, and to have some potential to avoid or substantially lessen the significant impacts of the proposed HCP/NCCP were carried forward for more detailed analysis in the EIS/EIR.

The following initial range of alternatives was developed.

- Species coverage and growth model alternatives suggested by members of the public during the scoping process.
- No-Project/No-Action alternative required by CEQA and NEPA.
- No-take alternatives developed for the proposed HCP/NCCP.
- Other alternatives that varied in terms of species coverage, landscape coverage, permit term, or conservation strategy.

2.2.2 Alternatives Carried forward for Detailed Analysis

The following alternatives were found to be feasible or potentially feasible, to meet HCP/NCCP objectives, and to have some potential to avoid or substantially lessen the significant impacts of the proposed HCP/NCCP, and were carried forward for detailed evaluation in the EIS/EIR.

- Alternative 1: Proposed Plan (Conservation Strategy A)
- Alternative 2: Conservation Strategy B
- Alternative 3: Reduced Development Area.
- Alternative 4: No Action/No Project

Alternatives eliminated from detailed evaluation in the EIS/EIR are presented at the end of this chapter.

Alternative 1: Proposed Plan (Conservation Strategy A)

The proposed HCP/NCCP is a regional, comprehensive plan that establishes a framework for complying with State and Federal endangered species regulations while accommodating future growth within the inventory area. Currently, the permitting and mitigation of impacts on special-status species in eastern Contra Costa County is undertaken on a case-by-case basis; not only is this approach time consuming and expensive, but it also fails to provide a mechanism for coordinated, regional conservation. The proposed HCP/NCCP is designed to address these shortcomings by coordinating the process for permitting and mitigating the take of covered species in eastern Contra Costa County, and by implementing a broad strategy for conservation of species and habitats.

USFWS and DFG have authority to regulate the take of threatened and endangered or otherwise protected species. One objective of the proposed HCP/NCCP is to provide the basis for USFWS and DFG to grant take authorization for otherwise lawful actions (e.g., development) that may result in the take of individuals of a protected species. The proposed HCP/NCCP serves as an HCP pursuant to Section 10(a)(1)(B) of the ESA, and as an NCCP under the NCCPA of 2003. The HCPA is requesting ITPs with terms of 30 years from USFWS and DFG. Conservation and management responsibilities, as well as any implementation assurances, are identified in the IA between USFWS, DFG, and the participating land use authorities.

The proposed HCP/NCCP identifies a range of covered activities (discussed below). These are specific projects and activities in the inventory area that may result in take of listed species or species that may become listed during the permit term. These activities and projects are considered in assessing the total amount

of take of covered species that would be expected in the inventory area and in developing the overall HCP/NCCP conservation strategy. Approval of the proposed HCP/NCCP does not confer or imply authorization of these specific activities or projects; all covered activities and projects would be subject to the approval authority of the individual Permittees in whose jurisdiction the activity or project would occur.

Under the proposed HCP/NCCP, project proponents would submit applications for incidental take authorization to the local land use authority as part of the standard project review and approval process. The local land use authority would review the application for completeness and for compliance with the terms of the proposed HCP/NCCP. Take authorization would be issued if the application is complete and compliant. As part of the standard approval process, projects would be require separate, project-level environmental review under CEQA and, in some cases, NEPA.

An Implementing Entity created by the Permittees would be responsible for conducting broad conservation and management measures, such as acquiring and maintaining preserve land, restoration and enhancement of habitat, tracking the success of the conservation strategy, and instituting any necessary changes. Projects conducted by the Implementing Entity that are subject to discretionary approval would also be reviewed by the relevant Permittees, as part of the standard project review process, to ensure consistency with the proposed HCP/NCCP and to be extended coverage for take.

In order to comply with the requirements of ESA, CESA, and NCCPA, the proposed HCP/NCCP addresses a number of required elements, including species and habitat goals and objectives; the evaluation of the effects of covered activities on covered species, including indirect and cumulative effects; a conservation strategy; a monitoring and adaptive management program; descriptions of changed circumstances and remedial measures; identification of funding sources; and an assessment of alternatives to take of listed species. The key elements of the proposed HCP/NCCP are summarized below.

Permit Area

The permit area is the portion of the inventory area in which the HCPA is requesting authorization from USFWS and DFG for take of covered species. Because of the difficulty in predicting the extent of future growth in East Contra Costa County, the proposed HCP/NCCP has been designed to accommodate a range of growth scenarios. In order to bookend the reasonable range of expected growth, the proposed HCP/NCCP defines two permit areas: one that includes the *initial urban development area* and one that includes the *maximum urban development area*. Both permit areas include the same set of rural infrastructure projects and activities on HCP/NCCP preserves described below. Although the initial and maximum urban development areas bound the range of urban development, the final permit area may lie somewhere in between. This will depend on local land use decisions that occur during the permit term. The proposed HCP/NCCP therefore encompasses a range of alternative permit areas.

Both the initial and maximum urban development areas are based on current general plans of the local jurisdictions.

Initial Urban Development Area

The initial urban development area is defined by the following parameters.

- The lands within the ULL of Contra Costa County or the city limits of the participating cities (Pittsburg, Clayton, Oakley, and Brentwood), whichever is largest.
- The footprint of specific rural infrastructure projects outside the ULL, which are described in the proposed HCP/NCCP.
- The boundary of any land acquired in fee title or conservation easement and managed under the proposed HCP/NCCP (i.e., the HCP/NCCP Preserve System).

Up to 9,796 acres of ground-disturbing urban development activities would be permitted under the initial urban development area (Figure 2-1).

Maximum Urban Development Area

The maximum urban development area is the largest extent to which the permit area could expand under the terms of the proposed HCP/NCCP. Under this scenario, an additional 3,233 acres of ground-disturbing urban development activities within the permit area (for a maximum of 13,029 acres) would be allowed, as long as the conditions of the proposed HCP/NCCP are met.

Expansion or contraction of the proposed HCP/NCCP permit area as a result of local land use decisions made independently of the HCP/NCCP (e.g., change in the ULL, annexation) could occur, provided that the revised permit area boundary is consistent with successful implementation of the proposed HCP/NCCP conservation strategy. For example, if a participating city expands its city limit, or if the ULL shrinks or expands, the permit area for the proposed HCP/NCCP would automatically expand or shrink to reflect the land use change, as long as the following conditions are met.

- The revised urban development area, together with projected impacts from covered activities outside the urban development area, does not exceed the maximum land cover or total impact projections (i.e. take limits) established in the proposed HCP/NCCP.
- The revised urban development area excludes areas designated as high priority for acquisition under the proposed HCP/NCCP conservation strategy.
- The revised urban development area is consistent with successful implementation of the proposed HCP/NCCP conservation strategy.

Covered Activities

Covered activities are the specific activities or projects for which take authorization would be provided. Take authorization pursuant to the proposed

HCP/NCCP would be required via implementing ordinances adopted by each applicable jurisdiction. Identification of covered activities provides a basis to assess the anticipated level of take that may occur under the proposed HCP/NCCP and to develop the appropriate conservation requirements. The majority of covered activities would not be specifically authorized or approved as part of the HCP/NCCP approval; however, very few such activities (i.e., activities within the HCP/NCP preserves) undertaken by the HCP/NCCP Implementing Entity would be covered activities authorized as part of HCP/NCCP approval. The majority of the covered activities not undertaken by the HCP/NCCP Implementing Entity, either have or would be, required to undergo separate environmental review and permit approval independent of the proposed HCP/NCCP, relying on the HCP/NCCP for ESA and CESA compliance.

Covered activities and projects within the HCP/NCCP fall within three distinct categories.

1. **Activities and projects associated with urban growth.** Covered activities within the urban development area include all types of urban development. This category of covered activities is intended to be as inclusive as possible to account for all types of ground-disturbing activities and projects, public and private, which could occur in an urbanized area. It is assumed that urban development within the urban development area would be conducted in accordance with the general plans for each of the local land use authorities.
2. **Specific infrastructure projects outside the ULL.** Rural infrastructure projects outside the ULL provide infrastructure that supports urban development and that has limited impacts on covered species. The proposed HCP/NCCP would allow for up to 1,126 acres of impact from rural infrastructure projects for either the initial or maximum urban development area. Covered infrastructure projects are listed in Table 2-1.
3. **Activities that occur inside the proposed HCP/NCCP preserves.** Covered activities within the preserves include the following.

    - Construction and maintenance of recreational or management facilities. This category includes the construction and maintenance of recreational facilities such as trails, parking lots, restrooms, and educational kiosks. This category also includes construction, maintenance, and use of facilities needed to manage the preserves, including but not limited to preserve field offices, maintenance sheds, carports, roads, bridges, fences, gates, wells, stock tanks, and stock ponds.
    - Habitat enhancement, restoration, and creation. The HCP/NCCP conservation strategy sets forth requirements for habitat enhancement, restoration, and creation. Enhancement activities generally fall under the preserve management category. Habitat restoration and creation would generally be disruptive only in the short term because these activities may involve soil disturbance, removal of undesirable plants, and limited grading. If such activities occur and are consistent with this HCP/NCCP, they are covered by the permit.

- Management activities. This category includes all management actions required by the HCP/NCCP or other actions that might be necessary to achieve HCP/NCCP biological goals and objectives. These actions may include but are not limited to: vegetation management; fire management; travel through the preserve on foot, mountain bicycle, all-terrain vehicle (ATV), truck, or other off-road vehicle; relocation of covered species from impact sites within preserves; demolition or removal of structures or roads; and control of introduced predators.
- Surveys for covered species, vegetation communities, and other resources. Implementing Entity personnel or their contractors would conduct surveys for covered species, vegetation communities, and other resources within the preserves on a regular basis for monitoring, research, and adaptive management purposes.
- Emergency activities. Emergency activities include firefighting, evacuation of injured persons or livestock, and repair of existing facilities due to floods or fire.
- Adjoining Landowners. With certain provisions and restrictions, agricultural lands within 1 mile of the preserve boundary would be eligible for take coverage during the course of routine agricultural activities and during the permit term.
- Recreation. Low intensity recreational use of HCP/NCCP preserves is permitted under the guidelines of the HCP/NCCP.
- Utility construction and maintenance. Public and private utility infrastructure such as electric transmission lines, gas pipelines, petroleum pipelines, telecommunications lines, or cellular telephone stations may cross HCP/NCCP preserves or need to cross the preserves.

Table 2-1a. Rural Infrastructure Projects outside the Urban Limit Line – Road Projects

Rural Infrastructure Project	Project Summary
Buchanan Bypass	The City of Pittsburg is leading planning for the Buchanan Road Bypass to implement their General Plan (City of Pittsburg 2001). Plans for the Buchanan Road Bypass call for a 4 lane major arterial that connects Kirker Pass Road with Somersville Road and Donlon Boulevard. A preliminary project route alignment is available in the Buchanan Road Bypass Programmatic EIR (Duncan & Jones 1993). Associated with the construction of the Buchanan Bypass is the extension of Donlon Blvd to connect to the Bypass. The precise alignment and environmental impacts would be addressed in a project-specific EIR.
Brentwood-Tracy Expressway/State Route 239	A variety of organizations have raised a conceptual proposal to make the Byron Highway into a state highway (State Route 239) to increase road capacity between Contra Costa and San Joaquin Counties. New planning studies to be initiated in 2005 would look at the feasibility of using the Byron Highway for an alignment of SR239 that would extend from the Vasco Road to Byron Highway Connector described above to the County line. This project would convert the Byron Highway to an expressway or multi-lane freeway depending on the outcome of planning studies. The road would connect Brentwood with Interstate 205 or 580 in San Joaquin County. SR239 may replace the Byron Highway widening project described above.

Rural Infrastructure Project	Project Summary
Bridge Replacement, Repair, or Retrofit	Contra Costa County maintains over 50 bridges in the inventory area on public roads, most of which are outside the ULL. During the permit term, these bridges may need repair, seismic or other safety retrofit, or complete replacement. The replacement, repair, or retrofit of all County-maintained bridges within the inventory area are covered activities. Increasing the number of lanes on the bridge is not a covered activity unless it is associated with a road construction project specifically covered by this HCP/NCCP.
Byron Airport Expansion	The Byron Airport is owned and operated by Contra Costa County. The Byron Airport Master Plan (2004) describes proposed land uses at the site, including plans for additional aviation and commercial development. Future development plans include providing additional commercial services at the Byron Airport along the area bordered by Holey Road, Byron Hot Springs Road, and the existing NW–SE runway of the airport. Additional land is reserved for aviation use along the W–E runway. The existing NW-SE and W-E runways are proposed for extension to the southeast and east by 1,500 feet and 900 feet, respectively. A maximum of approximately 360 additional acres could be developed or otherwise impacted by the airport if the Master Plan is fully implemented. However, approximately 68 of these acres are in areas where development is restricted by Federal Aviation Administration regulations so future impacts are very unlikely there. Permits issued by USFWS and DFG in 1992 and 1993 covered approximately 200 acres of impacts to natural land-cover types. At present, the developed footprint of the airport (including the grassy medians between the runways and taxiways) is approximately 112 acres. Approximately 88 acres of take coverage remains for the airport under the earlier permits.
Byron Highway Northern Extension	Contra Costa County, in cooperation with other agencies, is planning a variety of improvements to the Byron Highway, also known as J4. As specified in their General Plan, the County plans to extend the Byron Highway north from Delta Road to East Cypress Road (Contra Costa County 2005). Preliminary engineering and environmental work on the extension is scheduled for 2006 and 2007.
Bryon Highway Widening	Shoulder widening projects to improve the safety of the Byron Highway are planned to occur in phases at Camino Diablo and from Hot Springs Road to the County Line. Construction is planned for completion in 2007. The County also plans to widen the Byron Highway along the frontage of the school district office and Byron Elementary School to provide a dual left turn lane. Preliminary engineering work is scheduled for 2005 and construction is planned for completion in 2007. Intersection improvements are also planned at the intersection of the Byron Highway and State Route 4.
eBART	The Contra Costa Transportation Authority (CCTA) and the San Francisco Bay Area Rapid Transit District (BART) have completed the State Route 4 East Corridor Transit Study, which recommends short-term and long-term public transit improvements, along with the planned highway and roadway improvements, from State Route 242 in the west to the County Line in the east. One such recommendation is EBART. This rail service extension would run in the median of SR4 from Bay Point to Loveridge Road and then on the existing railroad tracks through Byron and on to Tracy. New station locations proposed include: Brentwood, Antioch, Oakley, and Byron. Specific locations are yet to be determined. In November 2002 a preferred conceptual alternative was selected. EIS/EIR studies would be initiated in 2005.

Rural Infrastructure Project	Project Summary
Kirker Pass Road Widening	Contra Costa County is considering adding a truck-climbing lane on Kirker Pass Road. The project is planned on Kirker Pass Road between Clearbrook Drive in Concord and the Pittsburg city limit for approximately 9,600 feet. The northbound lane is from Clearbrook to the northern Hess intersection. The southbound lane is from Pittsburg to the southern Hess Road.
Marsh Creek Road Realignment at Selected Curves	Contra Costa County plans to realign selected curves of Marsh Creek Road and widen shoulder between Aspara Drive (Aspara Drive is located just east of Morgan Territory Road) and Deer Valley Road. The County intends to commence initial engineering work in 2007-2008. Construction is expected to continue beyond 2010.
New Bicycle Trails	The first countywide bicycle and pedestrian plan for Contra Costa County was prepared in 2003 (Contra Costa Transportation Authority 2003). This plan outlines policies for the maintenance and expansion of the existing network of over 350 miles of bikeway and trails to over 600 miles. The majority of these existing and new projects are within the urban development area so would be covered by this HCP/NCCP automatically. County bike trail projects outside the urban development area that are covered by this HCP/NCCP include (Contra Costa Transportation Authority 2003): • Kirker Pass Road trail (5.2 miles[1], on-street) • Evora Road trail (2.3 miles, on-street) • Marsh Creek-Camino Diablo bikeway (12.5 miles, on-street) • Vasco Road trail (8.6 miles, on-street) • Deer Valley Road trail (6.5 miles, on-street) • Balfour Road trail (2.4 miles, on-street) • East County Hwy 4 trail (7.3 miles, on-street) • Bryon-Bethel Island bikeway (10.2 miles, on-street and off-street) • Union Pacific Rail trail (19.5 miles, off-street) • De Anza National Trail-Rock Slough-Bethany Reservoir bikeway (8.5 miles, off-street in eastern edge of inventory area) • Mokelumne Crest to Coast trail (11.1 miles, off-street, from Brentwood east to Sierras) • Cypress Road trail (on and off-street) • Marsh Creek regional trail (4.5 miles, off-street along Marsh Creek above and below Marsh Creek Reservoir) • Big Break regional trail (2.5 miles, off-street; some outside the inventory area) • State Route 4 Bypass Trails (off-street) • Other trail projects approved for coverage by USFWS and DFG.

[1] Approximate mileage presented for total unbuilt trail segment; length within inventory area and outside the initial UDA may be less than this amount.

Rural Infrastructure Project	Project Summary
Road Safety Improvements	Contra Costa County must upgrade the safety of existing rural roads as conditions change and traffic on these roads increases. The following types of road safety projects covered by this HCP/NCCP include, but are not limited to: • Constructing, resurfacing, or regrading road shoulders • Increase road lane widths, create passing lanes, or add turn lanes (but not increasing the number of lanes) • Minor curve realignment for safety purposes (less than 250 feet long and less than 0.25 acre of new ground disturbance • Install traffic signals, signs, flashing beacons, or other safety warnings • Paint new lane striping • Installing "rumble" strips or other safety markers • Install retaining walls, medians (less than 0.25 mile long, unless approved by USFWS and DFG), metal beam guard rails, or other safety barriers • Other road safety improvements that do not result in a significant change in road width or alignment or that are approved for coverage by USFWS and DFG. Expanding the number of lanes on existing roads could be considered road safety improvements but they are not covered by this HCP/NCCP unless associated with a specific road project cited in this chapter.

Rural Infrastructure Project	Project Summary
Road Widening or Extension Projects	Contra Costa County plans to increase the capacity of the following roads outside of the current ULL: • **Bethel Island Road Widening.** Bethel Island Road, a north-south road east of Oakley, would be widened from a two-lane road to a four-lane arterial from East Cypress to Gateway Road on Bethel Island. A new bridge would be constructed over Dutch Slough. Only the portion of the road-widening project within the inventory area is covered by the HCP/NCCP. • **Cypress Road Widening.** In the same vicinity as Bethel Island Road, Cypress Road, an east-west road, would be widened to a four-lane arterial from SR4 to Bethel Island Road. The new road would have a grade separation at the Burlington Northern railroad crossing and a new signal at SR4. Most, if not all, of this road-widening project would be within the UDA in Oakley. • **Sand Creek Road Extension.** An east-west road in the Brentwood area, Sand Creek Road would be extended eastward approximately one-third of a mile from the Brentwood City Limits to connect to Sellers Avenue. The extended road would be a four-lane arterial. • **Sycamore Avenue Extension.** An east-west road in the Brentwood area just south of Sand Creek Road, Sycamore Avenue would be extended approximately one-third of a mile eastward from the Brentwood City Limits to connect to Sellers Avenue. The extended road would be a two-lane roadway. • **Walnut Boulevard Widening.** An north-south road in the Brentwood area, Walnut Boulevard would be widened from two to four lanes over an approximately 2.2 mile segment from the Brentwood City Limit south to the State Route 4 Bypass and Vasco Road. • **Marsh Creek Road Widening.** An east-west road south of Brentwood, Marsh Creek Road would be widened from two to four lanes over an approximately 4 mile segment from the State route 4 Bypass east to the existing State Route 4 near Discovery Bay. • **Balfour Road Widening.** An east-west road in the Brentwood area, Walnut Boulevard would be widened from two to four lanes over an approximately 1.3 mile segment from the Brentwood City Limit west to Deer Valley Road. • **San Marco Road Extension.** The City of Pittsburg proposes in its General Plan to extend San Marco Road from the current San Marco subdivision south and east to connect to Bailey Road at or near the Bailey Estates Subdivision. The roadway would be two to four lanes. A precise alignment has not been determined. The portion of this road extension outside the initial UDA is covered by the HCP/NCCP. The portion inside the initial UDA will be covered inside the Urban Development Area. The portion of the proposed road extension outside the initial UDA is approximately one mile long. The UDA may change in this area as a result of the new Pittsburg ULL. If this change occurs, the portion of the San Marco Road Extension that crosses open space is still subject to the road design requirements in Table 6-6. • **State Route 4 Widening to Discovery Bay.** SR 4 is a mix of two and four lanes. Oakley and the County are proposing to expand the portions of SR 4 that are currently two lanes to four lanes to improve traffic flow and safety. These two-lane portions occur between Oakley and Discovery Bay and cross the County's agricultural core. This project is covered by the HCP/NCCP.

Rural Infrastructure Project	Project Summary
Vasco Road to Byron Highway Connector	The County is considering extending an existing road or building a new road to provide a connection between Vasco Road (State Route 84) and the planned State Route 239 (now the Byron Highway). An amendment to Contra Costa County's General Plan is necessary before work can begin on this project. Because the location of this connector road is not yet determined, the HCP/NCCP would cover the footprint of this road within a study area bounded by Vasco Road, Byron Highway, Armstrong Road to the south, and Camino Diablo to the north. An extension and widening of Armstrong Road is one possible scenario that has been proposed.
Vasco Road Widening/State Route 84	Vasco Road would be widened and portions realigned as a safety and capacity enhancement from State Route 4 Bypass to I-580 in Alameda County. The initial improvements would address safety issues. Later phases would provide a four-lane divided expressway to standards suitable for route adoption by Caltrans as State Route 84.
Utility Construction	Public and private utility infrastructure such as electric transmission lines, gas pipelines, petroleum pipelines, telecommunications lines, or cellular telephone stations are covered activities outside the UDA and outside the HCP/NCCP preserves. Because of the uncertainty in their location and project footprint, coverage for these projects will be decided on a case-by-case basis in consultation with the Implementing Entity, USFWS, and DFG. This will allow alternative siting or redesign, if possible, to avoid or minimize impacts on covered species and natural communities.

Table 2-1b. Rural Infrastructure Projects outside the Urban Limit Line—Flood Protection Projects

Rural Infrastructure Project	Project Summary
Flood Protection Projects	The Contra Costa County Flood Control and Water Conservation District (County Flood Control District) is responsible for providing flood protection within formally designated drainage areas (called "formed drainages") within Contra Costa County. Construction and maintenance of flood protection facilities, including detention basins, reservoirs, creeks, and canals, is funded by development fees and assessments in each formed drainage. Drainages of the County Flood Control District span city and county boundaries, so the District has jurisdiction both in unincorporated portions of the County and within cities, including the City of Antioch[2]. Specific projects and activities of the County Flood Control District are proposed in the District's 5-year Capital Improvement Program (CITE). The following projects outside the initial UDA or within the City of Antioch are proposed for coverage in the HCP/NCCP.

[2] The East Antioch Creek watershed (Drainage Area 56) and West Antioch Creek watershed (Drainage Area 55) lie primarily within Antioch.

Rural Infrastructure Project	Project Summary
Construction and Expansion of Detention Basins	The County Flood Control District maintains and operates several detention basins in the inventory area for flood and sedimentation control. Two existing facilities need to be expanded to meet the growing population of the inventory area (Table 2-5). Two of these basins, Lower Sand Creek and Deer Creek, are within the Brentwood city limits and are already covered by the HCP/NCCP as urban development. Three other basins Lindsey, Trembath, and Oakley, are within Antioch. Although urban development in Antioch is not covered by the HCP/NCCP, these projects are covered because they are projects of the County Flood Control District. All of the proposed and expanded basins are off-stream. The total footprint of the new and expanded basins is approximately 400 acres. The County Flood Control District also maintains and operates small flood control reservoirs within and outside the initial UDA that support urban development. The County Flood Control District proposes to expand the Marsh Creek reservoir substantially. The proposed expansion of the Los Vaqueros Reservoir by the Contra Costa Water District is not a covered project. It is discussed at the end of this chapter.

Rural Infrastructure Project	Project Summary
Marsh Creek Reservoir Expansion	The design capacity of the Marsh Creek Reservoir has diminished substantially due to silting and vegetation growth. Dredging and vegetation removal is no longer an option to restore this capacity because the reservoir's high habitat value and the need to minimize disturbing sediment contaminated with mercury. Mercury mines active in upper Marsh Creek from the 1860s to 1950s have greatly increased the deposition of mercury into Marsh Creek (Slotten et al. 1996, 1997, 1998). Much of this mercury-laden sediment has been accumulating in the Marsh Creek reservoir behind the dam. The County Flood Control District wishes to restore and expand the reservoir's flood storage capacity to accommodate 100-year flood event to provide additional protection to the expanded development downstream in Brentwood. To accomplish this, the County Flood Control District in 2002 acquired 211 acres immediately south of the reservoir on both sides of Marsh Creek Road (152 acres on the west side of the road and 59 acres on the east side). All or a portion of this land would be used to detain additional water during high flow events only. The land elevation to the south of the reservoir would be lowered by up to 5–10 feet, and small channels would be installed to connect this new basin with either Marsh Creek, the south side of the reservoir, or both (Detjens pers. comm.). The new basin would be designed to flood once every 5–10 years and drain within 72 hours. The elevation of the new basin would be higher than that of the wet pool of the reservoir; accordingly, the wet pool would not be expanded. In addition, mercury-laden sediment in the reservoir would not be disturbed. The project is currently scheduled in the County's Capital Improvement Program for 2009. The land is currently grazed by cattle and would continue to be grazed even during use as a dry detention basin; consequently, most of the time this area would function as a grassland or pasture. It is expected that portions of the new basin would need to be dredged periodically to remove accumulated sediment, possibly every 10–15 years. Riparian habitat along Marsh Creek on land owned by the County Flood Control District is of high quality but discontinuous and presents some of the best riparian restoration opportunities in the inventory area. (The Marsh Creek Reservoir Expansion project would have little or no impact on riparian vegetation.) In addition, the grassland adjacent to the creek could be restored to native grassland, valley oak savanna (similar to the valley oak savanna on the Los Vaqueros property nearby), expanded cottonwood-willow forest, or a combination of these land-cover types. Habitat on this site could also be improved for San Joaquin kit fox. All these restoration options may be compatible with the site's use as a high-flow detention basin. The County Flood Control District is interested in exploring restoration opportunities on this site and partnering with the HCP/NCCP Implementing Entity to accomplish them. Because of the uncertainty in the project design, these restoration elements would be developed with the Implementing Entity, DFG, and USFWS when project funding becomes available. This project is a covered activity as long as restoration opportunities described above are considered in project design and there is no change in the potential exposure of covered species to biologically available mercury as a result of the project.

Rural Infrastructure Project	Project Summary
Channel Improvement and Widening	The County Flood Control District maintains extensive networks of creek channels in the inventory area, mostly through urban areas within the initial UDA. Many of these channels require improvement or widening to increase flood capacity and provide greater opportunity for habitat restoration that is compatible with flood protection. All such projects within the UDA within participating cities are covered projects under the HCP/NCCP (i.e., as urban development). The County Flood Control District plans several channel improvement/widening projects within developed areas outside the initial UDA or in Antioch, all of which are covered by this HCP/NCCP within the inventory area: • Install storm drain line and improve unnamed creek near Port Chicago Highway and Skipper Road in Bay Point (Project DA 48B) (only that portion of the project inside the inventory area is covered by the HCP/NCCP), and • Improve West Antioch Creek near 10th Street in Antioch (Project DA 55).

Other activities or projects not specifically described above may be evaluated for coverage under the proposed HCP/NCCP on a case-by-case basis. All activities or projects seeking coverage under the proposed HCP/NCCP would be subject to approval by the local jurisdiction (city or County) and the HCP/NCCP Governing Board. Coverage would be provided if the activity or project meets the following requirements.

- Does not preclude achieving the biological goals and objectives of the proposed HCP/NCCP.
- Is a type of impact evaluated in the Plan and in the BO issued for the proposed HCP/NCCP.
- Does not substantially reduce the amount of take coverage available under the permit for expected future activities and projects.
- Does not require a major or minor amendment to the proposed HCP/NCCP.

Pesticide use would not be covered by the ESA Section 10 permit but will be covered by the NCCP Section 2835 permit. Projects with a federal nexus would receive take authorization through Section 7 of the ESA and therefore are not covered by the HCP/NCCP; however, mitigation for these projects is expected to be consistent with the HCP/NCCP. The following activities or projects outside the urban development area are specifically not covered by the HCP/NCCP.

- Los Vaqueros Reservoir expansion.
- Routine and ongoing agricultural activities.
- New irrigated agriculture.
- Wind turbine maintenance, operation, or expansion.
- Mining operation.
- Rural residential development.
- New rural landfills.

- Activities within Seal Beach NWS, Detachment Concord.
- Construction of rural infrastructure projects not listed in the HCP/NCCP.

The potential impacts of these activities on sensitive species and other environmental resources are considered in the cumulative impact analysis in Chapter 4, *Environmental Consequences*.

Conservation of Aquatic and Wetland Resources

Conservation of aquatic and wetland resources is also a focus of the proposed HCP/NCCP. Regional data on wetlands, streams, reservoirs, sloughs, and ponds was collected for the HCP/NCCP to support creation of regional conservation measures and provide the framework for future regional or programmatic compliance with Sections 404 and 401 of CWA and Section 1602 of the California Fish and Game Code. The HCP/NCCP includes actions subject to Sections 404 and 401 of the CWA and Section 1602 of the California Fish and Game Code. These actions are analyzed as part of the project with the intent of providing the Regional Water Quality Control Board (RWQCB) (San Francisco and Central Valley Regions) and DFG with the necessary CEQA coverage for issuance of the programmatic permits/agreements now under development.

Covered Species

Covered species are species that would be authorized for take and conserved and protected through the proposed HCP/NCCP. The HCP/NCCP proposes 28 special-status species for coverage under the ITPs (Table 2-2).

Table 2-2. Species Proposed for Coverage

		Status[1]	
Common Name	Scientific name	State	Federal
Mammals			
Townsend's western big-eared bat	*Corynorhinus townsendii townsendii*	CSC	–
San Joaquin kit fox	*Vulpes macrotus mutica*	ST	FE
Birds			
Tricolored Blackbird	*Agelaius tricolor*	CSC-1	–
Golden Eagle	*Aquila chrysaetos*	FP	BGPA
Western Burrowing Owl	*Athene cunicularia hypugea*	CSC-1	–
Swainson's Hawk	*Buteo swainsoni*	ST	–
Reptiles			
Silvery legless lizard	*Anniella pulchra pulchra*	CSC	–
Alameda whipsnake	*Masticophis lateralis euryxanthus*	ST	FT
Giant garter snake	*Thamnophis gigas*	ST	FT
Western pond turtle	*Clemmys marmorata*	CSC	--
Amphibians			
California tiger salamander	*Ambystoma californiense*	CSC	FT
California red-legged frog	*Rana aurora draytonii*	–	FT

Common Name	Scientific name	Status[1] State	Status[1] Federal
Foothill yellow-legged frog	*Rana boylii*	CSC	–
Invertebrates			
Longhorn fairy shrimp	*Brachinecta longiantenna*	–	FE
Vernal pool fairy shrimp	*Brachinecta lynchi*	–	FT
Midvalley fairy shrimp	*Brachinecta mesovallensis*	–	–
Vernal pool tadpole shrimp	*Lepidurus packardi*	–	FE
Plants		**CNPS**	
Mount Diablo manzanita	*Arctostaphylos auriculata*	1B	–
Brittlescale	*Atriplex depressa*	1B	–
San Joaquin spearscale	*Atriplex joanquiniana*	1B	–
Big tar Plant	*Blepharizonia plumosa*	1B	–
Mount Diablo fairy lantern	*Calochortus pulchellus*	1B	–
Recurved larkspur	*Delphinium recurvatum*	1B	–
Round-leaved filaree	*Erodium macrophyllum*	1B	–
Diablo helianthella	*Helianthella castanea*	1B	–
Brewer's dwarf flax	*Hesperolinon breweri*	1B	–
Showy madia	*Madia radiate*	1B	–
Adobe navarretia	*Navarretia nigelliformis* ssp. *nigelliformis*	1B	–

[1]**Status:**

Federal
FE Listed as endangered under ESA
FT Listed as threatened under ESA
BGPA Bald and Golden Eagle Protection Act

State
ST Listed as threatened under CESA
CSC California special concern species identified by DFG
CSC 1 Bird Species of Special Concern—First Priority identified by DFG
FP Fully protected under the California Fish and Game Code

California Native Plant Society (CNPS)
1B Rare or endangered in California and elsewhere

Proposed Conservation Strategy

The conservation strategy is a program of specific conservation measures that, when implemented in concert, would achieve the biological goals and objectives of the proposed HCP/NCCP. The conservation strategy would be implemented to minimize and mitigate the impacts of covered activities, contribute to the recovery of listed covered species, and help avoid the listing of nonlisted covered species by protecting and enhancing their populations.

Preserve System

The central feature of the proposed HCP/NCCP conservation strategy is the creation of a Preserve System (HCP/NCCP Conservation Measure 1.1) that

would achieve the following objectives assuming that the anticipated level of development occurs.

- Preserves approximately 23,800 acres of land with the initial urban development area (range of21,450–27,050 acres) or approximately 30,300 acres of land under the maximum urban development area (range of26,050–34,350 acres) for the benefit of covered species, natural communities, biological diversity, and ecosystem function.
- Preserves major habitat connections linking existing public lands and protected private lands.
- Incorporates a range of habitat and population management and enhancement measures.
- Restores or creates up to 424 or 586 acres (under the initial or maximum urban development areas, respectively) of specific habitats and land-cover types.

The conservation strategy provides for the establishment, enhancement, and long-term management of the preserves for the benefit of covered vegetation communities, covered species, and overall biodiversity and ecosystem functions. The preserves would also serve to achieve other complementary goals such as recreation, grazing, and crop production, as long as the primary biological goals of the proposed HCP/NCCP are met and not compromised. The system of new preserves is anticipated to be linked to existing protected lands to form a network of protected areas outside the area where new urban growth would be permitted under the proposed HCP/NCCP.

To develop priorities and identify potential locations for preserve acquisition, the inventory area is divided into six Acquisition Analysis Zones (Zones), which are further divided into subzones as necessary to distinguish between important landscape features (Figure 2-2). The Zones encompass all undeveloped land outside the major urban areas of Bay Point, Pittsburg, Antioch, Oakley, and Brentwood that are not already protected in large preserves. Most of this undeveloped land occurs outside the ULL.

Acquisition priorities for each Zone were developed primarily on the basis of the ecological opportunities and constraints for collectively achieving the biological goals and objectives for covered species and natural communities. Factors that guide conservation opportunities include land-cover type, extent, and distribution; existing land use patterns; and planned future land use activities. Most natural land-cover types would be acquired in Zones 1–5. Acquisition in Zone 6 would focus on cropland and pasture along Marsh Creek and Kellogg Creek, and adjacent to Dutch Slough in Oakley, mainly as habitat for Swainson's hawk, western burrowing owl, giant garter snake, and tricolored blackbird.

The timing and sequence of land acquisition relative to impacts is critical to the success of the proposed HCP/NCCP. Land acquisition or purchase of easements must stay ahead of any impacts on vegetation communities and covered species habitat resulting from covered activities. Implementing Entity is required to

acquire land for key land cover types that stays ahead of impacts of covered activities. This Stay Ahead provision applies after 1 year of HCP/NCCP implementation to allow the Implementing Entity time to acquire sufficient funds and negotiate deals with willing sellers to acquire large blocks of land. To improve the chances of meeting this requirement, the Implementing Entity is encouraged to acquire land before permits are issued according to a Jump Start guideline (also described in Conservation Measure 1.1).

The Stay Ahead provision would be evaluated on an annual basis (beginning at the end of Year 2) to determine if the "rough proportionality" standard of NCCPA is being met. If it is not met, the Implementing Entity, DFG, and USFWS would meet within 30 days to review the situation and determine an appropriate course of action. And if, after the exercise of all available authority and utilization of all available resources, the federal and state contribution to the Plan cannot be provided in order to meet the Stay Ahead provision, the HCP/NCCP and the Stay Ahead provision would be reevaluated in light of these limitations, with possible adjustments made to the Permit coverage and assurances, Permit term, conservation obligations, or other aspects of the HCP/NCCP given the extent of the Federal/state contribution.

If the reason for the Stay Ahead provision not being met is that the Implementing Entity is unable to acquire land from willing sellers fast enough or State or Federal agencies are unable to provide their contributions fast enough, the Implementing Entity could temporarily require that applicants provide land instead of paying a fee. Land would be provided to the Implementing Entity according to the guidelines in "*Land Dedication in Lieu of Development Fee*" in Chapter 8 of the HCP/NCCP. Developers would always have the option of providing land in lieu of the development fee, but this would be required if the Implementing Entity cannot meet the Stay Ahead provision due to a lack of willing sellers, delays in Federal/State contributions, or other substantial extenuating circumstances. The requirement to provide land instead of a fee would be lifted (i.e., it would revert back to an option) as soon as the Implementing Entity meets its Stay Ahead requirement.

An important source of funding for the proposed HCP/NCCP would be fees imposed on urban development and projects involving rural infrastructure outside the ULL. If the amount of urban development permitted under the proposed HCP/NCCP were substantially overestimated, there would be a substantial shortfall in funding for acquisition and maintenance of preserves. To achieve the goal of creating a Preserve System that is fully functional, meets all regulatory requirements, and meets the biological goals and objectives of the proposed HCP/NCCP, some components of the preserve acquisition measures would be adjusted according to the amount of urban development that is actually permitted under the proposed HCP/NCCP. The acquisition priorities under the initial urban development permit area are depicted in Figure 2-3. The Acquisition Priorities under the maximum urban development permit area are depicted in Figure 2-4.

Land acquisition requirements within Zones 1, 2, and 3 that are described in Conservation Measure 1.1 would be met regardless of how much urban development is permitted under the HCP/NCCP (i.e., regardless of which urban

development area scenario is used), because habitat within Zones 1, 2, and 3 is critical to the success of the conservation strategy and is also under the greatest threat of loss or degradation. Land acquisition requirements for Zones 4, 5, and 6 would vary according to the amount of urban development that occurred. With the initial urban development area preserves would be established in Zones 4, 5, and 6 to meet the conservation needs of covered species. Reserves and habitat connections would be expanded in these Zones with the maximum urban development area to provide additional conservation benefit. A detailed description of the conservation objectives and acreage targets for each Zone is provided in Chapter 5, *Conservation Strategy*, of the HCP/NCCP.

Conservation Measure 1.1 establishes minimum land acquisition requirements that must be met in all Zones. Once the amount of urban development permitted under the HCP/NCCP exceeds that assumed in the initial urban development area, the amount of land that must be acquired within Zones 4, 5, and 6 would increase in proportion to the amount of urban development occurring in the permit area. Requirements have been established such that the amount of land acquired is always greater than strict mitigation requirements; in this way, the proposed HCP/NCCP's contribution to the recovery of covered species would be assured. Within Zones 4, 5, and 6, land acquisition would more closely track the funding limitations imposed by the pace of urban development. Requirements for habitat restoration and creation are already tied, in part, to impacts through the use of mitigation ratios.

Conservation Measures

The proposed HCP/NCCP conservation measures address the landscape-level, community-level (or habitat), and species-level impacts, and include measures to address the following objectives.

- Design of covered activities to avoid or minimize impacts on covered species and covered vegetation communities.
- Preservation of covered vegetation communities.
- Preservation of covered species populations and habitats.
- Restoration of covered species habitat and vegetation communities to compensate for direct and indirect impacts on specific species and vegetation communities.
- Restoration of species habitat to contribute to the recovery of listed covered species and help prevent the listing of nonlisted covered species.
- Management of preserves to maximize the functions of habitats for covered species.

The proposed HCP/NCCP conservation measures are summarized in Table 2-3. (For a detailed description of the conservation measures and the rationale for each, please refer to Chapter 5, *Conservation Strategy*, and Chapter 6, *Conditions on Covered Activities*, of the proposed HCP/NCCP.)

Table 2-3. Summary of Conservation Measures

Conservation Measure	Name
Landscape-Level Measures	
1.1	Acquire Lands for Preserve System
1.2	Prepare and Implement Preserve Management Plans for Natural Habitat Lands
1.3	Prepare and Implement Agricultural Management Plans for Cultivated Agricultural Lands
1.4	Prepare and Implement an Exotic Plant Control Program for the Preserve System
1.5	Prepare and Implement a Recreation Plan
1.6	Minimize Development Footprint Adjacent to Open Space
1.7	Establish Stream Setbacks
1.8	Establish Fuel Management Buffer to Protect Preserves and Property
1.9	Urban-Wildland Interface Design Elements
1.10	Maintain and Improve Hydrologic Conditions and Minimize Erosion
1.11	Avoid Direct Impacts on Extremely Rare Plants or Fully Protected Wildlife Species
1.12	Implement Best Management Practices for Rural Road Maintenance
1.13	Implement Best Management Practices for Flood Control Facility Operations and Maintenance
1.14	Design Requirements for Covered Roads outside UDA
Natural Community–Level Measures	
2.1	Enhance, Restore, and Create Land-Cover Types and Species Habitat
2.2	Wetland and Pond Enhancement and Management Program
2.3	Wetland Restoration and Pond Creation Program
2.4	Enhance Native Grassland
2.5	Enhance Prey Base and Natural Burrow Availability in Grasslands
2.6	Maintain and Enhance Oak Woodland and Oak Savanna Vegetation
2.7	Restore Oak Savanna
2.8	Maintain or Improve Quality of Chaparral/Scrub Habitat through Adaptive Management
2.9	Stream and Riparian Woodland/Scrub Enhancement Program
2.10	Stream and Riparian Woodland/Scrub Restoration Program
2.11	Enhance Cultivated Agricultural Lands to Benefit Covered Species
2.12	Wetland, Pond, and Stream Avoidance and Minimization Measures
Species-Level Measures	
3.1	Protect and Enhance Roosting Habitat for Townsend's Big-Eared Bat
3.2	Minimize Predation on Tricolored Blackbird Colonies
3.3	Protect Golden Eagle Nest Sites within Preserve System
3.4	Create Artificial Burrows in Grasslands to Attract/Retain Burrowing Owls
3.5	Establish Artificial Perches to Attract/Retain Burrowing Owls
3.6	Compensate for Impacts on Giant Garter Snake Habitat
3.7	Enhance Habitat for Western Pond Turtle
3.8	Compensate for Impacts on Occupied Covered Shrimp Habitat
3.9	Conduct Experimental Management to Enhance Covered Plant Populations
3.10	Plant Salvage when Impacts are Unavoidable

Monitoring and Adaptive Management

An NCCP must incorporate an integrated adaptive management strategy that is periodically reviewed and modified on the basis of the results of monitoring efforts and other sources of new information (California Fish and Game Code Section 2820(a)(2)). An NCCP must also have a monitoring program, including surveys to determine the status of biological resources, periodic accountings and assessments of take, and a schedule for conducting monitoring activities.

Under Federal regulations, a HCP must incorporate monitoring of conservation measures and species responses to these measures (50 CFR 17.22(b)(1)(iii) and 50 CFR 222.22(b)(5)(iii)). The Five-Point Policy (65 FR 35241-35257), which guides the development of adaptive management in HCPs, describes adaptive management as an integrated method for addressing uncertainty in natural resource management. In order to be successfully implemented, adaptive management must be linked to measurable biological goals and monitoring.

The proposed HCP/NCCP includes a comprehensive monitoring and adaptive management program that falls within the scope of the proposed project (see HCP/NCCP Chapter 7). The purpose of the proposed monitoring and adaptive management program is to assess the condition of species and natural communities within the Preserve System and to provide for their ongoing conservation and recovery. The adaptive management component of the program would guide how information is collected by the Implementing Entity and how it would be evaluated and used to improve management of the Preserve System. The monitoring component of the program would track the success of the management activities in conserving and recovering species and natural communities within the Preserve System. Management activities and monitoring efforts would change adaptively to improve conservation and to increase the usefulness of the monitoring data. The HCP/NCCP monitoring and adaptive management program includes provisions for developing conceptual models, conducting directed research, conducting pilot studies, developing monitoring protocols, and incorporating periodic formal and informal peer reviews from local scientific advisors and independent scientists, and public input.

Implementation

Implementation of the HCP/NCCP would begin after the Implementing Agreement is executed and the Section 10(a)(1)(B) incidental take permits and NCCPA Section 2835 permit are issued. Primary responsibility for implementing the HCP/NCCP would rest with the Permittees. However, as described in this chapter, other groups would be responsible for implementing some aspects of the HCP/NCCP. The successful execution of the conservation strategy, monitoring protocols, covered-activity approvals, and reporting that are part of the HCP/NCCP would require coordinated actions among the local jurisdictions, wildlife agencies, public-land managers, and the private sector.

In general, local jurisdictions would implement the HCP/NCCP through their planning departments and through an Implementing Entity as described below. This chapter describes the overall implementation policies of the HCP/NCCP, including institutional arrangements, organizational structure, approval processes, land acquisition, and roles and responsibilities for signatories to the Implementing Agreement and other stakeholders.

HCP/NCCP implementation would be overseen by the Implementing Entity, which would be a Joint Exercise of Powers Authority formed by the cities and the County . Day-to-day implementation of the HCP/NCCP would be managed by an Executive Director using her/his staff and consultants. The Implementing Entity would have the authority to delegate some of its responsibilities to existing or newly created entities including agencies and non-governmental organizations. Options that could be considered to implement some or all of the duties of the Implementing Entity include:

- staff dedicated to the Implementing Entity and independent of other agencies,
- staff wholly or partly dedicated to the Implementing Entity but housed within one or more existing government agencies,
- land trust specifically formed to implement the HCP/NCCP,
- contracts with existing organizations that have relevant experience and expertise, such as experience with land management or monitoring (e.g., EBRPD, CDPR, Center for Natural Lands Management).

Other organizations with important roles in HCP/NCCP implementation include the regulatory agencies, other land-management agencies, Science Advisors, and the public. The roles, responsibilities, and relationships of each group are described below.

Implementing Entity

The Implementing Entity consists of the Governing Board, the Executive Director, and Staff. The Implementing Entity executes the requirements of the HCP/NCCP as well as the Implementing Agreement. The Implementing Entity also coordinates with Science Advisors, outside consultants, and other land-management agencies to ensure adequate and coordinated implementation of the HCP/NCCP. The Implementing Entity includes a network of staff scientists, administrators, and other specialists that carry out the planning and design, habitat restoration, monitoring, adaptive management programs, and periodic coordination with and reporting to regulatory agencies.

The Implementing Entity would be responsible for the day-to-day tasks of implementing the HCP/NCCP “on the ground”, although some of the activities may be delegated to and carried out by contractors or partner land management agencies. The Implementing Entity’s duties would consist of routine HCP/NCCP activities such as identifying suitable conservation properties, undertaking survey and monitoring efforts on HCP/NCCP preserves, contacting neighboring

landowners to explain coverage under the Implementing Entity's permit, maintaining a database of relevant preserve information, and tracking habitat losses and gains.

The Implementing Entity may include part of a local land management agency (such as EBRPD) or it may be formed through the expansion or creation of a nonprofit organization. The Implementing Entity would be composed of administrative and technical staff led by an Executive Director (see below for details of the organizational structure of the Implementing Entity). The Implementing Entity would hold title to lands or easements it purchases and would oversee cooperative agreements with other land management entities that manage preserves for the Implementing Entity as part of the HCP/NCCP Preserve System.

The Implementing Entity is tasked with the actual implementation of HCP/NCCP measures as described in the HCP/NCCP. These wide-ranging responsibilities include but are not limited to:

- developing and maintaining annual budgets and work plans;
- obtaining grants;
- managing funds or endowments;
- researching land acquisition opportunities (fee title or conservation easements);
- negotiating land acquisition or conservation easements with private landowners;
- negotiating joint acquisitions or conservation easements in partnership with otherorganizations;
- training staff in local jurisdictions to review development applications in compliance with the Plan, assisting local jurisdictions with ensuring that project proponents perform the avoidance and minimization measures required by the Plan;
- approving offers of land in lieu of development fee that may be made by project proponents and making determinations on other implementation matters that require approval of the Implementing Entity, as specified in this Plan or the Implementing Agreement;
- monitoring landowner compliance with conservation easement terms;
- developing system-wide and site-specific management plans for the Preserve System and individual preserves;
- designing and implementing habitat enhancement, restoration, and creation and managing the affected areas in an Adaptive Management framework ;
- obtaining additional permits for site-specific projects in the Preserve System (e.g., wetlands permits, cultural resources compliance), if necessary;
- implementing species-specific conservation measures within the Preserve System;

- periodic mapping of the inventory area to update the land-cover calculations;
- coordinating and communicating with local land management agencies;
- creating and maintaining databases;
- designing a scientifically-valid monitoring program and monitoring habitat and species on HCP/NCCP preserves ;
- overseeing land-management activities in an Adaptive Management framework either independently or in partnership with other organizations;
-
- assuring that mitigation and conservation measures are being implemented roughly proportional in time and extent to the impact on habitat or covered species authorized under the HCP/NCCP (e.g., see Conservation Measures 1.1 [Stay Ahead provision], 2.3 [Wetland Restoration and Pond Creation], and 2.10 [Stream and Riparian Woodland/Scrub Restoration]); and
- assuring involvement in the implementation of the Plan by the public, science advisors, interested agencies, and others.

The Implementing Entity would utilize specialists that allow these varied tasks to be properly implemented. Based on these roles, a potential organizational structure of the Implementing Entity is shown in Figure 8-2 of the HCP/NCCP. However, the actual structure used may differ depending on staff qualifications and arrangements with local agency partners to fill all or portions of these roles.

Key roles are briefly described below. Each role described below could be performed by one or more staff residing in different agencies, could be contracted to private specialists, could be filled at different stages of HCP/NCCP implementation, or could be combined. Several roles could be performed by the same person.

Governing Board

The Governing Board for the Implementing Entity would consist of elected officials from participating city councils and the County Board of Supervisors. The Governing Board, as the decision-making body for the Implementing Entity, would help to oversee compliance with those responsibilities set forth in the HCP/NCCP and assigned to the Implementing Entity. The Implementing Entity would receive advice through the Governing Board from the groups described below.

Participating Local Jurisdictions

The following local jurisdictions would each be Permittees under the HCP/NCCP:

- Contra Costa County
- Contra Costa County Flood Control and Water Conservation District
- City of Pittsburg

- City of Clayton
- City of Oakley
- City of Brentwood
- EBRPD.

It is expected that each of these jurisdictions would hold an ESA Section 10(a)(1)(B) incidental take permit and an NCCP Section 2835 permit providing authorization for take that occurs from covered activities within their respective jurisdictions (Chapter 2). Each would also be a signatory to the HCP/NCCP Implementing Agreement. However, the participating jurisdictions would vest the responsibility for implementing the HCP/NCCP to the Implementing Entity as described below. In other words, the Implementing Entity would oversee implementation of the HCP/NCCP on behalf of the participating jurisdictions. Nevertheless, the participating jurisdictions would ultimately be responsible for compliance with all the terms and conditions of the Federal and State permits and for the performance of the Implementing Entity. Each local jurisdiction would provide staff to advise the Implementing Entity on HCP/NCCP implementation.

It is anticipated that most applications for coverage under the HCP/NCCP will come from private developers within the participating cities and the County. These jurisdictions will be responsible for determining the completeness of each project application (see *Applicant Responsibilities and the Application Process* below for details). If the application is complete and the applicant has complied with all relevant terms of the HCP/NCCP as determined by the participating jurisdiction, the participating jurisdiction will grant HCP/NCCP coverage as part of its normal project-review process (e.g., grading permit issuance, EIR certification). Participating local jurisdictions will also be responsible for reporting the relevant details of approved projects to the Implementing Entity (for entry into the HCP/NCCP database), for monitoring developer compliance with the avoidance and minimization requirements specified in the applicable conservation measures (see Chapter 6 of the HCP/NCCP), and for collecting fees.

Other Land Management Agencies

Local land management agencies are important to the success of the HCP/NCCP. HCP/NCCP preserves would often border existing parks or public lands run by EBRPD, the California Department of Parks and Recreation (CDPR), CCWD, and other public agencies or private land trusts. These agencies would help to guide implementation of the HCP/NCCP as advisors to the Implementing Entity and/or the Governing Board. In addition, land managers from these organizations would need to coordinate closely with the Implementing Entity to ensure that management actions are compatible across the region. Significant cost savings can be achieved by coordination of local land-management agencies in undertaking joint management actions that are consistent with this HCP/NCCP. These land management agencies may wish to establish a formal committee to facilitate this coordination and information sharing.

Technical Advisory Committee

If the Implementing Entity includes other land management agencies (i.e., agencies that manages land on behalf of the Implementing Entity), then senior land management staff of these other agencies would form a Technical Advisory Committee that includes preserve management staff of the Implementing Entity. The Technical Advisory Committee would report to the Executive Director and serve as a coordinating body to ensure that land management, monitoring, and other HCP/NCCP activities are applied consistently across the Preserve System. Representatives of USFWS and DFG would serve as advisory members to the Technical Advisory Committee.

Regulatory Agencies

USFWS and DFG are the regulating agencies that provide the Federal and State permits for incidental take and regulate implementation of the HCP/NCCP. They would receive annual reports concerning HCP/NCCP implementation, and they would guide the efforts of the Governing Board such that the HCP/NCCP remains in compliance. Representative of these agencies would serve as advisory members to the Governing Board and the Technical Advisory Committee, if one is formed. Regulatory agencies are responsible for providing guidance to the Implementing Entity and Permittees on how to fulfill the terms of the permits. Regulatory agencies would also assist the Implementing Entity in securing state and federal funding for HCP/NCCP implementation (see Chapters 8 and 9).

Science Advisors

Science Advisors with expertise in conservation biology, management of local natural communities and agricultural lands, or the ecology of covered species would be invited to provide input to the Governing Board as needed. The Science Advisor's primary function would be to provide technical advice and help assemble the best available scientific data on the HCP/NCCP's preserve assembly, monitoring, and adaptive management program. A separate group of scientists would be convened periodically in an Independent Conservation Assessment Team to provide outside review of overall HCP/NCCP progress. More detail on the structure, role, and schedule of Science Advisors and the Independent Conservation Assessment Team is provided below under *Structure of the Adaptive Management Decision-Making Process.*

Public Input

Public input is fundamental to ensuring success and continuing support of the HCP/NCCP throughout its implementation. The NCCP Act requires that the IA provide for periodic reporting to the public on the progress of NCCP implementation. All meetings of the HCP/NCCP Governing Board would be open to the public, and public comments would be heard at each meeting. (The Governing Board may need to hold periodic closed-door sessions to discuss confidential items such as land transaction negotiations or legal matters.) In addition, the public would be able to contact the staff of the Implementing Entity to comment on various aspects of HCP/NCCP implementation. Data and reports associated with the monitoring program for this HCP/NCCP would be available to the public, with the exception of reports documenting surveys on private lands considered for acquisition but not yet acquired by the Implementing Entity.

Public Advisory Committee

The Governing Board would establish and appoint a public advisory committee to solicit input from stakeholders with interest in HCP/NCCP implementation. The committee would report directly to the Governing Board. Committee members would be drawn from a variety of interest groups, including conservation advocacy organizations, landowner groups, and development interests. Staff from local jurisdictions and the regulatory agencies should participate in advisory committee meetings to help assure broad coordination among those parties interested in and responsible for implementing the HCP/NCCP. Meeting frequency would be determined by the Implementing Entity and the committee; quarterly meetings are recommended to start. Meetings would be open to the public. The committee may sunset at the end of the permit term.

The public advisory committee would provide input to the Governing Board and staff on all aspects of HCP/NCCP implementation, with an emphasis on the following topics.

- Expenditure of funds for habitat conservation measures.
- The general permit issuance process (but not project-by-project input on permits).
- Operation of preserves and adaptive management.
- Adherence to HCP/NCCP commitments (e.g., no surprises, neighboring landowner protections).

The criteria listed below would guide establishment and operation of the public advisory committee.

- The committee would include representation of organizations and individuals with direct interest in HCP/NCCP implementation, and will be composed of the following members appointed by the Governing Board:
  - three private permit seekers, (e.g., private developers or their representatives);
  - three conservation advocates, (e.g., established organizations that represent members in the inventory area);
  - three private landowners and/or agriculturalists, or their representatives;
  - three people representing suburban and rural residents of the HCP/NCCP area; and
  - public agency staff, who shall also attend and participate in committee meetings.
- Despite formal membership, committee meetings would be open to the public, and members of the public would be encouraged to participate in discussions and be part of committee recommendations.

- The committee shall attempt to operate by consensus. When consensus is not possible, the conflicting positions should be communicated to the Governing Board.
- The committee shall strive in their recommendations to be objective, balanced, and constructive to help the HCP/NCCP succeed biologically, financially, and within the social context of East Contra Costa County.

Annual Public Workshop

At least once annually, the HCP/NCCP Governing Board would report on the progress of implementation directly to the public in a workshop. The Board would summarize habitat losses and gains, habitat restoration and creation, and management and monitoring accomplishments for the previous year. The meeting would provide a forum for the public to ask questions and provide comments directly to the Board on the overall progress of HCP/NCCP implementation. Periodic formal review of HCP/NCCP progress in a public forum may also be appropriate and could perhaps coincide with the 5-year conservation audits by the Independent Conservation Assessment Team (see Chapter 7 of the HCP/NCCP for a description of this group and its function).

Application Process

Upon adoption of the HCP/NCCP, the Permittees would be issued permits for take of covered species. The Permittees would be capable of extending HCP/NCCP coverage to landowners and other applicants within the permit area, provided that their projects are executed in accordance with the terms of the HCP/NCCP, the permits, and the IA. Landowners and other project applicants who receive this coverage are referred to as *Third Parties Granted Take Authorization*, or Third Parties.

Project applicants would apply to the appropriate city or the County for coverage under the proposed HCP/NCCP unless the project is not subject to discretionary approval. The project would be evaluated for coverage under the permits on the basis of its consistency with all relevant HCP/NCCP requirements. Applicants would submit a report at the time of project submittal that supplies the following information.

1. Definition of project area, including project footprint, extent of construction, and extent of ongoing maintenance activities.
2. Written description of project, including maps.
3. Results of planning surveys (see Chapter 6 of the HCP/NCCP).
4. Compliance with avoidance and minimization measures (see Conservation Measures 1.6, 1.7, 1.8, 1.9, 1.11).
5. Quantification of anticipated direct and indirect impacts on proposed HCP/NCCP land-cover types, covered species habitat, and other HCP/NCCP resources.
6. Proposed conservation contribution (e.g., land dedication, acquisition, fee).

If the application is deemed complete, it is submitted to the local decision-making body (city or County), where it is approved or rejected based on its compliance with the proposed HCP/NCCP and the many other considerations normally used to evaluate a project for approval. If the project is approved, requirements of the proposed HCP/NCCP would be incorporated into the project Conditions of Approval or Development Agreement. In addition, a checklist making NCCP findings of compliance for the project would be prepared by city or County staff and submitted to the Implementing Entity. All project documentation would be available to DFG and USFWS. The applicant would pay the established development fee or provide other conservation habitat mitigation, and the project would be built with design and construction measures in accordance with the HCP/NCCP.

Funding

The cost for implementing the HCP/NCCP has been estimated for both the initial urban development area and the maximum urban development area. Cost estimates include the costs of land acquisition, land management, restoration, monitoring, administration, and other actions required by the Implementing Entity over the 30-year life of the HCP/NCCP. The grand total estimate is approximately $299 million for the initial urban development area and approximately $352 million for the maximum urban development area (in 2005 dollars).

Funding scenarios have been developed in parallel with the cost estimation process and have assumed an overall implementation cost of $300 million (please refer to Chapter 9, *Funding*, of the HCP/NCCP and Appendix G of the HCP/NCCP for a detailed breakdown of implementation costs). The funding mechanisms to cover the proposed HCP/NCCP implementation are presented in Table 2-4. It should also be noted that land may be granted in-lieu of fee payment.

Table 2-4. HCP/NCCP Funding Strategy

Type	Amount	
	Initial Urban Development Area	Maximum Urban Development Area
Projected Funding[1]		
Fee Funding		
Fees on new development in Urban Development Area	$118,183,000	$169,723,000
Wetland Impact Fees	$22,240,000	$24,010,000
Fees on rural infrastructure (e.g., roads, detention basins, pipelines)	$8,932,000	$8,932,000
Total Projected Fee Funding	$149,350,000	$202,670,000
Non-Fee Funding		
Maintenance of Existing Conservation Effort[2]		
Local	$55,250,000	$55,250,000
State	$25,500,000	$25,500,000
Federal	$4,250,000	$4,250,000
Subtotal, Maintenance of Effort	$85,000,000	$85,000,000
Byron Airport Clear Zone Acquisitions	$6,500,000	$6,500,000
New Wildlife Agency Funds (Section 6, park bonds, etc.)[3]	$58,000,000	$58,000,000
Total Non-Fee Funding	$149,500,000	$149,500,000
TOTAL PROJECTED FUNDING (Permit Term)	$298,850,000	$352,170,000

Notes:
[1] Funding estimates include projected monetary contributions and the monetary value of projected in-kind contributions.
[2] Based on analysis of conservation performed over the past 30 years. Assumes 75% historic rate. See Appendix G.
[3] Estimates only. State and federal contributions are described in the HCP/NCCP in terms of acres.

Unforeseen Circumstances

Unforeseen circumstances are conditions that were not anticipated in the proposed HCP/NCCP, may result in unanticipated detrimental effects on covered species, and may alter the effects of take and effectiveness of avoidance, minimization, and compensation measures identified in the proposed HCP/NCCP. Under the federal *No Surprises Regulation* and the NCCPA, USFWS and DFG would provide assurances to the holders of take permits that no additional money, commitments, or restrictions of land or water would be required, beyond that already specified in the HCP/NCCP, should unforeseen circumstances requiring additional mitigation arise once the permit is in place.

The Permittees are requesting such assurances as part of the ESA Section 10(a)(1)(B) permit and NCCP permit.

In the event of unforeseen circumstances during the permit term, amendments to the HCP/NCCP may be proposed by the Governing Board, or USFWS and/or DFG to address these circumstances. USFWS, DFG, and the Governing Board would work together to identify opportunities to redirect resources to address unforeseen circumstances. However, it is intended that USFWS and DFG would not:

- Require the commitment of additional land, water, or financial compensation by the Permittees other than those agreed to elsewhere in the proposed HCP/NCCP.
- Impose additional restrictions on the use of land, water, or natural resources otherwise available for use by the Permittees under the original terms of the proposed HCP/NCCP to mitigate the effects of the covered activities.

As described in the No Surprises regulation, it is USFWS's responsibility to demonstrate the existence of unforeseen circumstances using the best scientific and commercial data available.

Changed Circumstances

The No Surprises Regulation states that Permittees are not required to provide remedial mitigation measures beyond those already identified in the HCP/NCCP to address "changed circumstances." Changed circumstances are defined as changes affecting the species or geographic area covered in an HCP/NCCP that can be reasonably anticipated by plan developers and the Services, i.e., new species listings, fire, flood, or other natural catastrophic events.

Changed circumstances and remedial measures for which the permit holder would be responsible for are described in the "adaptive management program" included in the HCP/NCCP. The Permittees are not responsible for implementing remedial measures to address changed circumstances that are not described in the HCP/NCCP. This assurance and the propriety of covering nonlisted species in an HCP drive from the No Surprises Regulation. The Services reserve the right under what is called the "Permit Revocation Rule" to amend or revoke any Section 10 ITP if the permitted activity would be inconsistent with the no jeopardy issuance criteria and the inconsistency has not been remedied in a timely fashion.

Alternative 2. Conservation Strategy B

The Conservation Strategy B alternative was developed as part of the November 2003 preliminary working draft HCP/NCCP. This draft of the HCP/NCCP was distributed to stakeholders, regulatory agency staff, and others for review and comment. Conservation Strategy B was developed in response to comments

from the Science Advisory Panel on an early draft of the conservation strategy (January 2003). Conservation Strategy B is similar to the Proposed HCP/NCCP (Conservation Strategy A).

Conservation Strategies A and B differ only in terms of the amount and location of land acquisition and habitat restoration proposed under the HCP/NCCP. Conservation measures related to land management, principles of habitat restoration, and avoidance and minimization are the same between Conservation Strategy A and B. The differences between the two alternatives are described below relative to the initial urban development area and the maximum development area.

Maximum Urban Development Area

Conservation Strategies A and B with the maximum urban development area are different in the following ways:

- The Acquisition Analysis Zones and Subzones are slightly different. Zone 6 is smaller in Conservation Strategy B and does not include northeastern Oakley. Acquisition Analysis Subzones in Conservation Strategy B do not match watershed boundaries as well as in Conservation Strategy A.
- Requirements for land acquisition in Subzone 1a near Pittsburg are greater in Conservation Strategy B than in the Proposed HCP/NCCP (367 acres vs. 85 acres). This requirement protects more annual grassland adjacent to the Seal Beach Naval Weapons Station, Detachment Concord (Detachment Concord) but conflicts more with the Pittsburg General Plan than the Proposed HCP/NCCP.
- Requirements for land acquisition in Subzones 1b and 1c near Pittsburg are lower in Conservation Strategy B than the Proposed HCP/NCCP (1,100 acres vs. 1,450 acres), providing a reduced habitat connection between Black Diamond Regional Preserve and Detachment Concord.
- Requirements for preservation of alkali wetland in Zone 5 are 23 acres in Conservation Strategy B and 40 acres in the Proposed HCP/NCCP. (Requirements for preservation of annual grassland and alkali grassland are the same in both alternatives.)
- Under Conservation Strategy B, the HCPA must acquire up to 1,600 acres of cropland in Zone 6 to provide foraging habitat for Swainson's hawk and breeding and foraging habitat for western burrowing owl. In the Proposed HCP/NCCP, this requirement was altered to require 400 acres of land acquisition focused along Marsh or Kellogg Creeks, or near Dutch Slough to provide opportunities for more extensive riparian restoration. Riparian restoration is not a priority in Zone 6 in Conservation Strategy B.
- Conservation Strategy B has no requirements for preservation of alkali wetland in Zone 6, while the Proposed HCP/NCCP required preservation of 40 acres of alkali wetland in Zone 6. (Requirements for preservation of alkali grassland are the same in both alternatives.)

- Conservation Strategy B requires less restoration of seasonal wetland to contribute to species recovery than the Proposed HCP/NCCP (16 acres vs. 20 acres). (Required mitigation ratios for restoration of each wetland land cover type and oak savanna are the same in both alternatives[3].)

Initial Urban Development Area

The initial urban development areas in Conservation Strategies A and B differ in the following ways.

- The Acquisition Analysis Zones and Subzones are slightly different between Conservation Strategy B and the Proposed HCP/NCCP in the same way as described above for the maximum urban development area.
- Requirements for land acquisition in Subzone 1a near Pittsburg is greater in Conservation Strategy B than in the Proposed HCP/NCCP in the same way as the maximum urban development area (367 acres in Conservation Strategy B vs. 85 acres in the Proposed HCP/NCCP).
- Requirements for land acquisition in Subzones 1b and 1c near Pittsburg are lower in Conservation Strategy B than the Proposed HCP/NCCP in the same way as the maximum urban development area (1,100 acres in Conservation Strategy B vs. 1,450 acres in the Proposed HCP/NCCP),
- The land acquisition requirement in Conservation Strategy B of all land cover types in Subzone 4c is greater than in the Proposed HCP/NCCP (2,065 acres vs. 1,400 acres) to provide more conservation along upper Marsh Creek and more preservation of oak woodland, oak savanna, and chaparral in this Subzone.
- The land acquisition requirement in Conservation Strategy B in Zone 5 for annual grassland is significantly lower than in the Proposed HCP/NCCP (1,600 acres vs. 5,300 acres), reducing the conservation of core habitat for San Joaquin kit fox and reducing habitat connections from Alameda County to Contra Costa County.
- The land acquisition requirement in Conservation Strategy B in Zone 5 for alkali grassland is significantly lower than in the Proposed HCP/NCCP (550 acres vs. 750 acres) and similarly for alkali wetland (15 acres vs. 40 acres). These reductions preserve less habitat for alkali-dependent covered plants such as brittlescale, San Joaquin spearscale, and recurved larkspur.
- The land acquisition requirement in Conservation Strategy B in Zone 6 for cropland or pasture is greater than in the Proposed HCP/NCCP (1,200 acres vs. 250 acres). Conservation Strategy B requires preservation of cropland or pasture anywhere in Zone 6 rather than focusing acquisition along Marsh Creek, Kellogg Creek, or near Dutch Slough. Conservation Strategy B therefore preserves more foraging habitat for Swainson's hawk but less

[3] Estimates of actual restoration amounts differ between Conservation Strategy B and the Proposed Plan because impact estimates were refined for the Proposed Plan.

breeding habitat for Swainson's hawk (i.e., cropland or pasture along creeks to provide habitat restoration opportunities).

- Conservation Strategy B does not require acquisition of alkali wetland in Zone 6, while the Proposed HCP/NCCP requires at least 20 acres with the initial urban development area.

Table 2-5. Differences in Required Preservation by Land Cover Type under Alternatives 1 and 2

	Initial Urban Development Area		Maximum Urban Development Area	
	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Zone 1				
Subzone 1a: Annual grassland	85	367	85	367
Subzone 1b, 1c: Annual grassland	1,450	1,100	1,450	1,100
Zone 4				
Subzones 4c, 4e, 4f, 4g: All land cover types	1,400	2,065	3,000	2,065
Zone 5				
Annual grassland	5,300	1,600	8,100	7,100
Alkali grassland	750	550	900	900
Alkali wetland	40	15	40	23
Zone 6				
Alkali grassland	100	100	300	300
Alkali wetland	20	0	40	0
Cropland/Pasture	250	1,200	400	1,600

Alternative 3. Reduced Development Area

The Reduced Development Area alternative would provide for a reduced level of take due to a reduced permit area. Under the Reduced Development Area alternative, covered activities and projects within the urban development area would be limited to lands inside city limits that are designated for development and lands in unincorporated areas with a development land use designation in the County General Plan. Rural infrastructure projects and activities within the preserves, as described for the proposed HCP/NCCP, would also be covered under this alternative. It is further assumed that under this alternative existing open space or agricultural lands within the urban development area that are not currently designated for development would be conserved. Under this alternative, the permit area would be 6,991 acres (Table 2-6), approximately 1,958 acres less than the initial urban development area and 6,225 acres less than

the maximum urban development area. Land-cover types within the urban development area that would be affected by urban development under this alternative are shown in Table 2-6. Impacts on land cover from rural infrastructure projects would be the same as under the proposed HCP/NCCP.

Table 2-6. Impacts on Land Cover within the Urban Development Area (UDA) under Reduced Development Area Alternative

Land-Cover Type	Acres Affected under Alternative 1 or 2 in UDA (Initial Urban Development Area)	Acres Affected under Alternative 3 in UDA (Reduced Development Area)	Difference between Alternatives 1 and 3 or 2 and 3 in UDA	Acres Affected by Rural Infrastructure Activities (Alternatives 1, 2, and 3)	Total Acres Affected by Alternative 3
Terrestrial Land-Cover Types					
Alkali grassland	0	0	0	115	115
Annual grassland	2,016	1,412	604	517	1,929
Oak savanna	40	40	0	2	42
Oak woodland	21	21	0	0	21
Chaparral	0	0	0	5	5
Ruderal	1,200	1,405	(205)	71	1,476
Wetlands, Ponds, and Streams					
Wetland (undetermined)	84	84	0	15	99
Alkali wetland	10	10	0	19	29
Seasonal wetland	18	18	0	0	18
Aquatic	12	12	0	0	12
Pond	6	6	0	1	7
Riparian	20	20	0	10	30
Slough/channel	72	64	8	0	64
Cultivated Land-Cover Types					
Cropland	2,934	875	2,059	39	914
Orchard	516	516	0	21	537
Pasture	1,057	264	793	20	284
Vineyard	638	638	0	19	657
Other Land-Cover Types					
Turf	99	99	0	2	101
Nonnative woodland	24	19	5	2	21
TOTAL	8,781	5,503	3,278	935	6,407

As shown in Table 2-5, the impacts on land cover, and therefore on covered species and natural communities, would be reduced under Alternative 2. As stated in the proposed HCP/NCCP, the land acquisition priorities identified for

the initial urban development area were essential for achieving the species and community conservation goals and objectives and the requirements of the NCCPA. This minimum acquisition standard would also apply to land acquisition under the Reduced Development Area alternative. Requirements for land acquisition and restoration of wetland land cover types would be reduced under Alternative 3 because these requirements are scaled according to the level of development.

The estimated cost of implementation under the Reduced Development Area alternative is $235 million. The reduced development area under this alternative would result in diminished contributions of fees or in-lieu land dedication to the conservation program. Additional funding sources would consequently be necessary to achieve the minimum land acquisition requirements. The HCPA has considered a variety of funding sources in the proposed HCP/NCCP planning process and has incorporated all feasible measures. The Reduced Development Area alternative would therefore necessitate an increase in the fee for development to offset this funding gap. The development fee under this alternative would be $29,650 per acre for impacts to natural lands and $14,825 per acre for impacts to agricultural lands (compared to $18,093 and $9,046 per acre under the proposed HCP/NCCP, respectively).

Table 2-7. Reduced Development Area Funding Strategy

Funding Source	Contribution (Millions of Dollars)
Non-Fee Funding	
Maintenance of Existing Conservation Effort	65.0
New State and Federal Contribution	55.0
FAA Airport Clear Zone Match	6.5
Subtotal Non-Fee Funding	126.5
Fee Funding	
Mitigation Fee Funds per Acre (up to $29,650/acre)	108.5
Subtotal Fee Funding	108.5
Total Funding (equal to total Plan cost)	235.0

All other elements of the proposed HCP/NCCP would remain the same under the Reduced Development Area alternative, including species and communities covered, conservation measures, monitoring and adaptive management, and implementation approach.

Alternative 4. No Action/No Project

Under the No-Action/No-Project alternative, the proposed HCP/NCCP, including implementation of conservation measures and creation of a Preserve System, would not be adopted, and permits pursuant to Section 10(a)(1)(B) of ESA and Section 2835 of the NCCPA would not be issued by USFWS and DFG, respectively.

Under the No-Action/No-Project alternative, compliance with ESA and CESA would continue to be addressed on a case-by-case basis. Projects and activities with a potential to affect federally listed species would be required to individually comply with ESA through either the preparation of individual HCPs and Section 10 permit application, or the Section 7 consultation process in cases in which federal authorization (e.g., Section 404 CWA permitting by USACE) or funding (e.g., Federal Highway Administration [FHWA] funding for transportation projects) are required. Section 7 compliance would focus on federally listed species and would not address state-listed or nonlisted species. In the absence of a Section 10 permit, private activities near or adjacent to the habitat of listed species would have a greater risk of take of listed species and of civil penalties and injunctive relief.

Projects and activities with a potential to take state-listed species would be required to comply with CESA through the CEQA process. Project applicants would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. DFG could also require mitigation for state- or federally listed species as conditions of Section 1602 Streambed Alteration Agreements, if required for a specific project.

No comprehensive strategies to avoid, minimize, or mitigate effects on sensitive species would be implemented under the No-Action/No-Project alternative. No measures that provide for species recovery, as required under NCCPA, would be implemented. With project-by-project conservation and mitigation, there would be a much greater risk that listed species would not be adequately protected and that nonlisted species would be listed in the future.

The process of securing development approval under the No-Action/No-Project alternative would continue on a case-by-case basis. The process may become more complicated and constrained in the future under the No-Action/No-Project alternative if additional species are listed or if species decline occurs.

The No-Action/No-Project alternative would not fulfill the requirements of the 1999 USFWS BO for CCWD's Multi-Purpose Pipeline Project and the Future Water Supply Study and Implementation Plan Project. Noncompliance with the terms of the BO would prevent CCWD from receiving its full entitlement of water from U.S. Bureau of Reclamation (Reclamation). Under the No-Action/No-Project alternative, CCWD would need to consult again with U.S. Fish and Wildlife Service on use of its full entitlement that could result in

permanent reductions in water supply or delays in providing water to future customers. Due to these supply constraints, local jurisdictions that are recipients of CCWD water may in turn be limited in their ability to approve development in accordance with their general plans.

Less development could result in benefits to some species; however, less land would be protected, restored, and managed for the benefit of species.

2.2.3 Alternatives Eliminated from Further Consideration

The following alternatives did not specifically meet the purpose and need for the USFWS and local agency proposed actions. These alternatives were determined to be inconsistent with NEPA and CEQA criteria; specifically, feasibility, reasonable achievement of proposed project (i.e., proposed HCP/NCCP) objectives, or likely reduction of one or more of the significant impacts of the proposed HCP/NCCP. Consequently, these alternatives were eliminated from detailed consideration in the EIS/EIR. Each alternative and the reason for its elimination are briefly described below.

Alternative 5. No-Take Alternative

Section 10(a)(2)(A)(iii) of the ESA states:

> No permit may be issued by the Secretary authorizing any taking referred to in paragraph (1)(B) unless the applicant therefore submits to the Secretary a conservation plan that specifies what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized.

In accordance with this requirement, the proposed HCP/NCCP considers alternatives to take for each of the federally listed species covered under the proposed HCP/NCCP (see HCP/NCCP Chapter 10, *Alternatives to Take*). Alternatives to take for each federally listed species were rejected in the proposed HCP/NCCP because they would not allow reasonable development consistent with the general plans of the cities or County, they would not be practicable to implement, or they would result in an outcome that is biologically inferior to that of the proposed HCP/NCCP. Please refer to Chapter 10, *Alternatives to Take*, in the proposed HCP/NCCP for a detailed discussion of these alternatives. Alternatives to take for federally listed species are similarly eliminated from further consideration in the EIS/EIR.

Alternative 6. Expanded List of Covered Species

During the scoping process, it was suggested that the EIS/EIR consider an alternative that provides coverage for additional species. The HCP/NCCP proposes to cover 28 listed and non-listed species. This list was developed from a larger list of 154 special-status species that occur or may occur in the inventory area. The 28 species were chosen on the basis of four criteria: range, status, impact, and data (see the HCP/NCCP for definitions and additional details). This list was approved by DFG and USFWS. The Science Advisory Panel reviewed the list and considered it appropriate. However, it did recommend reconsidering 13 species that were originally not recommended for coverage (ECCC HCP/NCCP Science Advisory Panel 2002). Of these 13 species, the HCP/NCCP consultant recommended that the ECCC HCPA consider adding the following six covered species if additional funding could be found.

- Peregrine Falcon (*Falco peregrinus*).
- Short-eared Owl (*Asio flammeus).*
- Western pond turtle (*Clemmys marmorata)*
- Western spadefoot (*Scaphiopus hammondii*).
- California horned lizard (*Phrynosoma coronatus frontale*).
- Round-leaved filaree (*Erodium macrophyllum*).

Western pond turtle and round-leaved filaree were added as a result of the Science Advisory Panel's recommendation. An alternative that includes the remaining four species is not feasible because additional planning funds to add these species to the proposed HCP/NCCP has not been secured. Furthermore, adding these species would not substantially change the proposed HCP/NCCP conservation strategy. Conservation measures already proposed in the HCP/NCCP to protect and enhance grassland and oak woodland would incidentally conserve foraging habitat for peregrine falcon, potential foraging and breeding habitat for short-eared owl, foraging and breeding habitat for California horned lizard, foraging and aestivation habitat for western spadefoot. Pond protection, enhancement, restoration, and creation would also conserve habitat for western spadefoot. Species-specific conservation measures might be added to the proposed HCP/NCCP if these additional four species were added, but these measures would not substantially change the conservation strategy, its implementation cost, or its impacts. Adding these species would not reduce any environmental impacts associated with the proposed HCP/NCCP. This alternative was eliminated from further consideration based on it not substantially changing the project description or the project impacts.

Alternative 7. ESA-Listed Species Only

Under this alternative, only those species that are federally listed as threatened or endangered would be proposed for coverage under the HCP/NCCP. The following species would be covered.

- San Joaquin kit fox.
- Alameda whipsnake.
- Giant garter snake.
- California red-legged frog.
- California tiger salamander.
- Longhorn fairy shrimp.
- Vernal pool fairy shrimp.
- Vernal pool tadpole shrimp.

Under a Listed Species Only alternative, no assurances would be provided by USFWS, as part of the ITPs, that the avoidance and mitigation measures provided in the proposed HCP/NCCP would adequately conserve currently nonlisted species that may be listed during the term of the HCP/NCCP. Other sensitive species would not be covered, and take would be addressed on a project-by-project basis, like that described above for the No-Action/No-Project alternative.

This alternative would not meet the Project Objectives of the HCPA to develop and implement a plan that provides comprehensive species protection, avoids future listing of species, and provides assurances that the HCP/NCCP would adequately minimize and mitigate impacts on nonlisted species that may be listed in the future. Non-coverage of additional species would also result in a loss of potential permitting efficiency, another key Project Objective. This alternative was therefore eliminated from further consideration in the EIS/EIR.

Alternative 8. Preserve Acquisition outside Inventory Area

Under this alternative, land acquisition could occur both inside and outside the inventory area. This alternative would allow the Implementing Entity a broader geographic area in which to seek willing sellers and potentially a greater ability to target land-cover types or areas of particular importance for achieving the established biological goals and objectives. This alternative is eliminated from consideration first because it would not meet the Project Objective of the HCPA to provide for species and community conservation in eastern Contra Costa County. The first recommendation to prepare an HCP/NCCP by FWS and DFG was intended to mitigate the impacts of increased growth in this specific geographic area. Preservation and mitigation are most effective if they occur as close to the area of impact as possible. Acquisition outside the inventory area may reduce the effectiveness of the overall conservation strategy; it would also reduce the amount of funding available for acquisition of lands within the inventory area that are essential for the creation of a comprehensive management plan. In addition, many of the covered plant species are not present in the San Joaquin Valley. The ability to acquire preserve lands outside the current HCP/NCCP inventory area would be constrained by several other land use and

planning considerations. Land acquisition to the west and north would be virtually precluded by existing urban areas, parklands, and the Bay-Delta. Land acquisition to the east in San Joaquin County could interfere with the land acquisition efforts necessary for San Joaquin County to meet the requirements of its approved Countywide HCP. Land acquisition to the south could interfere with conservation and land acquisition efforts being undertaken independently by a number of local agencies, including the EBRPD and the Altamont Landfill Open Space Committee[4]. Finally, local authorities in Contra Costa County may lack jurisdiction to fully implement the proposed HCP/NCCP in Alameda or San Joaquin County since the implementing ordinance would have no affect and enforcement would be based solely on agreements reached with individual landowners within those jurisdictions.

Alternative 9. Reduced Permit Duration

Under this alternative, the term of the HCP/NCCP and the take permits would be limited to 20 years to enable local jurisdictions, permitting agencies, and the Implementing Entity to evaluate the success of the HCP/NCCP prior to full development of the expanded permit area.

This alternative would not result in impacts that differ substantially from those of the proposed HCP/NCCP. Because the proposed HCP/NCCP provides for a flexible permit area, the analysis of impacts in this EIS/EIR would be expected to fully capture and characterize the impact of a reduced permit alternative.

In addition, although a reduced permit term would more closely parallel the time frame of the local general plans, a longer permit term is necessary to fully implement a comprehensive regional planning and conservation strategy in eastern Contra Costa County. Limiting the term of the permit would also limit the ability of the Implementing Entity and the Permittees to secure funding from development sources to implement the regional conservation strategy.

The five-point policy describes that the duration of covered activities, the positive and negative effects on covered species, the extent of information underlying the conservation strategy, the length of time to implement and achieve the benefits of the conservation program, and the extent to which the program incorporates adaptive management strategies need to be included in a HCP (65 Fed. Reg at 35255 - 35256). As discussed above, the covered activities (urban development/growth) and preserve assembly is expected to take up to 30 years. In the judgment of the HCPA, the reduced permit alternative would not cover the full duration of potential covered activities nor the conservation program implementation (including funding considerations), both of which are considerations under the five-point plan.

This alternative was eliminated from consideration in the EIS/EIR.

[4] A group represented by the Cities of Dublin and Livermore, Alameda County, and the Sierra Club that is acquiring land in eastern Alameda County using mitigation funds generated by tippage fees from the Altamont Landfill.

Alternative 10. Existing Reserves Only

Under this alternative, conservation would be provided only within current park or open space lands in eastern Contra Costa County. Under this alternative conservation would take the form of changes in management and habitat restoration on existing preserves to benefit covered species. This alternative would meet neither the HCP standards requiring it to mitigate to the maximum extent practicable, NCCPA requirements to conserve the covered species, nor the Project Objectives to focus on preservation of lands that are not currently protected. Existing preserves are owned by EBRPD, CCWD, California Department of Parks and Recreation, and Save Mount Diablo (the last two entities are not participating in the HCP). As a condition of the Planning Agreement for the proposed HCP/NCCP between the HCPA and DFG, it was established that existing preserves would not be relied upon in the proposed HCP/NCCP to compensate for impacts of covered activities.

In addition, this alternative would also not meet the Project Objectives of satisfying the requirements for issuance of ITPs under the NCCPA. Existing reserves would provide conservation of only a limited extent of vegetation communities and species. Moreover, existing reserves are widely distributed throughout eastern Contra Costa County and do not provide adequate corridors for movement of species between areas of suitable habitat. Broader conservation and recovery, as well as avoidance of future listings, could not be provided within the limitations of existing park and open space lands. This alternative does not minimize and mitigate to the maximum extent practicable.

This alternative was eliminated from consideration in the EIS/EIR.

Alternative 11. Modified Urban Growth Model

An alternative that assumes a “smart-growth” or other urban growth model for eastern Contra Costa County was suggested during the public scoping period for the EIS/EIR. Smart-growth or similar alternative growth models strive for new development that is more town centered; is auto-accessible while also accommodating transit and pedestrian activity; and has a greater mix of housing, commercial, and retail uses. It also seeks to preserve open space and protect sensitive areas such as wetlands.

This alternative focuses on changing land use policy as oppose to looking at alternative HCP/NCCP approaches, i.e., conservation strategies, covered species, permit duration, etc. This alternative requires changing development patterns for the purpose of creating town centers, accommodating transit and pedestrian activities, requiring greater mixed uses, preserving open space, and protecting sensitive resources. To a great extent, benefit to species would be secondary and incidental to broad reaching changes to land use policy.

The proposed project is the HCP/NCCP not the applicable General Plans. The HCP/NCCP is required to assess and mitigate for impacts of the “covered

activities" on "covered species". In order to adequately mitigate for impacts the HCP/NCCP may limit the amount or location of development that the applicable general plans contemplate; however, the HCP/NCCP is not intended to supercede the general plans or land use authority of the applicable jurisdictions but rather to impose restrictions on the general plan implementation through consideration of regional conservation requirements necessary to protect the covered species.

It is also noteworthy that many of the principles of smart-growth that could be beneficial to species would be achieved under the HCP/NCCP. A key principle of smart-growth is to preserve open space, habitat, and agricultural lands, an objective that is wholly consistent with the objectives of the proposed HCP/NCCP. Other smart-growth objectives, such as focusing growth toward existing communities, would also be supported under the proposed HCP/NCCP.

This alternative does not present a feasible alternative based on financial and legal reasons. General plan amendments are legislative decisions (land use policies) that are outside of USFWS and DFG jurisdiction. The current general plans for the County and the cities are the current guide to future development in eastern Contra Costa County and are the basis or baseline for the assessment of impacts and conservation in the proposed HCP/NCCP. Alternative growth models would not be precluded under the proposed HCP/NCCP and could be implemented through the local legislative process by the applicable jurisdictions in the future. However, development of a smart-growth alternative for analysis in the EIS/EIR would require either that the local land use agencies develop and adopt new general plans policies that incorporate smart-growth as a basis for conservation planning, or that the proposed HPC/NCCP make broad assumptions about how a smart-growth alternative would be implemented by each of the local jurisdictions. The time and cost associated with development of new general plans for each applicable jurisdiction would be prohibitive and would effectively offset any efficiencies local jurisdictions would hope to achieve in preparing the proposed HCP/NCCP. Development of and reliance on a growth model that is different from the current general plans would be highly speculative due to the legislative/political nature of such an action. Accordingly, this alternative is not feasible due to legal and financial reasons.

Additionally, requiring significant changes to existing general plans, does not meet the participating jurisdictions' specific CEQA goal and objective of reasonably and efficiently implementing their respective general and specific plans.