CHAPTER 2

Proposed Action and Alternatives

This chapter describes the Proposed Action and the alternatives (including the No Action Alternative). Because this EIR/EIS is a joint CEQA/NEPA document, the term "Proposed Action" is used throughout to refer to the following elements:

- Issuance of the ITPs (based on applications for Section 10(a)(1)(B) and Section 2081 permits or permit modifications for each of the permittees—see Section 2.1, below)
- Approval of the HCP and issuance of the permits by the USFWS and the CDFG upon making a determination that issuance criteria have been met by the permittees (thus allowing implementation of the HCP)
- Implementation of the HCP, thus allowing implementation of the conservation strategy, as outlined in the HCP, including the conservation and minimization measures to be implemented by the land use agencies, the water agencies, and the Conservancy
- Adoption of the IA(s) to secure participation and compliance of the permittees

Where applicable/relevant to the analyses, individual components of the Proposed Action are discussed separately. The Proposed Action is summarized to provide the reader with an understanding of the implementation objectives and with the elements of the HCP and other applicable elements that are assessed for their potential to result in effects to the environment. Readers of this EIR/EIS are directed to the *Draft Natomas Basin Habitat Conservation Plan, Sacramento and Sutter Counties (*City of Sacramento, Sutter County, Natomas Basin Conservancy, Reclamation District No. 1000, and the Natomas Central Mutual Water Company, July 2002) for a detailed discussion of the overall conservation strategy, the specific conservation measures, and an overview of other administrative aspects that do not result in the potential for environmental effects to occur. Key components of the HCP, the IA(s), and the proposed ITPs that are not included in this section (because they do not result in the potential for environmental effects to occur) are primarily those administrative components related to the annual reporting and enforcement processes. These components are discussed in detail in Section VI of the HCP.

The Proposed Action described in the following sections is subject to the following review and approval (which is discussed in detail in Chapter 1: Purpose and Need/Objectives):

- The USFWS's action to approve the HCP, enter into an IA(s) with the City, Sutter County, and the Conservancy, and issue ITPs
- The CDFG's action as a Responsible Agency under CEQA to issue new or modified take authorization permits with the City, Sutter County, and the Conservancy

This chapter is organized in the following sections:

- Plan Participants (Section 2.1)
- Study Area and Permit Areas (Section 2.2)
- Covered Activities (Section 2.3)
- Description of Proposed Action (Section 2.4)
- Approach to Developing Alternatives (Section 2.5)
- EIR/EIS Alternatives (Section 2.6)
- Alternatives Eliminated from Further Consideration (Section 2.7)
- Environmentally Preferable/Superior Alternative (Section 2.8)

A preferred alternative was not identified in this Draft EIR/EIS. The preferred alternative will be identified in the Final EIR/EIS. A preferred alternative will be selected after the lead agencies have had the opportunity to review comments on the Draft EIR/EIS.

2.1 Plan Participants

Implementation of the Proposed Action would involve the permittees and other entities. Described below are the three primary categories of participants involved in implementation of the HCP following issuance of the permits and implementation of the IA(s). Additional detail on the participants in the HCP is provided in Section I.B of the HCP.

- **Permittors.** The wildlife agencies (USFWS and CDFG) that have ITP authority over federally and state listed species under the ESA and CESA are the permittors.

- **Permittees.** The City, Sutter County, the Conservancy, RD 1000, and Natomas Mutual are referred to in the HCP and in this EIR/EIS as the permittees.

- **Plan Operator.** The Conservancy will implement the HCP measures on reserve lands on behalf of the permittees, and is referred to as the plan operator. (The Conservancy is also a permittee for the areas it currently manages and for potential future reserve areas that would be acquired.) Additional detail regarding the Conservancy is described in Section 2.2.3.

Under the Proposed Action, each of the permittees would be expected to apply for and obtain separate Section 10(a)(1)(B) and Section 2081 permits for activities occurring under each permittees' respective authorities (see Section 2.3). The permittees would use a single HCP, as proposed and assessed in this EIR/EIS, and an IA or IAs. Entities undertaking urban development or other covered activities under the authority of the permittees would then be covered under the permittee's ITP.

In addition to the plan participants identified above, there is the potential for other parties to seek incidental take coverage at some future unknown time. These entities and individuals are considered potential permittees (see Section I.B.5 of the HCP). If potential permittees were to seek coverage for incidental take, approving either the Natomas Basin HCP or some other HCP, separate additional environmental review would be required. At this time, because these entities elected not to participate in the Proposed Action or to obtain ITPs, it is speculative to anticipate future activities that could result in the need for incidental take coverage.

2.2 Study Area and Permit Areas

The study area for this EIR/EIS is primarily the Natomas Basin. The study area also includes Area B and the area on the river side of Garden Highway in the Natomas Basin, which are the out-of-basin mitigation areas in which habitat reserve lands could be acquired (see Section 2.4.5.6). The EIR/EIS study area includes the HCP Plan Area (i.e., Natomas Basin) and the out-of-basin mitigation areas. The individual permit areas for each of the permittees are discussed below.

2.2.1 City of Sacramento

The term permit area, as applied to the City, means the area designated on Figure 2-1 that includes 8,050 acres located within the City of Sacramento city limits and in certain locations within the unincorporated areas of Sacramento County (the "panhandle" annexation area). Incidental take authority for the City would be limited to this permit area. The Proposed Action addresses the potential for incidental take within this 8,050-acre area. Pursuant to the 1997 HCP and the Settlement Agreement (May 10, 2001, on file with the City of Sacramento), approximately 3,800 acres have been developed as of the end of 2001. The remaining lands in North and South Natomas are primarily developed and would be exempt from implementing the HCP.

The City's permit area does not include areas outside the city limits that could be annexed to the City other than the "panhandle" area. Although the potential exists for areas to be annexed in the future, no development is approved at this time. In addition, the likelihood of development occurring is unknown, and any future development would depend on market conditions and policy actions of the land use agencies. The City's General Plan Amendment and Comprehensive Annexation Program (see Chapter 4) is currently under preparation and describes the potential for development in portions of the unincorporated Natomas Basin. In addition, Sacramento County is also studying the potential for land development in this area.

2.2.2 Sutter County

The term permit area, as applied to Sutter County, means that area designated on Figure 2-2 that includes 7,467 acres located within the unincorporated areas of Sutter County. This acreage includes some drainage improvements in Sacramento County. Incidental take authority for Sutter County would be limited to this permit area.

If an ITP is granted, Sutter County would initiate a General Plan Amendment to revert lands within 1 mile of the Sacramento River from the current General Plan designation of Industrial-Commercial Reserve to the prior Agricultural designation. This 1-mile buffer would become available for inclusion in the planned system of habitat reserves and would not be developed. Of the remaining 8,573 acres of the Industrial-Commercial Reserve, the Proposed Action would cover 7,467 acres of development. Therefore, Sutter County's development allocation under the HCP is limited to 7,467 acres, 1,106 acres fewer than the Industrial-Commercial Reserve acreage remaining after the 1-mile buffer lands are removed. Sutter County would not receive incidental take coverage for this 1,106-acre area under the Proposed Action. Development of this remaining acreage could occur, pursuant to a separate process not covered by the Proposed Action; issues of habitat and species preservation would be addressed on a case-by-case basis.

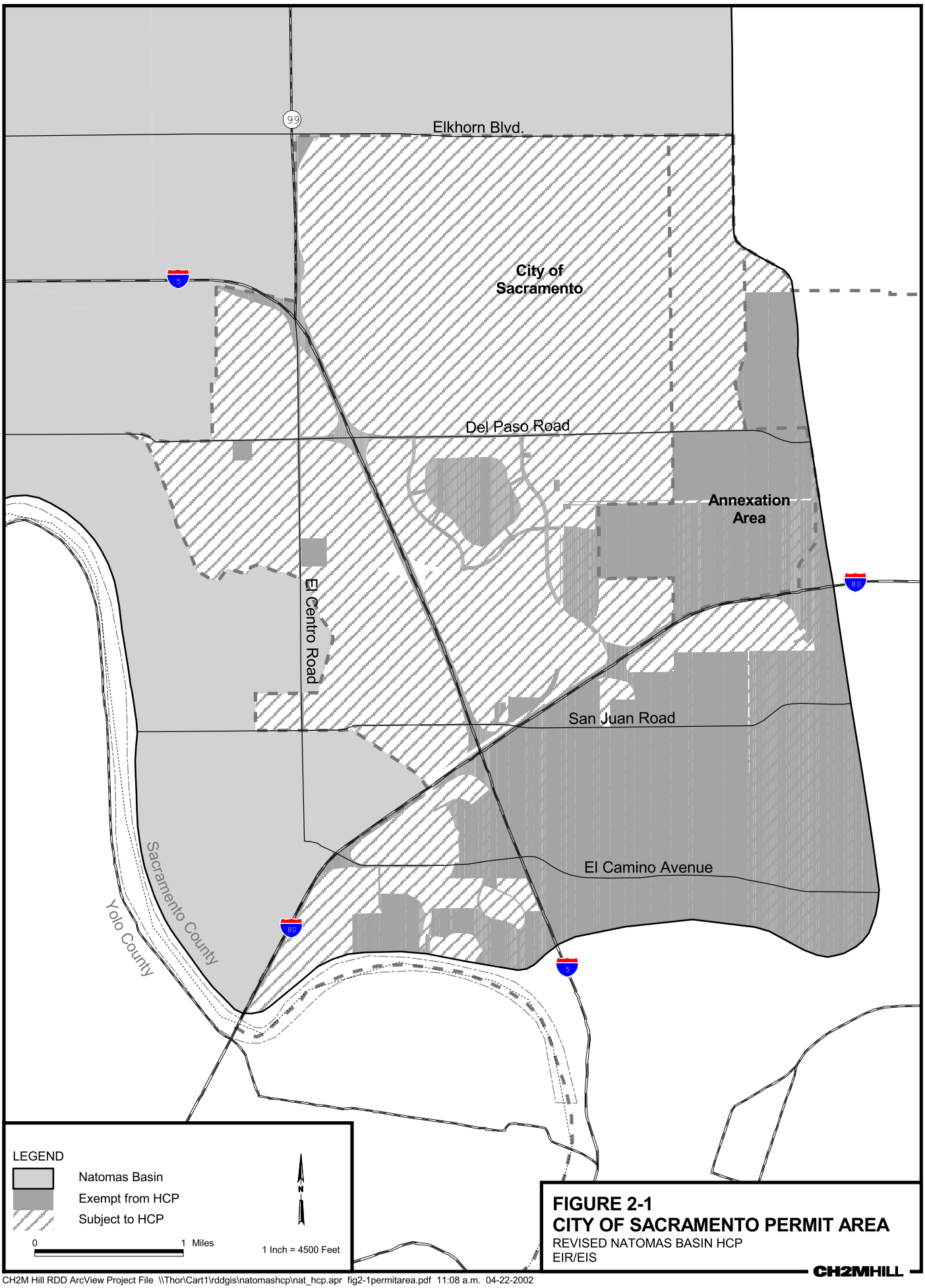

FIGURE 2-1
CITY OF SACRAMENTO PERMIT AREA
REVISED NATOMAS BASIN HCP
EIR/EIS

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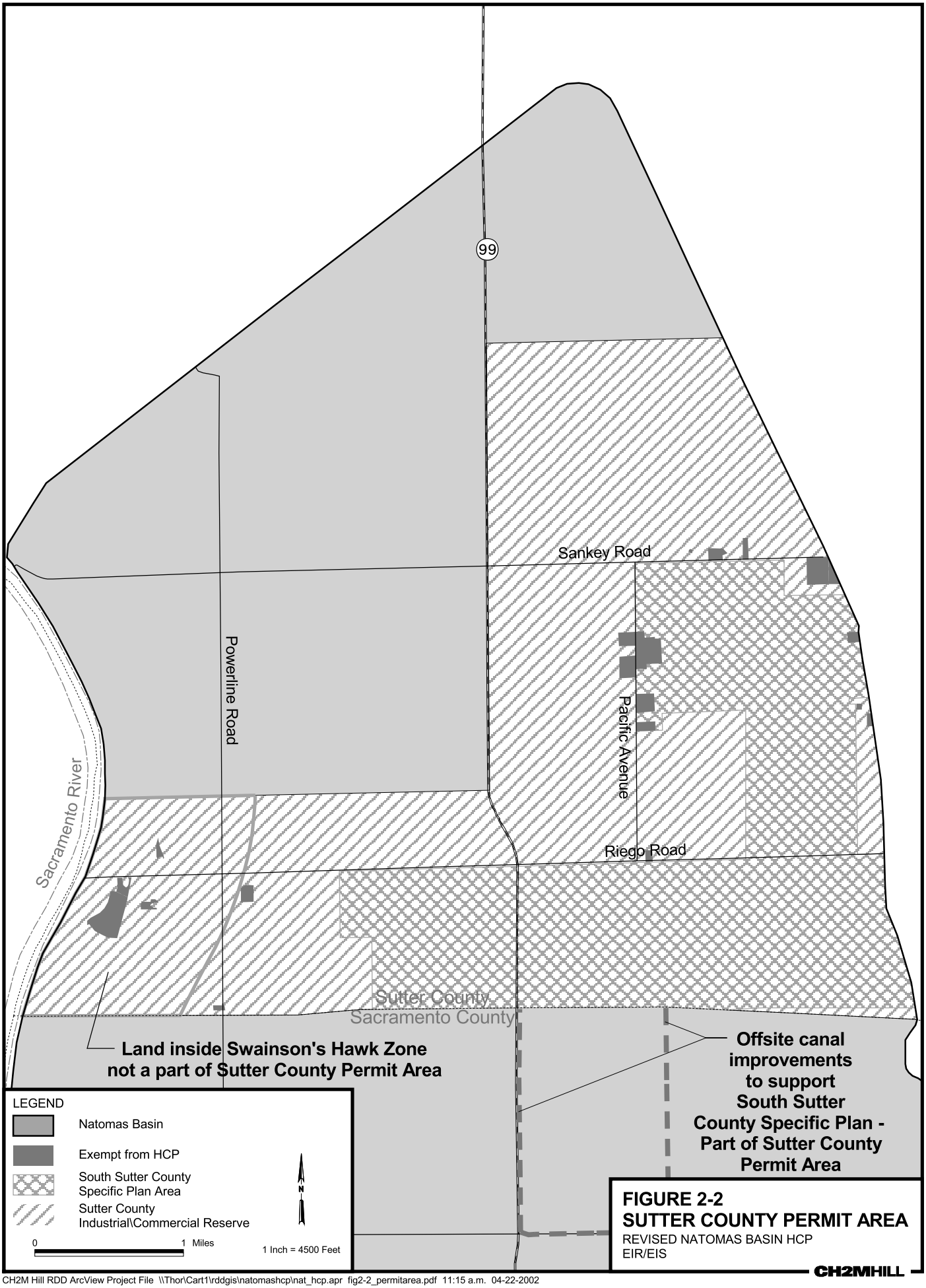

FIGURE 2-2
SUTTER COUNTY PERMIT AREA
REVISED NATOMAS BASIN HCP
EIR/EIS

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Similar to the City, lands developed in Sutter County prior to 1997 would be exempt from the provisions of the Proposed Action. The Sutter County exempt lands are:

- Existing agricultural-industrial businesses along Pacific Avenue, and SR 99/70
- Rights-of-way for Riego Road, Sankey Road, Pacific Avenue, and Powerline Road, as well as SR 99/70
- Rio Ramaza subdivision
- Rural residential areas

One development project, the 50-acre Sysco warehouse facility at the southeast corner of Sankey Road and Pacific Avenue, was built between 1997 and the present time. The Sysco development is located within the Sutter County permit area, and Sutter County collected mitigation fees from Sysco for the amount in place at the time of project approval.

For the lands to be developed within the Industrial-Commercial Reserve, 85 percent of the land use would be for industrial uses and 15 percent would be for commercial uses (Sutter County, 1996a). Other than specifying the total amount of development allowed and the ratio of allowable uses within the Industrial-Commercial Reserve, the Sutter County General Plan does not specify or plan the actual pattern of development. According to the Sutter County General Plan Update EIR (Sutter County, 1996b), the County finds that it is likely that development would not occur on an incremental basis and that an urban core would be surrounded by an agricultural border. Each development project would be considered by the County on the basis of its merits and general plan consistency purposes. Sutter County recently approved a Specific Plan for the first 3,500 acres of development within the Industrial-Commercial Reserve.

2.2.3 Natomas Basin Conservancy

The term permit area, as applied to the Conservancy, refers to the entire Natomas Basin. The Conservancy's permit area also includes Area B and the area bounding the Natomas Basin and extending to the edge of the water immediately outside the Natomas Basin levees; these areas are outside of the HCP Plan Area as defined in the HCP. Specifically, the Conservancy's permit area includes all lands within the Natomas Basin, as well as the land bordering the Natomas Basin and extending to the edge of water immediately outside the Natomas Basin levees and Area B as depicted on Figure 2-3. Incidental take authority for the Conservancy would be limited to this permit area.

The Conservancy was established in 1994 as a non-profit corporation under the laws of the State of California, and is responsible for acquisition, restoration, management, and monitoring of habitat reserves. Under the provisions of the HCP, the Conservancy would be responsible for managing mitigation fees collected by the City and Sutter County, using the fees to establish reserve lands, and managing the reserve lands for the benefit of the covered species (i.e., the Conservancy is the plan operator as well as a permittee [see Section 2.1 above and Section I.B of the HCP]). Reserve lands would be established through fee-simple purchase or acquisition of conservation easements. As a non-governmental entity, the Conservancy has no powers of condemnation and can purchase lands only from willing sellers. Currently, the Conservancy's Board of Directors is represented by members from the City of Sacramento but, with approval of the HCP, would also include representatives from other entities participating in the HCP. In addition to participating in the HCP implementation, the Conservancy can acquire and manage land for other purposes (e.g., as a mitigation bank for other local projects).

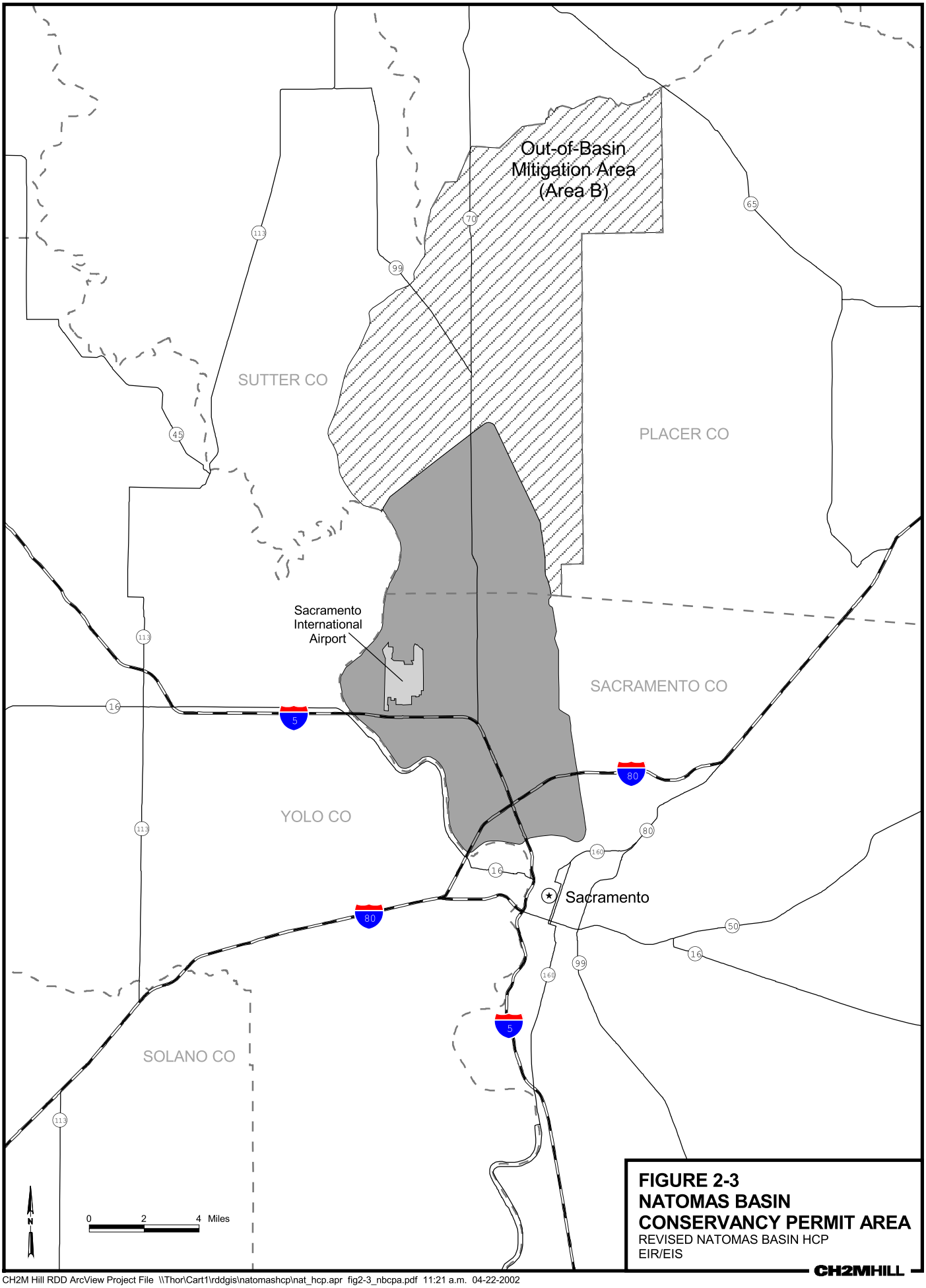

FIGURE 2-3
NATOMAS BASIN
CONSERVANCY PERMIT AREA
REVISED NATOMAS BASIN HCP
EIR/EIS

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Although the USFWS's issuance of an ITP to the City of Sacramento was overturned by the court, the Conservancy was allowed to continue its efforts to acquire, restore, and manage habitat reserves pursuant to a stipulation entered into the federal litigation (see Section 1.2.2). As of early 2002, the Conservancy has acquired 12 parcels, totaling over 2,100 acres, as permanent habitat reserves. Detailed management plans have been prepared for nine of the 12 parcels (Natomas Basin Conservancy, 2001), and substantial habitat development and improvement activities have been completed on the Conservancy's Betts-Kismat-Silva property.

2.2.4 Reclamation District No. 1000

The term permit area, as applied to RD 1000, means canals, ditches, waterways, ponds, open water areas, roads, right-of-ways, facilities, maintenance yards, pumps, pipelines, and water detention facilities under the direct jurisdiction of RD 1000 and inside the inner toe of levees surrounding the Natomas Basin, but not including the Sacramento River levees. Incidental take authority for RD 1000 would be limited to this permit area. RD 1000 drains are illustrated in Figure 2-4.

2.2.5 Natomas Mutual

The term Permit Area, as applied to Natomas Mutual, means canals, ditches, waterways, ponds and open water areas, roads, right-of-ways, facilities, maintenance yards, pumps, pipelines, and water detention facilities under the direct jurisdiction of Natomas Mutual and inside the inner toe of levees surrounding the Natomas Basin, but not including the Sacramento River levees. Incidental take authority for Natomas Mutual would be limited to this permit area. Natomas Mutual canals are illustrated in Figure 2-4.

2.3 Covered Activities

To provide context for the conservation strategy developed as part of the Proposed Action, this section describes the planned development and other activities that would receive incidental take coverage if the take permits are issued by the USFWS and the CDFG. These covered activities have undergone or are undergoing complete environmental and permitting review independent of the assessment of the Proposed Action in this EIR/EIS. The findings of the environmental review of these covered activities are discussed and summarized in Chapter 4: Environmental Consequences, in the context of the separate resource sections to provide the reader with background on the previous planning documents and associated CEQA documentation as the evaluation of impacts under those separate actions or projects pertain to the resources assessed under the Proposed Action that is the subject of this EIR/EIS.

Described below are the specific activities for which the permittees would be provided incidental take coverage under the Proposed Action. On the basis of the similarities and differences of the covered activities of the permittees, this section is divided into land use agencies (City and Sutter County), the Natomas Basin Conservancy (the Conservancy is the plan operator as well as a permittee), and water agencies (RD 1000 and Natomas Mutual). The covered activities are discussed below in three major categories:

- Land Use Agencies (Section 2.3.1)
- Natomas Basin Conservancy (Section 2.3.2)
- Water Agencies (Section 2.3.3)

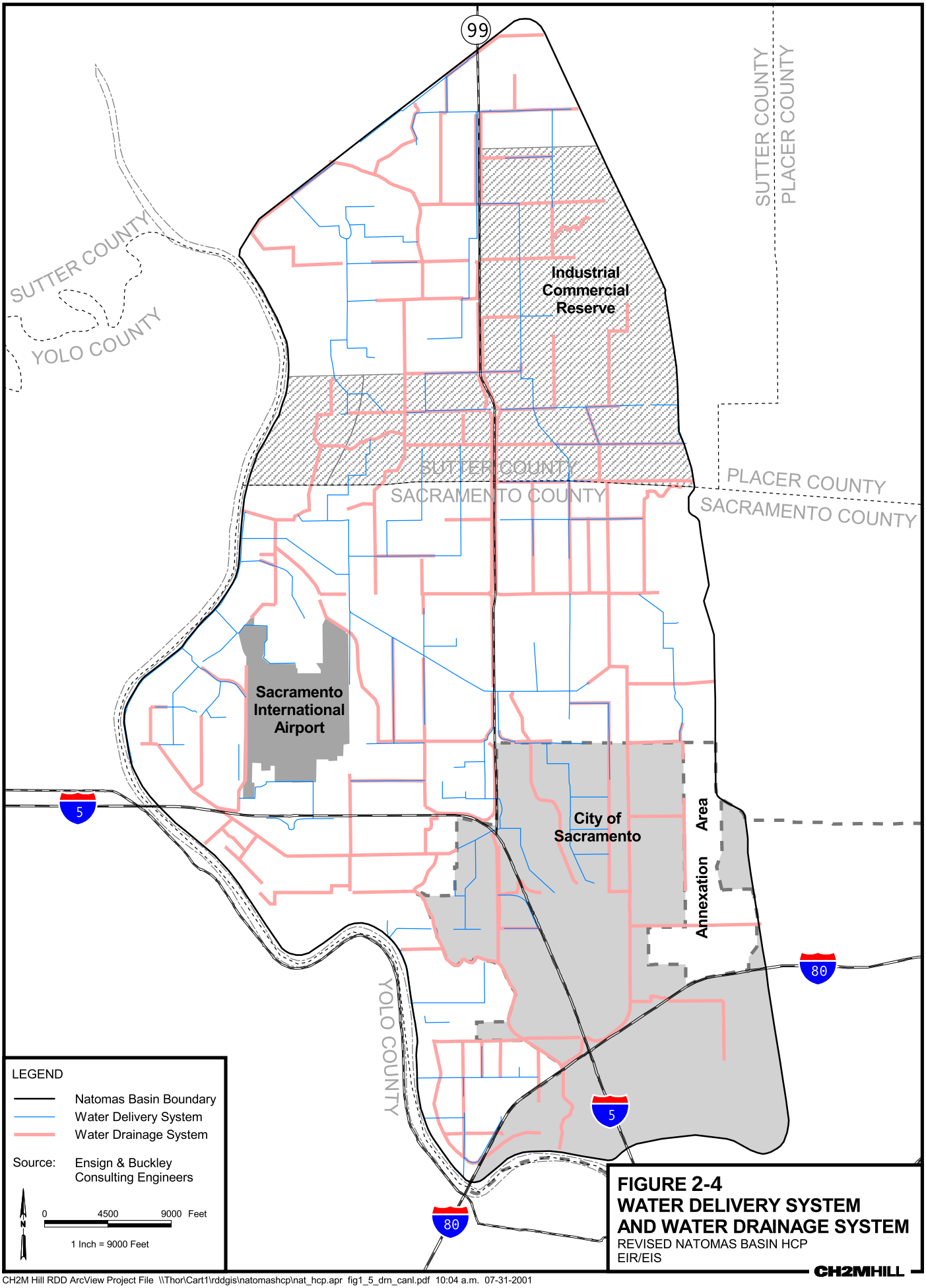

FIGURE 2-4
WATER DELIVERY SYSTEM AND WATER DRAINAGE SYSTEM
REVISED NATOMAS BASIN HCP
EIR/EIS

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In addition, the specific activities that would not be covered by the ITPs are discussed in Section 2.3.4.

2.3.1 Land Use Agencies

The total amount or planned development in the Natomas Basin proposed to be covered by the take permits is 17,500 acres allocated among the City, Metro Air Park, and Sutter County. (Although the Metro Air Park development is not part of the Proposed Action evaluated in this EIR/EIS, the Metro Air Park acreage is factored into the 17,500 acres of urban development evaluated in this EIR/EIS to address impacts to covered species in a way that adequately represents current development plans.) The land use agencies' covered activities, as described in Section I.N.1 of the HCP, are:

- Authorized development projects sponsored by either private developers or public entities that occur within the respective permit area of the land use agency permittee.
- Total authorized development not to exceed 15,517 acres. This total does not include 1,983 acres of urban development associated with the Metro Air Park project, for which incidental take has been authorized by separate permits. The 1,983 acres of development in Metro Air Park are included in the 17,500 acres of total development in the Natomas Basin for purposes of analyzing the overall impacts of urban development in the basin and evaluating the validity of the HCP's conservation strategy.
- Authorized development that affects vernal pool and aquatic species that are covered by the ITPs, whether or not development also requires a permit under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, or other federal regulations that would trigger an ESA consultation.
- The following public facility projects have been proposed by the City, Metro Air Park, and Sutter County outside of their respective jurisdictions:
  - Sutter County drainage improvements associated with the South Sutter County Specific Plan that include expanding two existing drainage channels: the Montna Drain (approximately 80 feet by 8,000 feet upon completion) and improvements to the East Drain (approximately 90 feet by 8,000 feet upon completion). The proposed Sutter County drainage improvements are anticipated to convert approximately 16.5 acres of existing agricultural land to drainage channel. This land is subject to paying mitigation fees and is part of Sutter County's total 7,467 acres of permit area and covered by Sutter County's permit.
  - City of Sacramento public improvements occurring outside of the City limits include 10.4 acres of drainage improvements to widen the West Drain in Sacramento County, along the western City limits. Acres of disturbance for this drainage improvement is included within the City's total 8,050-acre permit area.
  - Metro Air Park off-site improvements fall partially within the City's permit area and partially within Sacramento County. The Metro Air Park off-site improvements located in Sacramento County include drainage, sewer, and roadway improvements. Metro Air Park off-site improvements occurring in Sacramento County have been included within the project's 1,983 acres of disturbance. The off-site improvements occurring in the City (approximately 28 acres), while authorized under the Metro Air Park ITP, are included within the City's 8,050-acre permit area.

2.3.2 Natomas Basin Conservancy

As described in Section I.N.3 of the HCP, incidental take coverage would be provided to the Conservancy for reserve creation and restoration activities, as well as for managing reserves, enhancing reserves, monitoring reserves, and scientific collection associated with these activities. This coverage would apply to the Conservancy's system of habitat reserves, regardless of where they are acquired (see Section 2.2.3). As the plan operator, the Conservancy and its authorized agents have applied for a separate ITP for the entire study area.

2.3.3 Water Agencies

2.3.3.1 Reclamation District No. 1000

RD 1000 conducts an ongoing management program for certain flood control and drainage facilities in the Natomas Basin. These facilities are shown on Figure 2-4. Some of these facilities are jointly used with Natomas Mutual. These management activities, which are a necessary part of the drainage infrastructure in the Natomas Basin, could result in the take of special-status species. The RD 1000 permit area would include canals, ditches, waterways, ponds, and open water areas, as well as roads, right-of-ways, facilities, maintenance yards, pumps, pipelines, and water detention facilities, under the direct control of RD 1000 and inside the inner toe of levees surrounding the Natomas Basin. Incidental take authority for RD 1000 would be limited to this area.

2.3.3.2 Natomas Central Mutual Water Company

Similar to RD 1000, Natomas Mutual conducts an ongoing management program for canals in the Natomas Basin (see Figure 2-4). Natomas Mutual facilities include irrigation canals and drainage canals (some of which are jointly managed with RD 1000) that convey water to agricultural water users. Natomas Mutual's management activities have the potential to result in the take of special-status species. The Natomas Mutual permit area would include canals, ditches, waterways, ponds, and open water areas, as well as roads, right-of-ways, facilities, maintenance yards, pumps, pipelines, and water detention facilities, under the direct control of Natomas Mutual and inside the inner toe of levees surrounding the Natomas Basin. Incidental take authority for Natomas Mutual would be limited to this area.

2.3.3.3 Water Agency Covered Activities

Although RD 1000 and Natomas Mutual do not anticipate filing applications for permits at this time, they have included conservation measures (see Section 2.4.6.3) for their covered activities (see below) in the HCP. As described in the HCP (Section I.N.2 of the HCP), the water agencies' covered activities are:

- De-silting.
- Excavation and re-sloping of ditches and canals.
- Deposition of ditch and canal spoils materials on adjacent property.
- Placement of fill material.

- Control of vegetation in and around canals, ditches, and drains by mowing and other measures to provide necessary operation and maintenance of canals as needed. Vegetation management plans would be presented to the HCP TAC on a 3-year basis.
- Construction and improvement with no increase to the existing footprint, of flood control and water conveyance facilities, water ditches, canals, pump houses or maintenance facilities, and other ancillary facilities that are owned or operated by RD 1000 or Natomas Mutual.

Covered activities do not include the construction, maintenance, operation, or closure of river diversion facilities and accompanying fish screens owned or operated by Natomas Mutual in the Natomas Basin.

2.3.4 Activities not Covered by the Incidental Take Permits

The following activities would not be covered by the ITPs:

- **Agricultural Activities.** Except as provided for the Conservancy management of habitat reserves, agricultural activities would not be covered under the ITPs.
- **Dredging.** Except as provided for the water agencies' channel maintenance, dredging would not be covered under the ITPs.
- **Additional Regulations.** In addition to the Section 10(a)(1)(b) and Section 2081 permits the permittees would also comply with all other applicable local, state and federal; regulations, laws or ordinances. These include, but are not limited to, the following: U.S. Army Corps of Engineers Clean Water Act Section 404 permits; State Water Quality Control Board/Regional Water Quality Control Board Section 401 water quality certification and/or waste discharge requirements; and CDFG Streambed Alteration Agreements pursuant to Fish and Game Code Division 2, Chapter 6, Section 1600 et seq.
- **Relationship of Plan to Section 7 Consultations.** Private actions that are covered activities could also be subject to separate ESA Section 7 review if those private actions are authorized, carried out, or funded by federal agencies. Incidental take for covered activities carried out by the permittees or third-party developers acting under the authority of an urban development permit issued by either the City or Sutter County will be granted under the permits and will be subject to the take mitigation, minimization, and avoidance measures provided for under the HCP. Incidental take coverage for the federal action agency will be granted through the incidental take statement issued with the USFWS's Section 7 biological opinion.
- **Pesticide Use.** Use of herbicides, rodenticides, and/or pesticides is not an activity covered by the ITPs.

2.4 Description of Proposed Action

This section describes the key components of the Proposed Action, including the purpose of the HCP and associated required approvals to implement the HCP (i.e., the ITPs and the IAs), the covered species, biological goals and objectives of the HCP, the development of habitat reserves, the conservation measures to be implemented by the permittees, biological

monitoring and adaptive management provisions, funding for reserve acquisition, and unforeseen circumstances. These topics are discussed in the following subsections:

- Habitat Conservation Plan Purpose (Section 2.4.1)
- Permits and Approvals (Section 2.4.2)
- Covered Species (Section 2.4.3)
- Biological Goals and Objectives (Section 2.4.4)
- Habitat Reserve Development Strategy (Section 2.4.5)
- Conservation Measures (Section 2.4.6)
- Biological Monitoring and Adaptive Management (Section 2.4.7)
- Funding (Section 2.4.8)
- Unforeseen Circumstances/ "No Surprises" (Section 2.4.9)

2.4.1 Habitat Conservation Plan Purpose

The purpose of the HCP (as discussed in Section I.A of the HCP) is to promote biological conservation in conjunction with economic and urban development within the Natomas Basin. The Proposed Action is intended to establish a multi-species conservation program to minimize and mitigate the expected loss of habitat values and incidental take of covered species that could result from urban development, operation and maintenance of irrigation and drainage systems, and certain agricultural and habitat management activities associated with the Conservancy's management of habitat reserves established under the HCP. The goal of the Proposed Action is to minimize incidental take of the covered species in the permit areas and to provide mitigation for the impacts of covered activities on the covered species and their habitat.

The HCP would establish a comprehensive program for the preservation and protection of habitat for threatened and endangered species potentially found on undeveloped and agricultural land in northern Sacramento County and southern Sutter County. The acquisition of lands or the establishment of conservation easements to develop and manage permanent habitat reserves are the primary components of the conservation strategy for addressing potential impacts to listed species. The HCP describes a method of funding the land acquisition and general goals for the acquired lands acquired in fee or protected by conservation easements (see Section VI.B of the HCP).

2.4.2 Permits and Approvals

The HCP is a conservation plan, which is part of the requirements of the ESA (see Section 1.5.1 of this EIR/EIS) designed to support applications for federal permits under Section 10(a)(1)(B). The HCP is also intended to serve as an application for ITPs under California state law pursuant to Section 2081(b) of the California Fish and Game Code. The requirements for issuance of the federal and state permits is described in Section I.I of the HCP. The entities that would rely on the HCP in their individual applications for federal ITPs under Section 10(a)(1)(B) of the ESA and state ITPs under Section 2081 of the California Fish and Game Code are: (1) the City of Sacramento; (2) Sutter County; (3) the Natomas Basin Conservancy, (4) RD 1000; and (5) Natomas Mutual. Each of these entities would obtain individual Section 10(a)(1)(B) permits from the USFWS for activities conducted within each local agency's respective permit area. Similarly, each would also obtain individual Section 2081 permits, or amendments to existing 2081 permits, from CDFG for activities conducted

within each local agency's respective permit area. Each permittee would be required to mitigate the impacts of their covered activities independently. Thus, if any one of the permits were revoked, the other permits would remain in effect.

As discussed in Chapter 1: Purpose and Need/Objectives, the term of the ITPs would be 50 years for each permittee. The permits could then be renewed, subject to any regulatory or statutory provisions in effect at the time of renewal.

2.4.3 Covered Species

The species proposed for coverage in the ITPs, including state and federal endangered and threatened species and species that could become listed in the future, are presented in Table 2-1. For the species that have not been listed, the applicants have requested that the IA(s) provide assurances that, if the currently unlisted species are subsequently listed, the HCP would be deemed adequate for purposes of permit coverage and no further mitigation would be required.

2.4.4 Biological Goals and Objectives

As discussed in Section I.C of the HCP, the overall biological goals and objectives of the HCP are to:

- Establish and manage in perpetuity a biologically sound and interconnected habitat reserve system that avoids, minimizes, and mitigates impacts on covered species resulting from covered activities and provides habitat for existing and new viable populations of covered species.
- Implement an adaptive management program that responds to changing circumstances affecting covered species and their habitats.
- Preserve open space and habitat that could also benefit local, non-listed, and transitory wildlife species not identified within the HCP.
- Minimize conflicts between wildlife and human activities, including conflicts resulting from airplane traffic, roads and automobile traffic, predation by domestic animals, and harassment by people.
- Maintain and operate flood control, irrigation, and drainage facilities in a manner that minimizes take of covered species and promotes vegetative cover that enhances habitat values for covered species, consistent with the water agencies' legal obligations.
- Ensure connectivity between the Conservancy's reserves to minimize habitat fragmentation and species isolation. Connections between reserves will generally take the form of common property boundaries between reserves, waterways (primarily irrigation and drainage channels) passing between reserves, and/or an interlinking network of water supply channels or canals.
- Within individual Conservancy reserves, provide a mosaic of habitats that are configured to support species that utilize both wetland and upland habitat.

TABLE 2-1
Proposed Covered Species

Habitat and Species	Federal Status	State Status
Aleutian Canada goose *Branta canadensis leucopareia*	Species of Concern (recently delisted)	NA
Bank swallow *Riparia riparia*	NA	Threatened
Burrowing owl *Athene cunicularia*	Species of Concern	Species of Special Concern
Loggerhead shrike *Lanius ludovicianus*	Species of Concern	Species of Special Concern
Swainson's hawk *Buteo swainsoni*	NA	Threatened
Tricolored blackbird *Agelaius tricolor*	Species of Concern	Species of Special Concern
White-faced ibis *Plegadis chihi*	Species of Concern	Species of Special Concern
Giant garter snake *Thamnophis gigas*	Threatened	Threatened
Northwestern pond turtle *Clemmys marmorata marmorata*	Species of Concern	Species of Special Concern
California tiger salamander *Ambystoma californiense*	Candidate	Candidate Protected Amphibian
Western spadefoot toad *Scaphiopus hammondii*	Species of Concern	Protected Amphibian
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Threatened	NA
Midvalley fairy shrimp *Branchinecta mesovallensis*	NA	NA
Vernal pool fairy shrimp *Branchinecta lynchi*	Threatened	NA
Vernal pool tadpole shrimp *Lepidurus packardi*	Endangered	NA
Boggs Lake hedge-hyssop *Gratiaola heterosepala*	NA	Endangered
Colusa grass *Neostapfia colusana*	Threatened	NA
Delta tule pea *Lathyrus jepsonii ssp. jepsonii*	Species of Concern	NA
Legenere *Legenere limosa*	Species of Concern	NA
Slender Orcutt grass *Orcuttia tenuis*	Threatened	Endangered
Sacramento Orcutt grass *Orcuttia viscida*	Endangered	Endangered
Sanford's arrowhead *Sagittaria sanfordii*	Species of Concern	NA

Source: Natomas Basin Habitat Conservation Plan, July 2002
NA The status is not applicable to this species

- Implement monitoring programs with qualitative and/or quantitative monitoring methods to evaluate management objectives and strategies for the reserve system. The Conservancy shall develop each monitoring plan and shall submit the plan for review and approval by the HCP TAC prior to implementation.
- Increase the diversity and abundance of covered species on reserve lands.
- Revise the reserve design and management based on the most current biological data.

2.4.5 Habitat Reserve Development Strategy

This section summarizes the key elements of the conservation strategy, as presented in the HCP, including the establishment of habitat reserves.

2.4.5.1 Establishment of Habitat Reserves

The primary component of the conservation strategy for funding habitat reserve acquisition would be the use of mitigation fees (see Section 2.4.8) to set aside 0.5 acre of habitat land for each 1.0 gross acre of development that occurs in the Natomas Basin. Land development would result in 17,500 acres in the Natomas Basin being converted to urban and associated uses, in addition to the existing uses as of December 1997. Thus, under the 0.5-to-1 mitigation ratio, approximately 8,750 acres of land would be acquired by the Conservancy (or conservation easement purchased) as habitat reserves. Habitat reserves would be managed by the Conservancy and would consist of managed marsh habitats, upland habitats, rice fields (which would typically be leased for use to rice farmers), and associated buffers and infrastructure. The HCP does not specify any particular land area for acquisition as habitat reserves because many factors could affect the land areas ultimately purchased, including the quality and availability of parcels and the willingness of owners to sell.

The HCP proposes that, on a basinwide basis, 25 percent of the reserve areas would be managed marsh, 50 percent would be in rice production, and 25 percent would be upland habitat (HCP Section IV.C.2.c). This ratio of managed marsh/rice/uplands is subject to review and adjustment during the permit term in accordance with the overall and midpoint review provisions of the HCP (see Chapter 4: Environmental Consequences).

Key features of the habitat reserves and the reserve acquisition criteria and guidelines, as described in the HCP, are summarized in the Sections 2.4.5.2 through 2.4.5.12 below. Additional detail regarding the reserves can be found in Section IV of the HCP.

2.4.5.2 Buffers within Reserve Lands

Reserve lands that are modified to create improved wetland habitat would, to the extent necessary and practicable, be surrounded by adequate buffers to minimize the effects of incompatible adjoining land uses and to ensure a functional transition from improved habitat to adjacent land uses (see Section IV.C.1.c of the HCP). In addition, the buffers would help ensure that the management of reserve lands does not impose an unnecessary burden on adjoining landowners. Buffers would be established on Conservancy lands so that they are inside the reserve system (i.e., the buffers would be part of, not outside of, reserve lands), and would be counted as mitigation lands. Typically, buffers would vary between 30 and 75 feet in width, based on compatibility with adjacent land uses. Buffers may be reduced to less than 30-feet in width where so designated in site-specific management plans as reviewed by HCP

TAC and approved by USFWS and CDFG. Reduction of buffers may occur only where: (1) there is clear evidence that the buffer is unnecessary (e.g., the reserve site is adjacent to another reserve or similar natural habitat); (2) it is determined that buffers are not the best use of reserve land; and, (3) that the lack of buffers will not create use conflicts for owners of property adjacent to the reserve (e.g., issues of vector control or other nuisance). Decisions about the need for buffers and buffer widths would be included in the management plan(s) for any given parcel or block of reserve land.

2.4.5.3 Setbacks

The establishment of setback zones would be considered before reserve lands are acquired. The purpose of the setback requirement would be to ensure that reserve lands would not affect or be affected by existing development or lands that are designated for urban development. All mitigation lands acquired by the Conservancy would be situated a minimum of 800 feet from existing urban lands (as defined in Section IV.C.2.a of the HCP) or lands that are designated for urban uses in an adopted General Plan. The purpose of this provision is to ensure, to the greatest extent possible, that reserve lands are not established near or adjacent to significantly incompatible urban land uses, and not to impose an obligation on either the Conservancy or the owners of the setback lands to manage the lands in any particular fashion. Thus, it would be the responsibility of the Conservancy to locate reserve lands sufficiently far from urban areas or from lands designated for urban uses in an adopted General Plan to fulfill this requirement. The HCP proposes that this setback should be in agriculture, open space, or other non-urban use, and would not be counted as mitigation land. This setback provision does not preclude land development occurring up to the boundaries of a reserve. This setback requirement would not apply to lands acquired adjacent to the west side of Fisherman's Lake, acquired pursuant to the Settlement Agreement. Mitigation lands or easements that do not comply with the 800-foot setback requirement may be acquired on a case-by-case basis, if: (1) the TAC, including its USFWS and CDFG representatives, concur unanimously in a decision to reduce the setback distance, or (2) if not unanimous, the USFWS and CDFG concur in writing that a reduction in the setback distance is necessary or appropriate.

2.4.5.4 Minimum Habitat Block Size

The conservation objectives described above for buffers and setbacks require that by the end of the 50-year term of the ITPs, one habitat block for the reserve system would be a minimum of 2,500 acres in size, and the balance of reserve lands would be in habitat blocks a minimum of 400 acres in size (see Section IV.C.1.e of the HCP). The basis for the 400 acres minimum block and 2,500 acre reserve block size is that large blocks: (1) minimize the "perimeter effect," (2) promote biodiversity by allowing multiple species and niches to occupy the site, and (3) benefit genetic diversity by dispersing interconnected reserves throughout the Natomas Basin. In addition, the 400-acre reserve size is considered the minimum size to allow persistence of covered species.

2.4.5.5 Connectivity

The HCP also includes measures to facilitate connectivity between individual reserves and between reserves and surrounding agricultural lands. A key mechanism for ensuring

connectivity is for RD 1000 and Natomas Mutual to manage the drainage/irrigation canals within the basin to enhance habitat values and minimize harm to covered species.

The HCP focuses on maintaining connectivity among the reserves to allow giant garter snake movement within the Natomas Basin for two reasons: (1) giant garter snake is the most prevalent covered species within the Basin that requires land/water connectivity to travel within the basin and (2) if adequate connectivity is provided for giant garter snake, then the HCP anticipates that other covered species will also be afforded adequate opportunities to migrate within the basin.

With regard to basin-wide connectivity, RD 1000 has identified key drainage channels (see HCP Figure 17) that provide the foundation of the drainage system within the basin that would be retained regardless of the extent of urban development. The combination of primary drainage channels (drainage channels anticipated to remain through the term of the ITPs), secondary drainage channels (that tend to remain unless affected by urban development), and irrigation channels provide connectivity between the existing habitat reserves.

2.4.5.6 Out-of-Basin Reserves

It is currently expected that most of the HCP's reserve lands would be established within the Natomas Basin. Up to 20 percent of the total mitigation lands required by the HCP, however, could be acquired out-of-basin. Area B (a 60,000-acre area of agricultural land north of the Basin that is anticipated to provide viable mitigation opportunities similar to that of the Natomas Basin) would be a potential out-of-basin mitigation area. This area is shown in Figure 2-3. For lands to be acquired in Area B, it must be approved in writing by the USFWS and CDFG that a reserve of adequate size, viability, and habitat value can be established in this area and can support a population of giant garter snakes, Swainson's hawks, and other covered species (see HCP Section IV.C.2.b). Acquisition of land in Area B would occur only if it were unanimously approved by the TAC, or if the USFWS and CDFG approve a written request by the Conservancy.

2.4.5.7 General Acquisition Criteria

The HCP includes specific criteria for evaluating potential reserve acquisitions. Additional criteria for primarily wetland reserves and primarily upland reserves are also specified. The general criteria are:

- The HCP provides for a general division of land uses within habitat reserves as follows: 25 percent managed marsh; 50 percent rice production; and 25 percent upland habitat. The percentages described herein apply on a basin-wide basis and percentages within individual reserves will vary from the percentages described above. While percentages of land use types within individual reserves will vary, each reserve will generally contain a combination of managed marsh, rice production, and upland habitat. For example, a reserve site may be appropriate for upland habitat and not suited to rice production or managed marsh.
- Land has legal water rights to an adequate water supply to serve the anticipated uses (wetland or upland) of the proposed reserve. This would normally mean rights to water from the Natomas Mutual (or its equivalent supplier if outside the basin), but may solely

include groundwater if a groundwater well or wells exist on the property and that such wells can meet acceptable water quantity and quality needs.

- Land is capable of supporting appropriate agricultural cultivation in conjunction with either wetland or upland habitat reserve.
- Land is capable of either supporting or being improved to support various covered species associated with the anticipated type of habitat (wetland or upland) proposed for the potential reserve.
- Upland or wetland specific criteria, as described in the following sections, will be applied as determined appropriate by the Conservancy and the HCP TAC.
- Land is adequately removed from incompatible urban development or uses.

2.4.5.8 Wetland Reserve Acquisition Criteria/Methodology

Wetland habitat reserves would be established by the Conservancy in consultation with the HCP TAC. Wetland reserves are intended to provide for the long-term protection of existing and potential wetland species populations in the Natomas Basin, including the giant garter snake. In most cases, wetland reserves established for the giant garter snake would also be planned to benefit other wetland-associated covered species, including a range of wetland associated species such as tri-colored blackbird, northwestern pond turtle, and Delta tule pea. Consequently, selection of wetland reserve sites would usually focus on the needs of the giant garter snake, except in cases where, in the judgment of Conservancy and the TAC, specific or important needs of other wetland-associated species can be met at sites not selected primarily for giant garter snake.

The criteria for acquisition are:

- Land has existing or potential wetland habitat values that currently support or can support, with necessary enhancement and restoration, giant garter snakes and other wetland-associated covered species.
- Land contains soils that can support rice farming or the type of managed marsh wetlands proposed in the HCP.
- Blocks of reserve lands must also be hydrologically connected to other blocks through irrigation and drainage systems or other systems to ensure connectivity and opportunity for travel by giant garter snakes between sections of the reserve system. To the extent practicable, reserve lands should also be near or adjacent to other protected habitat lands; this would increase the overall effectiveness and size of protected lands in the basin for covered species.
- Lands selected to provide for the HCP wetland habitat system would be situated outside areas known to regularly receive deep flood waters (e.g., the Yolo and Sutter Bypasses). They should also be situated so that they do not directly receive runoff from paved surfaces or inflow from urban storm water drainage systems

2.4.5.9 Marsh Design

At least 25 percent of the land acquired for the reserve system would be converted into managed marsh wetlands to enhance habitat values for the giant garter snake and other

covered species. The HCP outlines the basic habitat elements to be considered in the design of reserves, but site-specific plans for each managed marsh area would be developed when the site is acquired. In summary, the HCP presents a concept for a managed marsh wetland for giant garter snakes including a mosaic of habitat types with variations in topography and an abundance of edges within and between habitat types (Section IV.C.3.d of the HCP). Habitat types would include seasonal marsh with shallow and deep water configurations; permanent marsh; and upland habitats in the form of buffers, "islands," and other high-ground habitats scattered throughout the marsh's wetland component. Permanent water features would be constructed so that they ensure adequate nearby escape cover. A significant portion of the upland component would be above winter flood levels to protect giant garter snakes in their winter retreats. Vegetation would be natural marsh vegetation such as cattails, spike rush, tule clumps, and thimbleberry, placed to maximize protected resting and basking sites and escape cover for the snakes.

2.4.5.10 Management of Rice Reserves

The HCP states that: (1) continued rice farming in the Natomas Basin would support the giant garter snake; and (2) maintaining rice farming on a significant portion of acquired habitat reserve lands would be, unless otherwise indicated, an integral component of the overall conservation strategy. With respect to the selection of rice fields for inclusion in the reserve system and subsequent management, the HCP establishes several standards (Section IV.C.3.e of the HCP), including:

- Rice fields will generally be selected in areas that are within, or that have connectivity to, known giant garter snake populations or known occupied garter snake habitat.
- Rice fields located in areas designated to receive winter flood waters will be avoided (e.g., the Yolo and Sutter Bypasses).
- Rice fields in the reserve system will be managed to maximize giant garter snake compatibility.

Specific measures for managing rice fields in the wetland reserve system would be as determined by the Conservancy and as described in specific reserve management plans in consultation with the HCP TAC.

2.4.5.11 Upland Reserve Acquisition Criteria/Methodology

The upland habitat conservation strategy is intended to provide for the long-term protection of existing and potential upland habitat in the basin that currently supports or could support the Swainson's hawk and other upland species covered species (e.g., the loggerhead shrike and burrowing owl). Consequently, selection of upland reserve sites will usually focus on the needs of the Swainson's hawk, except in cases where, in the judgement of the Conservancy and the HCP TAC, specific or important needs of other upland-associated species can be met at sites not selected primarily for Swainson's hawks.

The Proposed Action's primary strategy to mitigate impacts to the Swainson's hawk is avoidance of development in the Swainson's Hawk Zone and the acquisition of upland habitat inside the Swainson's Hawk Zone (illustrated on Figures 2-5 and 3-5). The HCP strategy also includes habitat design outside the Swainson's Hawk Zone. The determination of appropriate areas outside that one would be made in coordination with the HCP TAC.

This primary strategy is designed to provide optimum nesting and foraging habitat for the hawk in the area where most nesting occurs currently within the Natomas Basin along the Sacramento River. In consideration of these strategies, upland reserve acquisition sites will be evaluated based upon the following criteria:

- The land contains known or potential Swainson's hawk nest trees, or includes or is adjacent to suitable foraging habitat (e.g., agricultural croplands and grasslands).
- Agricultural croplands and grasslands that, based on crop type or surveys, are expected to have a suitable Swainson's hawk prey base and, preferably, have historically been used by Swainson's hawks (as determined by CDFG data and reports).
- The land is or can be used to grow crops conducive to Swainson's hawk foraging, including alfalfa and other hay crops, lightly grazed pasture, fallow fields, summer harvested row crops, but not cotton and other late harvest crops (see Section II.C.3.c of the HCP).
- If possible, the land contains appropriate areas for the establishment of riparian woodland habitat, or isolated groves in agricultural fields, for future use by Swainson's hawks. Trees which may be planted include valley oaks, cottonwoods, willows, sycamores, and California black walnut.
- Contiguity of upland reserve sites will be maximized. The Swainson's hawk conservation objectives in Chapter I of the HCP direct the Conservancy to focus acquisition of upland reserves in the Swainson's Hawk Zone. That objective, together with this provision, is intended to ensure that Swainson's hawk habitat protected in reserves will not be excessively fragmented, either inside the Swainson's Hawk Zone or outside the zone, and that habitat contiguity will be a primary criteria under which upland reserve sites will be selected. The value of edge habitat with wetlands, however, will be considered in reserve design.
- The land supports or has the potential to support other covered species that use upland habitat.

On the basis of the acquisition criteria described in the 1997 HCP (City of Sacramento, 1997a), which are substantially the same as described above, and the incidental take authorization granted to the Conservancy, the Conservancy has acquired 12 parcels within the Natomas Basin totaling over 2,100 acres as of early 2002. These parcels represent the initial purchases in the 8,750-acre habitat reserve system if the HCP is approved. Pursuant to HCP requirements, management plans have been prepared for nine of these 12 properties. Additional management plans will be developed for other properties in the future using the acquisition and management criteria included in Chapter IV of the HCP. These criteria are designed to avoid environmental impacts. Therefore, this environmental document provides a program environmental review for future acquisitions and management plans. Future acquisition and management activities that are in conformance with the HCP criteria and that do not pose new or substantially more severe environmental impacts that have not been covered by this EIS/EIR, might not need further environmental review or could require only limited environmental review.

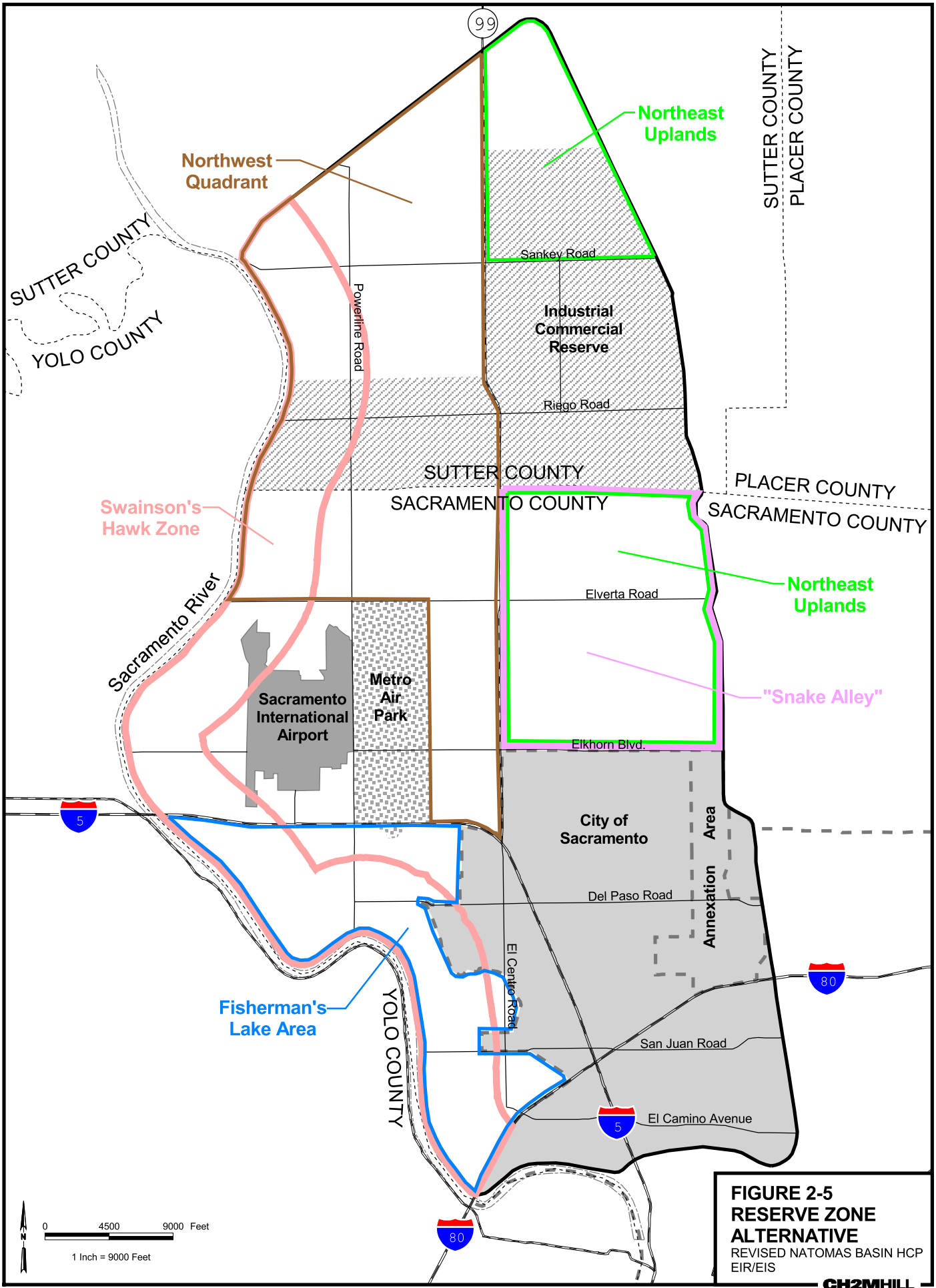

FIGURE 2-5
RESERVE ZONE ALTERNATIVE
REVISED NATOMAS BASIN HCP EIR/EIS

CH2MHILL

CH2M Hill RDD ArcView Project File \\Thor\Cart1\rddgis\natomashcp\nat_hcp.apr fig2_5reserve_zone.pdf 3:42 p.m. 07-2-2002

2.4.5.12 Reserve Management /Site Specific Management Plans

All land acquired for reserves under the Proposed Action, whether it is controlled through easement or purchased outright, would require preservation management, enhancement and/or restoration, and monitoring activities. Following the habitat reserve acquisition process, site-specific management plans will be prepared for each suitable parcel or block of reserve lands. Each management plan would specify: (1) management policies not otherwise prescribed by the HCP (see Section IV.D.1 of the HCP); (2) specific management activities, including establishment of suitable monitoring programs (see Section IV.D.2 of the HCP); (3) restoration and enhancement needs (see Section IV.D.3 of the HCP); and reserve water management (see Section IV.D.4 of the HCP). The Conservancy would be responsible for preparing management plans for all reserve lands, in consultation with the HCP TAC. Prior to implementation, each management plan would be submitted to the USFWS and CDFG for review, revision if appropriate, and written approval. A submitted plan would be deemed approved on the 60th day after the Conservancy provides written notification to the USFWS and CDFG. Formal USFWS and CDFG review of proposed management plans could be waived if all members of the TAC, including its USFWS and CDFG representatives, unanimously concur in the plan.

2.4.6 Conservation Measures

This section presents the conservation measures for the permittees (see Section V of the HCP for detailed discussion of the conservation measures).

2.4.6.1 Land Use Agencies' Conservation Measures

In addition to the habitat reserve system described above, the Proposed Action also includes measures to avoid, minimize, or mitigate incidental take during covered activities that could occur during land development. These minimization measures include canal/ditch dewatering and seasonal grading restrictions for giant garter snakes, and nest site protection measures for Swainson's hawks. These and other minimization measures to be implemented by the City and Sutter County are described in Section V.A of the HCP, and include the following measures:

General Measures to Reduce Take

- Not less than 30 days nor more than six months prior to commencement of construction activities on specific development sites, a Preconstruction survey of the site shall be conducted to determine the status and presence of, and likely impacts to, all covered species on the site.
- The City will take necessary action to amend the North Natomas Financing Plan to include the buffer area on the east side of Fisherman's Lake in the Land Acquisition Program (i.e., development impact fees will be increased to fund acquisition of this setback area). This buffer area would be managed by the Conservancy.
- Tree Preservation: Valley oaks and other large trees should be preserved whenever possible. Preserve and restore stands of riparian trees used by Swainson's hawks and other animals for nesting, particularly adjacent to Fisherman's Lake.

- Native Plants: Improve the wildlife value of landscaped parks, buffers, and developed areas by planting trees and shrubs which are native to the Natomas Basin and therefore are used by native animals.
- Protect Raptor Nests: Avoid the raptor nesting season when scheduling construction near nests. Specific avoidance criteria are set forth in the species-specific measures later in this section.
- Protected Plant/Animal species, also referred to as "Special Status Species": Search for protected plant species during flowering season prior to construction and protected animal species during the appropriate season.

Vernal Pool Species

In the event a biological reconnaissance survey or the preconstruction survey identifies that vernal pool resources are onsite, a vernal pool species specific biological assessment must be provided by the developer to the land use agency during the vernal "wet" pool season (as established by USFWS) to determine the type and abundance of species present. The species specific biological assessment must be prepared by a qualified field biologist and shall list the methods of field analysis, condition of habitat size, and acreage of direct and indirect impact (as defined by seasonal inundation and hydric soils and other appropriate characteristics), and species present. This assessment must be submitted with the formal development application and prior to approval of an urban development permit by the land use agency. If it is determined that wetland and/or vernal pool resource would be disturbed by a project, then take of vernal pool associated covered species would be covered under the ITPs, subject to the following limitations and guidelines.

- Where site investigations indicate vernal pool species could occur, the developer shall notify the land use agency regarding the potential for impacts to vernal pool species. Such notification shall include biological data adequate to allow the land use agency, and the USFWS and CDFG, to determine the potential for impacts vernal pool species resulting from the proposed development.
- Following notification by the land use agency, the USWFS and CDFG shall identify specific measures required to avoid, minimize, and mitigate impacts to vernal pool species to be implemented prior to disturbance and in accordance with adopted standards or established guidelines (e.g., the USFWS programmatic biological opinion for vernal pool species). If vernal pool species are found within proposed project areas, the project proponent shall coordinate with the USFWS and CDFG to ensure conservation measures are incorporated to avoid and protect sensitive plant species. In some cases, USFWS and CDFG could require complete avoidance of vernal pool species, such as the presence of covered species such as slender Orcutt grass, Sacramento Orcutt grass, Colusa grass and/or vernal pool tadpole shrimp. Such measures shall be identified by USFWS and CDFG within 30 days or as soon as possible thereafter of notification and submittal of biological data to the agencies by the land use agency.

A developer or private land owner may propose to dedicate by fee title or conservation easement that portion of the property with non-jurisdictional vernal pool resources and the associated 250-foot buffer surrounding the vernal pool resource to the Conservancy. The dedication of vernal pool resources and associated buffer shall include a management and

monitoring plan and an adequate endowment. Acceptance of the offer to dedicate shall be subject to review and approval by the land use agency, the Conservancy's Board of Directors, and the HCP TAC. The Conservancy's Board and the HCP TAC shall consider the location, connections, species present, condition of the proposed site to be dedicated, adequacy of the management plan and endowment, and may decide to accept the dedication in lieu of payment of the land acquisition portion of the HCP mitigation fee for the affected acreage. The Conservancy's Board may accept or decline the offer based on the balance of habitat needs and the biological goals of the HCP. If the dedication is accepted, a reduction in the land acquisition portion of the habitat mitigation fee shall be granted to the developer for the portion (calculated on an acreage basis) of the site permanently preserved by easement or dedication. However, habitat mitigation fees, in full, must be paid on the remaining developable acreage on the site, and the monitoring and administrative portion of the fees shall be paid for all acres on the site. Additional conditions to preserve the biological integrity of the site (such as reasonable drainage conditions) may be imposed by the land use agency in consultation with the Conservancy and the HCP TAC. In the event the Conservancy does not accept the offer to dedicate, then one of the following mitigation approaches shall be employed.

- In the event on-site avoidance can not be reasonably accomplished, the following mitigation measures will be required:
  - No grading, development or modification of the vernal pool site or the buffer area extending 250 feet around the perimeter of the vernal pool site may occur during the vernal pool "wet" season as identified by USFWS. Protective fencing shall be established around the perimeter of the vernal pool site and the buffer area during the vernal pool wet season.
  - In consultation with the Conservancy and the HCP TAC, soils and cysts from the vernal pool may be relocated as soon as practicable during the dry season to a suitable Conservancy reserve site, provided the relocation/recreation site is approved by the Conservancy, the HCP TAC, and USFWS.
  - If it is not practicable to relocate vernal pool resources, and/or the Conservancy and the HCP TAC determine that the Conservancy does not have a suitable reserve site for relocation of resources, then the applicant shall follow the mitigation approach outlined below.
- In the event all of the above approaches are not appropriate for the site, the land use agency shall require the developer to purchase credits from a USFWS-approved mitigation bank in accordance with the standards set forth in the following Table 2-2.

TABLE 2-2
Mitigation Ratios

	Bank	**Non-Bank**
Preservation	2:1	3:1
Creation	1:1	2:1

Preservation Component: For every acre of habitat directly or indirectly affected, at least two vernal pool credits will be dedicated within a USFWS-approved ecosystem preservation bank, or based on USFWS evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site or on another non-bank site as approved by the USFWS.

Creation Component: For every acre of habitat directly affected, at least one vernal pool creation credit will be dedicated within a USFWS-approved habitat mitigation bank, or based on USFWS evaluation of site-specific conservation values, two acres of vernal pool habitat created and monitored on the project site or on another non-bank site as approved by the USFWS.

Measures to Reduce Take for Individual Species

This section presents measures for the individual species covered by the ITPs.

Giant Garter Snake

- Within the Natomas Basin, all construction activity involving disturbance of habitat, such as site preparation and initial grading, is restricted to the period between May 1 and September 30. This is the active period for the giant garter snake and direct mortality is lessened, because snakes are expected to actively move and avoid danger.

- Preconstruction surveys for giant garter snake, as well as other covered species, must be completed for all development projects by a qualified biologist approved by USFWS. If any giant garter snake habitat is found within a specific site, the following additional measures shall be implemented to minimize disturbance of habitat and harassment of giant garter snake, unless such project is specifically exempted by USFWS.

- Between April 15 and September 30, all irrigation ditches, canals, or other aquatic habitat should be completely dewatered, with no puddled water remaining, for at least 15 consecutive days prior to the excavation or filling in of the dewatered habitat. Make sure dewatered habitat does not continue to support giant garter snake prey, which could detain or attract snakes into the area. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary. This measure removes aquatic habitat component and allows giant garter snake to leave on their own.

- For sites that contain giant garter snake habitat, no more than 24-hours prior to start of construction activities (site preparation and/or grading), the project area shall be surveyed for the presence of giant garter snake. If construction activities stop on the project site for a period of two weeks or more, a new giant garter snake survey shall be completed no more than 24-hours prior to the re-start of construction activities.

- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project as Environmentally Sensitive Areas. This area shall be avoided by all construction personnel.

- Construction personnel completing site preparation and grading operations shall receive USFWS approved environmental awareness training. This training instructs workers on how to identify giant garter snakes and their habitats, and what to do if a giant garter snake is encountered during construction activities. During this training an on-site biological monitor shall be designated.

- If a live giant garter snake is found during construction activities, immediately notify the USFWS and the project's biological monitor. The biological monitor, or his assignee, shall do the following:
- Stop construction in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for giant garter snake should be determined in advance of construction and snakes should always be allowed to leave on their own. If a giant garter snake does not leave on its own within 1 working day, further consultation with USFWS is required.
- Upon locating dead, injured or sick threatened or endangered wildlife species, the Permittees or their designated agents must notify within 1 working day the Service's Division of Law Enforcement (2800 Cottage Way, Sacramento CA 95825) or the Sacramento Fish and Wildlife Office (2800 Cottage Way, Room W-2650, Sacramento, CA 95825, telephone 916 414-6600). Written notification to both offices must be made within 3 calender days and must include the date, time, and location of the finding of a specimen and any other pertinent information.
- Fill or construction debris may be used by giant garter snake as an over-wintering site. Therefore, upon completion of construction activities remove any temporary fill and/or construction debris from the site. If this material is situated near undisturbed giant garter snake habitat and it is to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that giant garter snake are not using it as hibernaculae.

Swainson's Hawk

- To maintain and promote Swainson's hawk habitat values, Sutter County will not obtain coverage under the ITPs, nor will Sutter County grant urban development permit approvals, for development on land within the one-mile wide Swainson's Hawk Zone adjacent to the Sacramento River. The City of Sacramento has limited its permit area within the Swainson's Hawk Zone to the approximately 252 acres located within the North Natomas Community Plan that were designated for urban development in 1994 and, likewise, will not grant development approvals within the Swainson's Hawk Zone beyond this designated 252 acres. Of these 252 acres of land within the Swainson's Hawk Zone, approximately 80 acres will be incorporated into a 250-foot wide agricultural buffer along the City's side of Fisherman's Lake. Should either the City or the County seek to expand coverage for development within the Swainson's Hawk Zone beyond that described above, granting of such coverage would require an amendment to the HCP and permits and would be subject to review and approval by the USFWS and the CDFG, in accordance with all applicable statutory and regulatory requirements.
- Best management practices for the nearly 250 miles of canals within the basin will seek to preserve vegetative cover which will provide food and protection for a productive prey base. This prey base will disperse onto adjacent habitats where it will be available as Swainson's hawk forage.
- Every year, prior to the commencement of development activities at any development site within the HCP area, a preconstruction survey shall be completed by the respective

developer to determine whether any Swainson's hawk nest trees will be removed onsite, or active Swainson's hawk nest sites occur on or within 1/2 mile of the development site. These surveys shall be conducted according to the Swainson's Hawk Technical Advisory Committee's methodology or updated methodologies, as approved by the USFWS and CDFG, using experienced Swainson's hawk surveyors.

- If breeding Swainson's hawks (i.e., exhibiting nest building or nesting behavior) are identified, no new disturbances (e.g., heavy equipment operation associated with construction) will occur within 1/2 mile of an active nest between March 15 and September 15 or until a qualified biologist, with concurrence by CDFG, has determined that the young have fledged or that the nest is no longer occupied. If the active nest site is located within 1/4 mile of existing urban development, the no new disturbance zone can be limited to 1/4 mile versus 1/2 mile. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 1/2 mile of an active nest are not restricted.
- Where disturbance of a Swainson's hawk nest cannot be avoided, such disturbance shall be temporarily avoided (i.e., defer construction activities until after the nesting season) and then, if unavoidable, the nest tree may be destroyed during the non-nesting season. For purposes of this provision the Swainson's hawk nesting season is defined as March 15 to September 15. If a nest tree (any tree that has an active nest in the year the impact is to occur) must be removed, tree removal shall only occur between October 1 and February 1.
- If a Swainson's hawk nest tree is to be removed and fledglings are present, the tree may not be removed until September 15 or until CDFG has determined that the young have fledged and are no longer dependent upon the nest tree.
- If construction or other project related activities that could cause nest abandonment or forced fledgling are proposed within the 1/4 mile buffer zone, intensive monitoring (funded by the project sponsor) by a CDFG-approved raptor biologist will be required. Exact implementation of this measure will be based on specific information at the project site.
- Valley oaks, tree groves, riparian habitat, and other large trees will be preserved wherever possible. The City and Sutter County shall preserve and restore stands of riparian trees used by Swainson's hawks and other animals, particularly near Fisherman's Lake and elsewhere in the Natomas Basin where large oak groves, tree groves and riparian habitat have been identified.
- The raptor nesting season shall be avoided when scheduling construction near nests in accordance with guidelines specified by species below, or in accordance with other applicable guidelines provided by the HCP TAC or published by CDFG and the USFWS.
- The HCP will require 15 sapling trees to be planted within the habitat reserves for every Swainson's hawk nesting tree anticipated to be impacted by authorized development. It will be the responsibility of each land use agency approving development that will impact Swainson's hawk nest trees to provide funding for purchase, planting, maintenance, and monitoring of trees at the time of approval of each authorized development project. The Conservancy shall determine the appropriate cost for planting, maintenance, and monitoring of trees.

- The land use agency permittee approving a project that impacts an existing Swainson's hawk nest tree shall provide funding sufficient for monitoring survival success of trees for a period of five years. For every tree lost during this time period, a replacement tree must be planted immediately upon the detection of failure. Trees planted to replace trees lost shall be monitored for an additional five-year period to ensure survival until the end of the monitoring period. A 100 percent success rate shall be achieved. All necessary planting requirements and maintenance (e.g., fertilizing, irrigation) to ensure success shall be provided. Trees must be irrigated for a minimum of the first five years after planting, and gradually weaned from irrigation over an approximate two-year period. If larger stock is planted, the number of years of irrigation must be increased accordingly. In addition, 10 years after planting, a survey of the trees shall be completed to assure 100 percent establishment success. Remediation of any dead trees shall include completion of the survival and establishment process described.

- Of the replacement trees planted, a variety of native tree species will be planted to provide trees with differing growth rates, maturation, and life span. This will ensure that nesting habitat will be available quickly (5-10 years in the case of cottonwoods and willows), and in the long term (i.e. valley oaks, black walnuts, and sycamores), and minimize the temporal losses from impacts to trees within areas scheduled for development within the 50-year permit life. Trees shall be sited on reserves in proximity to hawk foraging areas. Trees planted will be placed in groups of three. Planting stock will be a minimum of five-gallon container stock for oak and walnut species.

- In order to reduce temporal impacts resulting from the loss of mature nest trees, mitigation planting shall occur within 14 months of approval of the HCP and ITPs. It is estimated at this time that 4 nesting trees within the City are most likely to be impacted by authorized development in the near term. Therefore, in order to reduce temporal impacts, the City will advance funding for 60 sapling trees of diverse, suitable species (different growing rates) to the Conservancy within the above referenced 14 months. It is anticipated that the City will recover costs of replacement nest trees as an additional cost to be paid by private developers at the time of approval of their development projects that impact mature nest trees.

- For each additional nesting tree removed by land use agencies covered activities, the land use agency shall fund and provide for the planting of 15 native sapling trees of suitable species with differing growth rates at suitable locations on habitat reserves. Funding for such plantings shall be provided by the applicable permittee within 30 days of approving a covered activity that will impact a Swainson's hawk nesting tree.

Valley Elderberry Longhorn Beetle (VELB)

- All development must comply with the conditions of the USFWS's Mitigation Guidelines for the Valley Elderberry Longhorn Beetle, dated 1999.

- Impacts to VELB habitat, including any direct and indirect effects on VELB critical habitat, will be avoided whenever possible. To the maximum extent practicable, projects will be designed to avoid stands of elderberry bushes and to avoid isolation of the plants from other nearby populations. Preconstruction surveys at the construction impact site will be conducted to assess the appropriate amount of mitigation.

- If elderberry plants cannot be avoided, they shall be transplanted during the dormant season (November 1 to February 15) to an area protected in perpetuity and approved by the USFWS.
- Replacement seedling plants will be provided at a ratio of 2 to 1 to 5 to 1 depending on the extent of beetle utilization of the plants moved or lost. An 1,800-square-foot area will be provided for each transplanted elderberry shrub or every five elderberry seedling plants.
- Annual monitoring of VELB habitat will be provided in the planted mitigation sites for a ten-year period.
- Replacement elderberry shrubs will meet a 60 percent survival rate by the end of the ten year period and the 60 percent survival rate shall be required for the term of the applicable permit.

Tricolored Blackbird

- Prior to approval of an urban development permit, the involved land use agency will require preconstruction surveys of potential breeding and nesting habitat for presence of breeding and nesting tricolored blackbirds.
- Disturbance to active (occupied) nesting colonies will be avoided during the nesting season. A boundary shall be marked by brightly colored construction fencing that establishes a boundary 500 feet from the active nest site. No disturbance associated with authorized development shall occur within the 500 foot fenced area during the nesting season of April through July. A qualified biologist, with concurrence of USFWS, must determine young have fledged and nest sites are no longer active before the nest site can be disturbed.

Aleutian Canada Goose

- Prior to approval of urban development permits, the applicable land use agency shall require Preconstruction surveys. If such surveys determine Aleutian Canada geese are present, the land use agency shall require the developer to consult with CDFG and the USFWS to determine appropriate measures to avoid and minimize take of individuals. Such measures shall be appropriate for the use (e.g., foraging, roosting, etc.) and activity of the species, since this species is a seasonal visitor to the basin.

White-faced Ibis

- Prior to approval of an urban development permit, the involved land use agency will require preconstruction surveys.
- Disturbance to active nest sites within 1/4 mile of nests will be avoided within the nesting season of May 15 through August 31. A qualified biologist, with concurrence of USFWS, must determine that young have fledged or that the nest is no longer occupied prior to disturbance of the nest site.

Loggerhead Shrike

- Prior to approval of Urban Development Permits, the involved land use agency shall require pre-construction surveys.

- If surveys identify an active loggerhead shrike nest that will be impacted by authorized development, the developer shall install brightly colored construction fencing that establishes a boundary 100 feet from the active nest. No disturbance associated with authorized development shall occur within the 100 foot fenced area during the nesting season of March 1 through July 31. A qualified biologist, with concurrence of USFWS, must determine young have fledged or that the nest is no longer occupied prior to disturbance of the nest site.

Burrowing Owl

- Prior to the initiation of grading or earth disturbing activities, the applicant/developer shall hire a CDFG approved qualified biologist to perform a pre-construction survey of the site to determine if any burrowing owls are using the site for foraging or nesting. The pre-construction survey shall be submitted to the land use agency with jurisdiction over the site prior to the developer's commencement of construction activities and a mitigation program shall be developed and agreed to by the land use agency and developer prior to initiation of any physical disturbance on the site.

- Occupied burrows shall not be disturbed during nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive measures that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

- If nest sites are found, the USFWS and CDFG shall be contacted regarding suitable mitigation measures, which may include a 300 foot buffer from the nest site during the breeding season (February 1 - August 31), or a relocation effort for the burrowing owls if the birds have not begun egg-laying and incubation or the juveniles from the occupied burrows are foraging independently and are capable of independent survival. If on-site avoidance is required, the location of the buffer zone will be determined by a qualified biologist. The developer shall mark the limit of the buffer zone with yellow caution tape, stakes, or temporary fencing. The buffer will be maintained throughout the construction period.

- If relocation of the owls is approved for the site by USFWS and CDFG, the developer shall hire a qualified biologist to prepare a plan for relocating the owls to a suitable site. The relocation plan must include: (a) the location of the nest and owls proposed for relocation; (b) the location of the proposed relocation site; (c) the number of owls involved and the time of year when the relocation is proposed to take place; (d) the name and credentials of the biologist who will be retained to supervise the relocation; (e) the proposed method of capture and transport for the owls to the new site; (f) a description of the site preparations at the relocation site (e.g., enhancement of existing burrows, creation of artificial burrows, one-time or long-term vegetation control, etc.); and (g) a description of efforts and funding support proposed to monitor the relocation.

- Relocation options may include passive relocation to another area of the site not subject to disturbance through one way doors on burrow openings, or construction of artificial burrows in accordance with the CDFG's October 17, 1995, Staff Report on Burrowing Owls Mitigation (see Appendix D).

- Where on-site avoidance is not possible, disturbance and/or destruction of burrows shall be offset through development of suitable habitat on TNBC upland reserves. Such habitat shall include creation of new burrows with adequate foraging area (a minimum of 6.5 acres) or 300 feet radii around the newly created burrows. Additional habitat design and mitigation measures are described in the CDFG's October 17, 1995, Staff Report on Burrowing Owl Mitigation.

Bank Swallow

- Disturbance to bank swallow nesting colonies will be avoided within the nesting season (May 1 through August 31) during all authorized development activities conducted in the permit areas.

- If surveys identify an active bank swallow nesting colony that will be impacted by authorized development, the developer shall install brightly colored construction fencing that establishes a boundary 250 feet from the active nesting colony. No disturbance associated with Authorized Development shall occur within the 250 foot fenced area during the nesting season of May 1 through August 31. Additionally, disturbance within 1/2 mile upstream or downstream of the colony will be avoided if the colony is located upon a natural waterway

Northwestern Pond Turtle

- Take of the northwestern pond turtle as a result of habitat destruction during construction activities, including the removal of irrigation ditches and drains, and during ditch and drain maintenance, will be minimized by the dewatering requirement described above for giant garter snake.

California Tiger Salamander

- Prior to approval of urban development permits, the involved land use agency shall require preconstruction surveys. If future surveys determine the presence of California tiger salamander, the land use agency shall require the developer to consult with CDFG and the USFWS to determine appropriate measures to avoid and minimize take of individuals.

Western Spadefoot Toad

- Prior to approval of urban development permits, the applicable land use agency shall require preconstruction surveys. If such surveys determine western spadefoot toads are present, the land use agency shall require the developer to consult with CDFG and USFWS to determine appropriate measures to avoid and minimize take of individuals.

Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, and Midvalley Fairy Shrimp

- Prior to approval of urban development permits, the involved land use agency shall require preconstruction surveys. If such surveys determine that vernal pool fairy shrimp, vernal pool tadpole shrimp, and midvalley fairy shrimp are present, the land use agency shall require the developer to consult with USFWS to determine appropriate measures to avoid and minimize take of individuals.

Delta Tule Pea

- If Delta tule pea plants are identified through Preconstruction surveys, the involved land use agency shall provide notice to USFWS, CDFG, and the California Native Plant

Society. Under such circumstances, the development proponent shall allow the transplantation of plants prior to site disturbance.

Sanford's Arrowhead

- If Sanford's arrowhead plants are identified through Preconstruction surveys, the involved land use agency shall provide notice to USFWS, CDFG, and the California Native Plant Society. Under such circumstances, the development proponent shall allow the transplantation of plants prior to site disturbance.

Boggs Lake Hedge-Hyssop, Sacramento Orcutt Grass, Slender Orcutt Grass, Colusa Grass, and Legenere

- Prior to approval of urban development permits, the involved land use agency shall require Preconstruction surveys. If such surveys determine Boggs Lake hedge-hyssop, Sacramento Orcutt grass, slender Orcutt grass, Colusa Grass, or legenere are present, the land use agency shall require the developer to consult with USFWS to determine appropriate measures to avoid and minimize take of individuals.

2.4.6.2 Natomas Basin Conservancy Conservation Measures

- As a permittee, the Conservancy shall employ a number measures to avoid, minimize, and mitigate take of covered species during the implementation of the Conservancy's covered activities. The Conservancy's covered activities comprise the acquisition and management of habitat reserves including, where approved through site specific management plans, development activities necessary to create suitable supportive habitat for the covered species.

General Conservation Strategies

- Pre-acquisition field reconnaissance shall be conducted to determine the types of species present on any site for which acquisition is contemplated. The purpose of the pre-acquisition reconnaissance is to identify the types of covered species that could already be present on the site and to identify general strategies to avoid take of covered species during the acquisition, development, and management phases of reserve operations. Not less than 30 days prior to commencement of major construction activities on specific reserve sites, the Conservancy shall conduct a formal Preconstruction survey of the site to determine the status and presence of, and likely impacts to, all covered species on the site. For purposes of the Conservancy, major construction shall include site grading or contouring, dredging or filling of ditches or drainage systems, and construction of reserve access roads or other structures. Actions involving substantial vegetation removal or tree removal shall also be subject to the Preconstruction survey requirement, which could be more focused to identify the presence of nests of covered species or other likely species impacts. The Conservancy would utilize qualified biological consultants to carry out the Preconstruction surveys and, as necessary, to implement specific take minimization measures set forth in the HCP and approved by the USFWS, CDFG, and the HCP TAC.

General Conservation Strategies for Wetland and Upland Species and Reserves

- The Conservancy shall employ the wetland and upland conservation acquisition and management strategies described in Sections 2.4.5.7, 2.4.5.8, and 2.4.5.9.

Conservation Strategies for Individual Species

Giant Garter Snake

- No grading, excavating or filling activities may take place within 30 feet of existing giant garter snake habitat between October 1 and May 1, unless authorized by the USFWS.
- The construction of replacement habitat may take place at any time of year, but summer is preferred.
- Rice fields and other existing habitat may be diverted as soon as the new habitat is completed, but the placement of dams or other diversion structures in the existing habitat will require on-site USFWS approval.
- Replacement habitat will be revegetated as directed by USFWS or as specified in the individual site specific management plan for the reserve.
- Dewatering of existing habitat may begin any time after November 1, but no later than April 1 of the following year. All water must be removed from existing habitat by April 15, or as soon thereafter as weather permits, and the habitat must remain dry without any standing water for 15 consecutive days after April 15 and prior to excavating or filling the dewatered habitat unless otherwise specified in the approved site specific reserve management plan for the site.
- The USFWS shall evaluate the potential for trapping and removal of giant garter snakes from the site and relocation to other suitable habitat. Any such salvage will be undertaken by USFWS at their expense, unless the Conservancy, at its discretion, elects to undertake or pay for the relocation. If the Conservancy elects to trap and relocate giant garter snakes from a development site, it shall consult with the USFWS prior to initiation of any such activities to obtain approval and determine appropriate methodologies.

Swainson's Hawk

The Conservancy shall implement the following measures to further enhance habitat and to reduce the potential for take of covered upland species during improvement, operation, and maintenance of habitat reserves:

- The Conservancy, in conjunction with the land use agencies, will monitor proposed development in the Swainson's Hawk Zone, where the majority of known Swainson's hawk nest sites are currently located and, hence, much of the Swainson's hawk nesting and foraging in the basin occurs. Based on existing general plans, development in this zone is expected to be limited over the term of the take permits. However, if such development does occur, reserve lands established in mitigation for that development shall, likewise, be located within the Swainson's Hawk Zone. In addition, the Conservancy shall set as a top priority the acquisition of upland reserve sites in the Swainson's hawk zone (via easement or land purchase). Further, any reserve lands established in the Swainson's Hawk Zone shall, to the maximum extent possible, be managed to benefit all upland-associated covered species, though any management in this zone must be fully consistent with Swainson's hawk biology and needs.
- To enhance the success of the species, the habitat reserves shall include tree plantings of valley oaks (Quercus lobata), cottonwoods (Populus fremontii), various willows (including black willow), or other suitable species to recreate suitable nesting sites for the

Swainson's hawk over the term of the take permits. Such tree planting shall be in reasonable proximity to upland foraging areas covered by the conservation plan including agricultural areas managed by the Conservancy.

- For rice fields operated by the Conservancy, best practices to increase habitat for Swainson's hawk shall be incorporated. This includes allowing at least 10 percent of rice fields to fallow each year as well as allowing foraging before and after rice flooding. It is estimated that during the time hawks are present in the basin, drained or unflooded rice fields provide foraging habitat for an average of 2 months every year. Additionally, wildlife-friendly agricultural practices (organic farming, providing crop residual for rodent production, similar to those used at the nearby Cosumnes River Preserve) are expected to greatly increase the habitat value of ricelands to the hawk and other covered species.

- Where possible, develop or restore upland components of wetland reserves such that upland covered species including the Swainson's hawk also benefit from the habitat. Thus, wetland reserves, along with the upland reserves described above, will help offset habitat losses affecting the Swainson's hawk within the Natomas Basin. Also, the upland component of wetland reserves will benefit some of the upland covered species, especially those that also have wetland habitat needs (e.g., the tricolored blackbird).

- Utilize best management practices to ensure availability of food sources for Swainson's hawk including meadow mice (Microtus californicus) and insects. In the Central Valley, meadow mice and insects make up a significant portion of the Swainson's hawk's diet. In the management of nearby similarly designed preserves (e.g., Beach Lake Mitigation Bank, Stones Lakes National Wildlife Refuge), the increased availability of water in previously dry grasslands has increased Microtus abundance (Caltrans, 1991). This would be expected given the biological requirement of Microtus for green food. This species has been found to increase its reproductive rate nearly tenfold in the presence of persistent green food over dry grasses (Batzli, 1986; Bowen, 1987; Gill, 1976). Those green plant species generally preferred by Microtus (bent grass, chickweed, bedstraw, sorrel, plantain, and bromus) are tolerant of limited inundation and will do well in a seasonally wetland environment, as well as those ruderal habitats associated with agricultural and water conveyance systems (Ostfeld and Klosterman, 1986). It is expected that the Water Agencies' Covered Activities on nearly 250 miles of canals, improved agricultural practices timing of water management (floodup and drawdown) on reserve lands, and the increase in edge or ecotone between upland and wetland habitats will greatly enhance upland habitat values for Swainson's hawk.

- Specific plans for acquisition of upland habitat reserve lands will be determined by the Conservancy in consultation with the HCP TAC, by applying the objectives and criteria of the HCP, and consistent with the requirements described in Chapter IV of the HCP. Specific management plans for reserve sites providing Swainson's hawk habitat will be developed as described in Chapter IV of the HCP.

- Upland reserves will initially be designed to maintain existing Swainson's hawk populations and, where possible, to increase such populations through the tree planting program. However, such reserves will be re-designed, as necessary, to meet Swainson's

Hawk recovery plan goals, after a Swainson's Hawk Recovery Plan is prepared and approved by CDFG.

- Reserve design will use wildlife-friendly agricultural practices. For health and safety reasons, rodent control measures will be limited to that necessary to maintain structurally sound flood control levees within the Basin.
- Every year, prior to the commencement of development activities at any reserve site within the HCP plan area, a Preconstruction survey shall be completed by the Conservancy to determine whether any Swainson's hawk nest trees will be removed on-site, or active Swainson's hawk nest sites occur on or within 1/2 mile of the development site. These surveys shall be conducted according to the Swainson's Hawk Technical Advisory Committee's methodology or updated methodologies, as approved by the site specific management plan for the reserve site.
- If an active Swainson's hawk nest is identified, no new disturbances (e.g., heavy equipment operation associated with construction) will occur within 1/2 mile of an active nest between March 15 and September 15. If the active nest site is located within 1/4 mile of existing urban development, the no new disturbance zone can be limited to the 1/4 mile versus 1/2 mile. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 1/2 mile of an active nest are not restricted.
- Where disturbance of a Swainson's hawk nest cannot be avoided, such disturbance shall be temporarily avoided (i.e., defer construction activities until after the nesting season) and then, if unavoidable, the nest tree may be destroyed during the non-nesting season. For purposes of this provision the Swainson's hawk nesting season is defined as March 15 to September 15. If any tree must be removed that has an active nest in the year the impact is to occur, the tree removal should only occur between October 1 and February 1.
- Disturbance shall be avoided within 1/2 mile of an active nest between March 15 and August 15, or until fledglings are no longer dependent on nest tree habitat (which could be as late as September 15).
- If a Swainson's hawk nest tree is to be removed and fledglings are present, the tree must not be removed until September 15 or until CDFG has determined that the young have fledged and are no longer dependent upon the nest tree.
- Valley oaks, tree groves, riparian habitat and other large trees will be preserved wherever possible.
- The Conservancy shall plant replacement trees in upland reserve areas and where appropriate on the edges of wetland reserves. These trees may be trees contributed to the reserve as part of the land use agencies' tree mitigation program, or could be trees determined to be important to the habitat enhancement of objectives of the site. The replacement mitigation trees shall include a variety of native tree species with differing growth rates, maturation, and life span. This will ensure that nesting habitat will be available quickly (5-10 years in the case of cottonwoods and willows), and in the long term (i.e. valley oaks, black walnuts, and sycamores). Trees shall be sited on reserves in proximity to hawk foraging areas. Trees planted will be replaced in groups of three. Planting stock will be a minimum of five-gallon container stock for oaks and walnuts.

Tricolored Blackbird

- As part of baseline species survey for each reserve and as part of the annual survey of reserves, any colonization by tricolored blackbirds shall be recorded by location and if possible, with a population estimate and activity description.
- Where tricolored blackbirds have been observed in colonies (active nesting and foraging), the nesting area and a reasonable foraging area adjacent to the nesting area within the reserve shall be identified and incorporated into the site specific plan, or if necessary accommodated through adaptive management of an existing developed reserve.
- In order to enhance wetland to upland edges of reserves to attract tricolored blackbirds, plantings of wild rose, tule and cattails shall be incorporated in habitat reserve units where biologically appropriate.
- During the nesting season, disturbance of foraging areas adjacent to active nest sites or previously active nest sites on reserve lands shall be avoided to the maximum extent possible. If nests are occupied, a reasonable buffer of foraging lands adjacent to the nest shall be marked and protected on reserve lands.
- Disturbance to tricolored blackbird nesting colonies will be strictly avoided within the nesting season (April to July or while birds are present) during Conservancy development and management activities undertaken on Conservancy property in wetland and upland habitat reserve areas, unless otherwise approved by the USFWS and CDFG.
- In accordance with the Migratory Bird Treaty Act, disturbance to active (occupied) nesting colonies will be avoided during the nesting season. A boundary shall be marked by brightly colored construction fencing that establishes a boundary 500 feet from the active nest site on reserve lands. No disturbance associated with TNBC management or development activities shall occur within the designated 500 foot foraging buffer of the reserve during the nesting season of April 1 through July 1, unless a qualified biologist, with concurrence of USFWS, determines young have fledged and nest sites are no longer active.
- During the nesting season, disturbance of foraging areas adjacent to active nest sites or previously active nest sites on reserve lands shall be avoided to the maximum extent possible. If nests are occupied, a reasonable buffer of foraging lands adjacent to the nest shall be marked and protected on reserve lands.
- Plantings of wild rose, tules, and cattails shall be incorporated in habitat reserve units where biologically appropriate to enhance tricolored blackbird nesting habitat.

Loggerhead Shrike

- The Conservancy shall encourage and maintain loggerhead shrike perching and nesting sites on all habitat reserves to the maximum extent practicable.
- The Conservancy shall avoid disturbance to loggerhead shrike nest sites in the nesting season during reserve management and enhancement activities to the maximum extent practicable, unless otherwise approved by the Conservancy and the HCP TAC.
- If the loggerhead shrike nests on a TNBC reserve, TNBC shall establish, identify, and mark (through construction fencing or other appropriate means) a buffer extending 100 feet from

the active nest on reserve lands. No disturbance associated with TNBC management and development activities shall occur within the 100 foot fenced area during the nesting season of March 1 through July 31, unless a qualified biologist, with concurrence of USFWS, determines young have fledged or that the nest is no longer occupied.

Burrowing Owl

- The Conservancy will avoid disturbance to active burrowing owl nesting burrows during reserve management activities to the maximum extent practicable. Disturbance to burrowing owl nesting colonies will be strictly avoided within the nesting season (February 1 through August 31 or while birds are present) unless otherwise approved by the Conservancy and the HCP TAC.
- The Conservancy shall utilize applicable USFWS or CDFG approved burrowing owl recovery or management plans, and the adaptive management provisions described in Section VI.F of the HCP, to implement any additional conservation measures deemed appropriate should use of the Natomas Basin by this species appreciably increase at any time in the future.
- In upland reserve areas, the TNBC may be asked to create new burrowing owl habitat by creating new burrows or restoring old burrows. New habitat shall include adequate foraging area around the burrow, and burrow design shall be done in consultation with qualified biologists. Additional habitat design and mitigation measures are described in the CDFG's October 17, 1995, Staff Report on Burrowing Owl Mitigation.

Bank Swallow

- The Conservancy will avoid disturbance to active bank swallow nesting burrows during reserve management activities to the maximum extent practicable.
- The Conservancy shall utilize applicable USFWS or CDFG approved bank swallow recovery or management plans, and the adaptive management provisions described in Section VI.F of the HCP, to implement any additional conservation measures deemed appropriate should use of the Natomas Basin by this species appreciably increase at any time in the future.
- Disturbance to bank swallow nesting colonies will be strictly avoided within the nesting season (May 1 through August 31 or until a qualified biologist, with concurrence of USFWS, has determined that young have fledged or that the nest is no longer occupied) during TNBC reserve development and management activities unless otherwise approved by TNBC and the TAC.
- If surveys identify an active bank swallow nesting colony that will be impacted by Conservancy activities, The TNBC shall identify and mark (through construction fencing or other methods) a boundary 250 feet from the active nesting colony on reserve lands. No disturbance associated with Conservancy activities shall occur within the 250 foot marked area of the reserve during the nesting season of May 1 through August 31. Additionally, disturbance within ½ mile upstream or downstream of the colony on reserve lands will be avoided if the colony is located upon a natural waterway.

Aleutian Canada Goose

- The Conservancy shall utilize applicable USFWS-approved Aleutian Canada goose recovery or management plans, and the adaptive management provisions described in the HCP (see Section VI.F of the HCP), to implement any additional conservation measures deemed appropriate should use of the Natomas Basin by this species appreciably increase at any time in the future.

White-faced Ibis

- The Conservancy shall utilize applicable USFWS-approved white-faced ibis recovery or management plans, and the adaptive management provisions described in the HCP (see Section VI.F of the HCP), to implement any additional conservation measures deemed appropriate should use of the Natomas Basin by this species appreciably increase at any time in the future.

- Disturbance to white-faced ibis nesting colonies will be strictly avoided within the nesting season (May 15 to August 31 or while birds are present, or until a qualified biologist, with concurrence of USFWS, has determined that young have fledged or that the nest is no longer occupied) during the Conservancy reserve development and management activities unless otherwise approved by the Conservancy and the HCP TAC. During the nesting season, a foraging buffer shall be identified around any active nest site to ensure minimal disturbance to the nest and nearby foraging areas on reserve lands. The buffer area shall be established in consultation with USFWS and CDFG.

Northwestern Pond Turtle

- The Conservancy shall consult with northwestern pond turtle researchers and experts periodically during implementation of the HCP to determine what, if any, conservation opportunities for this species might exist within the Conservancy's reserve system. The Conservancy shall implement such conservation measures through the HCP's adaptive management provisions as appropriate. Such opportunities might include, but are not limited to, provision of suitable upland habitat for nesting (e.g., unshaded slopes), plentiful basking sites (e.g., floating snags), and shallow water with dense emergent and submergent vegetation for juveniles.

Valley Elderberry Longhorn Beetle (VELB)

- During reserve development activities, impacts to VELB habitat will be avoided whenever possible. Projects will be designed to avoid stands of elderberry bushes and to avoid isolation of the plants from other nearby populations to the maximum extent practicable. Preconstruction surveys at the construction impact site will be conducted to assess the appropriate amount of mitigation.

- If elderberry plants cannot be avoided, they should be transplanted during the dormant season (November 1 to February 15) to an area protected in perpetuity and approved by the USFWS.

- Replacement seedling plants will be provided at a ratio of 2 to 1 through 5 to 1 depending on the extent of beetle utilization of the plants moved or lost. An 1,800-square-foot area will be provided for each transplanted elderberry shrub or every five elderberry seedling plants.

California Tiger Salamander

- The Conservancy shall consult with the HCP TAC and California tiger salamander researchers and experts periodically during implementation of the HCP to determine what, if any, additional conservation opportunities for this species might exist within the proposed habitat reserve system. The Conservancy shall implement such conservation measures through the HCP's adaptive management provisions as appropriate. Such opportunities might include, but are not limited to, establishment or creation of wetland and upland habitats suitable for tiger salamanders within the reserve system (e.g., stock ponds or "artificial" vernal pools with nearby natural materials for cover such as logs or large rocks) and, if appropriate, possible relocation and reintroduction of tiger salamanders into the Natomas Basin.

Western Spadefoot Toad

- The Conservancy shall consult with the HCP TAC and western spadefoot toad experts periodically during implementation of the NBHCP to determine what, if any, additional conservation opportunities for this species might exist within the Plan's proposed reserve system. The Conservancy shall implement such conservation measures through the HCP's adaptive management provisions as appropriate. Within reserve sites, the Conservancy shall consider creating habitat that are conducive to the western spadefoot toads such as areas of slow-moving waters (e.g., pools and plunge pools of small creeks), short grasses with sandy or gravelly soils, and other grassy areas.

Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, and Midvalley Fairy Shrimp

- The Conservancy shall consult with the HCP TAC and fairy shrimp and tadpole shrimp experts periodically during implementation of the HCP to determine what, if any, additional conservation opportunities for vernal pool fairy shrimp, vernal pool tadpole shrimp, and midvalley fairy shrimp might exist within the habitat reserve system. The Conservancy shall implement such conservation measures through the HCP's adaptive management provisions as appropriate.

Delta Tule Pea

- The Conservancy shall evaluate the potential for furthering the conservation of Delta tule pea within the HCP's reserve system through appropriate means, including but not limited to, introduction of the plant into suitable locations in the Natomas Basin. The Conservancy shall implement such conservation measures through the HCP's adaptive management provisions as appropriate.

- The Conservancy shall monitor any known populations of covered plant species within the Natomas Basin.

Sanford's Arrowhead

- The Conservancy shall evaluate the potential for and, as appropriate, implement measures to further the conservation of Sanford's arrowhead within the habitat reserve system through appropriate means, including but not limited to, introduction of the plant into suitable locations in the Natomas Basin.

- The Conservancy shall monitor any known populations of covered plant species within the Natomas Basin.

Other Covered Plant Species

- The Conservancy shall evaluate the potential for and, as appropriate, implement measures to further the conservation of covered plant species within vernal pool areas in the Natomas Basin or its habitat reserve system through appropriate means including, but not limited to, the introduction of Bogg's Lake hedge-hyssop, Sacramento Orcutt grass, slender Orcutt grass, Colusa grass, and legenere into the vernal pool areas or other suitable locations in the Natomas Basin.

2.4.6.3 Water Agencies' Conservation Measures

General Conservation Strategies

RD 1000's and Natomas Mutual's primary management efforts focus on keeping the canal systems functioning in a manner that ensures timely movement of irrigation water for agricultural purposes and ensures drainage of agricultural water and storm flows from lands within the Natomas Basin. RD 1000 and Natomas Mutual carry out these activities to address public health and safety concerns and minimize damage to property from flooding.

Pursuant to the HCP, RD 1000 and Natomas Mutual would implement best management practices. These measures would apply to the internal system of canals and ditches in the Natomas Basin, and would not apply to external flood control levees. These best management practices are summarized below, and additional detail is provided in the HCP (Section V.C).

Canal and Ditch Maintenance

The following canal and ditch maintenance practices would be implemented.

- RD 1000 and Natomas Mutual shall limit canal and ditch maintenance activities (activities involving excavation, desilting and/or resloping of channel(s) during any calendar year to not more than ten percent (10 percent) of the total miles of canals and ditches within each agency's respective service area. Where giant garter snakes are known to exist, the timing of these activities shall be restricted to after May 1 and before October 1 in any calendar year. Consistent with this limitation, re-sloping of canals and ditches by RD 1000, Natomas Mutual, and agents under the direct control and acting on behalf of the agencies, within the agencies' respective service areas, shall be restricted to one side of the canal or ditch during any calendar year, unless otherwise necessary to ensure adequate water conveyance.

- From May 1 to September 30 of any calendar year, before RD 1000, Natomas Mutual and agents acting on behalf of the agencies, fill or cause to be filled any ditch or canal within the agencies' respective service areas, the agencies and agents under the direct control and acting on behalf of the agencies, shall dewater or cause to be dewatered any existing canal or ditch prior to filling such canal or ditch with soil or other fill material. After dewatering any such canal or ditch, RD 1000, Natomas Mutual, and agents under the direct control and acting on behalf of the agencies, and water users within the agencies' respective service areas, shall wait a period of fifteen (15) days prior to filling such a dewatered canal or ditch.

Mowing

- For any mowing activity by RD 1000, Natomas Mutual, and agents under the direct control and acting on behalf of the agencies, within the agencies' respective service areas

to control terrestrial vegetative cover on top of, and inside, canal banks to the water line, the remaining vegetation shall not be less than 6 inches in height measured from the ground.

Burning

- Burning by RD 1000, Natomas Mutual, and agents acting on behalf of the agencies, within the agencies' respective service areas to control vegetation on ditches and canals shall be conducted only between October 1 and April 30. Any such burning activities shall be subject to any and all laws regarding burning activities.

Detailed Management Plans

- Recognizing that management and maintenance activities to be conducted by RD 1000 and Natomas Mutual may be modified over time, the agencies shall submit detailed Channel Management Plans for review and approval by the HCP TAC. Such management plans shall address the control of vegetation in and around canals, ditches, and drains by mowing and other measures to provide necessary operation and maintenance of canals. RD 1000's and Natomas Mutual's Management Plans shall be reviewed and approved by the TAC on a three-year basis.

Education Program

- RD 1000 and Natomas Mutual, with the assistance and cooperation of CDFG and the USFWS, shall develop and implement a giant garter snake education and awareness program.

Traffic

- RD 1000, Natomas Mutual, and agents under the direct control and acting on behalf of the agencies shall minimize unauthorized traffic on road and ditch canal bank roads through gate closures. RD 1000 and Natomas Mutual shall encourage water users within their respective service areas to minimize unauthorized use of canal and ditch bank roads.

Emergency Activities

- Emergency repair activities would generally be exempt from compliance with HCP requirements.

2.4.7 Monitoring and Adaptive Management

The HCP specifies two types of monitoring to verify progress toward meeting the HCP goals and objectives: (1) compliance monitoring, and (2) biological effectiveness monitoring. The permittees are required to conduct compliance monitoring to verify that they are carrying out the terms of the HCP, ITPs, and IA(s). Compliance monitoring would include the status of the implementation of the HCP terms and conditions (e.g., financial responsibilities and obligations, management responsibilities) and other aspects of the HCP, ITPs, and the IA(s). Biological effectiveness monitoring would evaluate the effects of the Proposed Action and determine whether the effectiveness of the operating conservation program of the HCP is consistent with the assumptions and predictions made when the HCP was developed and approved. Basinwide surveys for giant garter snakes, Swainson's hawks, and other species are examples of effectiveness monitoring. The HCP provides additional information on the planned monitoring programs in Section VI.E.

Adaptive management is a process that would allow the HCP's conservation program to be adjusted during permit term to ensure that the most up-to-date information is being used, and that the biological goals and objectives are being achieved. The adaptive management strategy, described in Section VI.F of the HCP, defines the feedback process and incorporates feedback loops that link implementation and monitoring to a decision-making process. Future HCP modifications, through the adaptive management process, could be needed as a result of the following significant uncertainties.

- New information resulting from monitoring of habitat reserve or other lands in the Natomas Basin and ongoing research on the giant garter snake, Swainson's hawk, or other covered species
- Recovery strategies under the future USFWS Giant Garter Snake Recovery Plan, CDFG Swainson's Hawk Recovery Plan, or newly listed covered species recovery plans, that could differ from the measures currently described in the HCP
- Minimization and mitigation measures described in the HCP that might need to be revised based on new information or monitoring data (e.g., marsh configuration and design; reintroduction of certain plants into reserve areas, etc.)
- The 2,500-acre and 400-acre minimum habitat block size requirements for wetland reserves might need to be revised
- Significant land use changes outside of the reserve system
- Uncertainties associated with HCP implementation.

The process by which adaptive management implements changes to the HCP's management actions, monitoring, and research needs could be implemented in any of the following ways. For the purposes of the HCP, three approaches will be used:

- Regularly scheduled periodic evaluations of the HCP monitoring data, other new scientific information or future recovery plan recommendations by the Conservancy and/or the HCP TAC and a determination linking the information to the HCP's success in implementation and achieving the biological goals and objectives
- Identifying significant measurable threshold limits for each of the adaptive management objectives that will trigger proposals and solutions requiring a management change
- Conducting a review at the independent midpoint reviews for land use agencies (see Section VI.J of the HCP) and the overall program review of 9,000 acres of development (see Section VI.I of the HCP). These approaches will be used to evaluate the effectiveness of the established habitats on reserve lands and to implement adjustments to the operating conservation program, as necessary, in order to achieve the biological goals and objectives of the HCP, including to address the mitigation requirements for covered species.

It is anticipated that the Conservancy will serve as the central data repository of all scientific data for the HCP throughout the permit term. The data will be used to assist in estimating incidental take levels, to assist in identifying potential lands for reserves; and will be used by

the Conservancy in determining when and if specific incidental take avoidance measures and/or Preconstruction surveys are required for individual projects.

2.4.8 Funding

The City and Sutter County will require that habitat reserve acquisition, enhancement, management, and monitoring activities under the HCP be funded by a one-time, up-front mitigation fee to be levied upon a development site within their respective permit areas (see Section VI.B of the HCP). The current mitigation fee is $5,993 per gross acre of development. Table 2-3 shows the breakdown of this amount.

This current mitigation fee would be adjusted, as necessary, by the land use agency permittees to account for inflation or deflation using the Consumer Price Index or another suitable index. It is also required to be directly related to actual operation and land costs in the basin or must account for HCP revisions resulting from recovery plans and the HCP's adaptive management provisions.

TABLE 2-3
Composition of Development Fee

Land Acquisition	$3,000
Restoration/Enhancement/Monitoring	368
Administration O & M	1,555
O & M Endowment Fund	800
Supplemental Endowment Fund	150
Mitigation Fee Subtotal	$5,873
Fee Collection Administration (2 percent)	120
Total Estimated Fee/Gross Developed Acre (2000$)	$5,993

Source: Natomas Basin Habitat Conservation Plan, July 2002.

In addition to the current mitigation fee, a Land Acquisition Premium fee was approved as a result of the Settlement Agreement to allow limited development to proceed during completion of the revised HCP. Because the Settlement Agreement targeted specific lands for acquisition, thereby increasing the costs of land acquisition, an additional Land Acquisition Premium fee of $4,028 per acre is being assessed for land developed under the Settlement Agreement, bringing the total current fee to $10,021 per gross acre of development for these areas.

The Proposed Action requires that the City and Sutter County each adopt ordinances that require developers to pay a "catch-up" mitigation fee in the event that a developer pays the mitigation fee prior to issuance of a permit (i.e., grading permit, notice to proceed, or building permit), and the fee is increased prior to disturbance of the land. The City adopted such an ordinance on April 3, 2001.

2.4.9 Unforeseen Circumstances/ "No Surprises"

As discussed in Section 1.5.1.4 of this EIR/EIS, the USFWS has implemented a final rule for its "No Surprises" policy (63 *FR* 8859). This policy states that additional conservation measures will not be required without the consent of the permittee. If unforeseen circumstances that could adversely affect any of the covered species were to occur within the permit term, then the permittee would not be required by the USFWS to commit to additional compensation or restrictions on the natural resources beyond the level provided by the HCP.

Another category of circumstances under the federal "No Surprises" rule is "changed circumstances." Categories of changed circumstances described in the HCP are: (1) listing of new species; (2) availability of new scientific information; (3) approval of new recovery plans; (4) problems in implementing the HCP; (5) fire, flood, or drought; (6) invasion of non-native species (both plant and animal); (7) changes in water availability; and (8) toxic spills and illegal dumping of toxic materials, and (9) non-participation by a land use agency. The HCP (see Section VI.K.3 of the HCP) describes actions to be taken for these categories of changed circumstances.

2.4.10 Overall Program Review and Midpoint Review

The HCP contains provisions for both overall program review at 9,000 acres of development (see Section VI.I) and independent midpoint review for the City and Sutter County (see Section VI.J). The purpose of the overall program review is to evaluate the HCP's status relative to several factors, its effectiveness, and its equitableness with respect to the relative responsibilities borne by each of the permittees. Specific factors to be addressed in the overall program review include the following.

- Status and population trends of the giant garter snake, Swainson's hawk, and all other covered species within the HCP plan area, especially with respect to those biological factors that are directly affected by covered activities
- Status and effectiveness of the habitat reserve system, including its buffer and setback requirements
- The HCP's success in meeting the 2,500- and 400-acre-minimum habitat block size requirements
- Status and effectiveness of the HCP's funding mechanisms
- Relative status and distribution of developed lands and reserved lands within each of the land use agency jurisdictions
- Success of the 25 percent managed marsh, 50 percent rice land use for supporting giant garter snakes
- Compliance of the water agencies with approved canal and ditch maintenance practices

If the findings of the overall program review monitoring results, new scientific data, or an adopted Giant Garter Snake Recovery Plan (see Section VI.H of the HCP) indicate, the managed marsh component of wetland reserves could be increased to 75 percent within sites acquired subsequent to the review of the overall species monitoring results, determination or

adaptation necessary to respond to the Giant Garter Snake Recovery Plan, or Recovery Plan adoption.

In addition to the overall program review requirement, both the City and Sutter County will conduct independent midpoint reviews as development occurs within each permit area. These independent midpoint reviews would address the factors noted above for the overall program review, and could also result in a determination to increase the managed marsh component of the reserves from 25 percent to 75 percent.

2.5 Approach to Developing Alternatives

This section presents the approach to developing alternatives, including a summary of alternatives considered but not carried forward for detailed analysis in this EIR/EIS. CEQA and NEPA both require that alternatives to a project be considered during environmental review. The lead agencies developed a list of alternatives based on the following criteria:

- **Purpose and need/objectives.** A range of alternatives was developed that would allow the lead agencies to meet the purpose and need/objectives, as described in Section 1.4, and the HCP's biological goals and objectives, as described in Section 2.4.4.
- **Ability to mitigate/substantially reduce impacts.** The Proposed Action is based on the conservation needs of species, including giant garter snakes and Swainson's hawks. Alternatives were considered that would: (1) increase the number, size, and habitat value of the habitat reserve system (e.g., by increasing mitigation requirements); and (2) substantially reduce the potential for incidental take during the covered activities (e.g., by reducing development levels).
- **Feasibility.** Alternatives were considered that might be feasible to implement. For the EIR/EIS, "feasibility" was considered broadly in order to promote a wide range of alternatives. Factors affecting feasibility include the ability to acquire lands for habitat reserves (e.g., purchase from willing sellers, condemnation), potential increases in housing costs, and the ability to carry out the planning goals of the North Natomas Community Plan and other plans. The final determination of feasibility would be made during the adoption of a preferred alternative.
- **Reasonable Range.** CEQA and NEPA both require that a reasonable range of alternatives to the proposed project or the location of the project be considered. For this EIR/EIS, the determination of a "reasonable range" was based on whether the alternative: (1) accomplishes the purpose and need and achieves most of the basic project purposes and objectives (see Section 1.4) and biological goals and objectives (see Section 2.4.4); (2) has the ability to reduce impacts; (3) is feasible to implement; and (4) is reasonable. The lead agencies also considered: (1) the type of action (i.e., the issuance of take permits and the implementation of the HCP); (2) the issues raised during public scoping and in the Court Opinion (see Chapter 1); and (3) the ability of the alternatives to promote informed decisionmaking by the lead and responsible agencies.

On the basis of the above screening criteria, 12 alternatives were initially developed for the EIR/EIS. Seven of the 12 alternatives were not carried forward for further review because they did not meet the purpose and need (see Sections 1.4 and 2.4.4), were outside the scope of the Proposed Action evaluated in this EIR/EIS, or were incorporated into another alternative evaluated in detail in this document. The seven alternatives not carried forward in the EIR/EIS are:

- Change in Permit Duration. The proposed 50-year term would be changed to 25 or 75 years under this alternative.
- No Out-of-Basin Mitigation. Acquisition of habitat reserves would only be allowed to occur within the Natomas Basin.
- Sacramento County Participation. Under this alternative, Sacramento County would participate in the Natomas Basin process as an applicant.
- Development Cap. No new development within the Natomas Basin over 17,500 acres would be allowed.
- Increased Mitigation Fee. Under this alternative, the mitigation fee charged to new development would be increased.
- Acquire Active Habitat Only. The Conservancy would only acquire lands as habitat reserves that are currently active habitat for the covered species.
- Fixed Reserves. Specific parcels would be identified for acquisition into the system of habitat reserves.

2.6 EIR/EIS Alternatives

The alternatives carried forward for analyses in this EIR/EIS are briefly summarized below and described in detail in Sections 2.6.1 through 2.6.5. The Proposed Action presented in Section 2.4 is the preferred alternative. Alternatives carried forward for detailed analysis in accordance with NEPA's requirements for the treatment of alternatives at an equal level of detail are presented below. Each of the alternatives is assessed in Chapter 4: Environmental Consequences, in the context of joint participation by permittees as well as on the basis of individual implementation.

- Alternative 1: Increased Mitigation. The required mitigation ratio of habitat land to urban development would be increased from 0.5:1 to 1:1. This alternative is being evaluated at a detailed level of analysis in this EIR/EIS because it would lessen the environmental impacts of the Proposed Action on special status species and would achieve the project objectives for biological conservation by doubling the lands acquired for habitat reserves and, therefore, increasing the level of mitigation relative to the Proposed Action.
- Alternative 2: Habitat-based Mitigation. Mitigation would be based on the habitat value of the land to be developed, and would include up to a 3:1 ratio for the highest-value habitat for giant garter snakes. This alternative is being evaluated at a detailed level of analysis in this EIR/EIS because it would lessen the environmental impacts of the Proposed Action on special status species and would achieve the project objectives for biological conservation by doubling the lands acquired for habitat reserves and, therefore, increasing the level of mitigation relative to the Proposed Action.

- Alternative 3: Reserve Zones. Specific reserve areas would be the focus of acquisition activities. These zones would focus acquisition efforts on areas that have the greatest conservation and restoration potential for giant garter snakes and Swainson's hawks and other covered species. This alternative is being evaluated at a detailed level of analysis in this EIR/EIS because of its ability to minimize and mitigate impacts to covered species to the maximum extent practicable for purposes of Section 10(a)(1)(B) permits and to 'minimize and mitigate fully the impacts to covered species under Section 2081 of the California Fish and Game Code.
- Alternative 4: Reduced Potential for Incidental Take. Development in the City and Sutter County would be reduced in order to reduce the extent of development-related habitat impacts and incidental take. The purpose of Alternative 4 is to reduce potential impacts to covered species and their habitat (and thereby decrease the potential for incidental take) by reducing the footprint of urban development.
- Alternative 5: No Action Alternative. No take permits would be issued to the City, Sutter County, the Conservancy, RD 1000, or Natomas Mutual, and a comprehensive HCP would not be implemented. This alternative is considered because of the NEPA and CEQA requirements for a No Action/No Project alternative.

2.6.1 Alternative 1: Increased Mitigation

Under Alternative 1, the approach to mitigation would be similar to the Proposed Action in that it would include the payment of in-lieu mitigation fees and acquisition of reserve lands by the Conservancy. This alternative differs from the Proposed Action because the mitigation ratio of habitat land to urban development would be increased from the Proposed Action's ratio of 1/2 acre of mitigation lands for 1 acre of development (i.e., 0.5:1) to 1 acre of habitat reserves for every acre of planned land use development (i.e., 1:1). The development limit for the City, Sutter County, and Metro Air Park would remain at 17,500 acres as described in the HCP, but this amount of development would result in the need to acquire 17,500 acres of habitat reserves. Doubling the amount of land to be acquired would require increasing the mitigation fee. With the exception of potential increases in reserve acquisition, all other components of the proposed conservation strategy (e.g., reserve management, plan implementation) would not change relative to the Proposed Action. The requirement for one contiguous reserve block of 2,500 acres would not change, and other reserve lands would be acquired to ensure that they form 400-acre contiguous reserve blocks. Similar to the Proposed Action, the mitigation requirement would not be based on the habitat value of the land developed, and the land would be acquired within the Natomas Basin from willing sellers or outside of the basin subject to the 20 percent limitation prescribed in the HCP.

2.6.2 Alternative 2: Habitat-based Mitigation

Under Alternative 2, the mitigation ratio (i.e., the acres of reserve lands that would be acquired compared with the acres of land to be developed) would be based on the habitat value of the lands to be developed. This differs from the Proposed Action, which is based on a fixed mitigation ratio of 0.5:1 (i.e., ½ acre of reserve land would be acquired for each acre of land developed). (Under the Proposed Action, 17,500 acres of development would result in 8,750 acres of habitat reserve lands acquired.)

Alternative 2 was developed using the land use database discussed in Chapters 3 and 4 of this EIR/EIS. Standard categories of existing land uses and a GIS database were developed to provide a framework for predicting future habitat conditions in the Natomas Basin (see Section 3.4 and 4.4). Standard mitigation ratios for giant garter snakes and Swainson's hawks from the USFWS and the CDFG were then applied to the habitat conditions on the lands to be developed. These mitigation rations under this alternative are shown in Table 2-4. As a result of applying the ratios in Table 2-4, approximately 17,763 acres would be acquired as habitat reserves (compared with 8,750 that would be acquired under the Proposed Action).

TABLE 2-4
Mitigation Requirements Under Alternative 2

Giant Garter Snake		Swainson's Hawk	
Lands Requiring Mitigation	**Mitigation Ratio[a]**	**Lands Requiring Mitigation**	**Mitigation Ratio[b]**
Drainage canals, water delivery canals	3:1	Lands within 1 mile of an active nest tree	1:1
Rice fields	1:1	Lands within 1 to 5 miles of an active nest tree	0.75:1
		Areas within 5 to 10 miles of an active nest tree	0.5:1

[a] Source: Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relative Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California (*USFWS*, 1997b).

[b] Source: Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG, 1994a).

This preliminary estimate is based on the giant garter snake habitat and active Swainson's hawk nests on 17,500 acres of urban development (including lands that have been developed subsequent to the approval of the 1997 Natomas Basin HCP), both within the City and Sutter County as well as the Metro Air Park project. Within this development area, there are approximately 8,475 acres of rice fields, 404 acres of drainage canals and water conveyance facilities that would be developed, and 4,746 acres within one mile of a Swainson's hawk nest excluding rice lands subject to giant garter snake mitigation requirements. The remainder of the development area is within 5 miles of a Swainson's hawk nest, and totals 4,438 acres not including rice lands subject to giant garter snake mitigation requirements.

Similar to the Proposed Action, this alternative would include the payment of mitigation fees and the acquisition of reserve lands by the Conservancy. In addition, Alternative 2 is comparable to the Proposed Action in that lands would be acquired within the Natomas Basin from willing sellers, or outside of the basin, subject to the 20 percent limit (see Section IV.C.2.b of the HCP). Site-specific management plans also would be developed as the reserve lands are acquired, and these reserve lands would be subject to the same requirements described in the HCP.

2.6.3 Alternative 3: Reserve Zones

Alternative 3 would establish specific reserve zones that would be prioritized during the process of acquiring lands for habitat reserves. These reserve zones would be outside the North and South Natomas Community Plan areas and outside of Sutter County's Industrial-Commercial Reserve. In keeping with the general mitigation approach of the Proposed Action, land acquisition would occur based on a 0.5:1 mitigation ratio (i.e., 0.5 acres

of habitat reserves for each 1 acre of land developed). Other HCP measures (e.g., minimum block sizes, setbacks) would apply as well. Alternative 3 differs from the Proposed Action, however, in that reserve acquisition would focus on five overlapping zones that are distributed throughout the Natomas Basin based on the habitat needs of giant garter snakes and Swainson's hawks (Figure 2-5), rather than on the HCP's broad requirement to mitigate generally within the basin.

Two zones are identified for upland reserve acquisition to benefit Swainson's hawks. Under the Reserve Zone Alternative, 1/2 of the required upland reserve acquisitions, or 1,094 acres, would occur in the Swainson's hawk zone (one mile inland from the Sacramento River), and one-quarter of the upland reserve acquisitions, or 547 acres, would occur in the northeastern grassland portion of the Natomas Basin. Remaining upland habitats could be acquired elsewhere in the basin. This reserve zone approach emphasizes the Swainson's hawk zone while allowing for the restoration of nesting and foraging habitat in the northeastern area.

The primary giant garter snake zones are in the interior of the basin, and generally correspond to lands in rice production. Three specific zones are identified for acquisition of rice lands and managed marsh reserves to benefit giant garter snakes: (1) 50 percent of the required rice/wetland reserves (3,281 acres) would be acquired in the northwest zone, generally north of Elverta Road and west of S.R. 99; (2) 25 percent of the rice/wetland reserves (1,641 acres) would be acquired in "Snake Alley" east of S.R. 99 between Elkhorn Boulevard and the county line; and (3) 12.5 percent of the rice/wetland reserves (820 acres) would be acquired near Fisherman's Lake. Remaining rice/wetland reserves (820 acres) could be acquired anywhere in the basin. These reserve zones focus the Conservancy's acquisition strategy on key remaining giant garter snake habitat areas in the Natomas Basin.

The HCP requires that the individual reserves be at least 400 acres in size, and that one reserve block be at least 2,500 acres in size. The five key zones described above would allow for the minimum reserve sizes to be met, as follows.

- Swainson's hawk zone: two 400-acre reserve blocks
- Eastern portion of the Natomas Basin: one 400-acre reserve block
- Fisherman's Lake area: two 400-acre reserve blocks
- "Snake Alley:" four 400-acre reserve blocks
- Northwestern portion of the Natomas Basin: one 2,500-acre reserve block and one 400-acre reserve block

The remaining mitigation acreage could be met within these five zones or elsewhere in the Natomas Basin.

2.6.4 Alternative 4: Reduced Potential for Incidental Take

Alternative 4 would reduce potential impacts to covered species and habitat by reducing the footprint of urban development. This alternative is based on the midpoint review provision in the HCP (see Section VI.I of the HCP) that is designed to evaluate the performance and effectiveness of the HCP during its implementation. The program review would be completed before development exceeds 12,000 acres.

Urban development would be reduced from 17,500 acres (under the Proposed Action) to 12,000 acres under this Alternative 4. Developable acreage would be reduced proportionally overall for the City and Sutter County (i.e., specific development parcels are not identified).

Using the 0.5:1 mitigation ratio, development of 12,000 acres under Alternative 4 would result in the acquisition of 6,000 acres of habitat reserves. Other than the decrease in developable acreage (and the commensurate decrease in reserve lands acquired), all other aspects of the Proposed Action would remain the same for Alternative 4. To ensure adequate funding under a reduced development scenario, the mitigation fees would need to be recalculated.

2.6.5 Alternative 5: No Action Alternative

Under the No Action Alternative, no incidental take authorization would be issued to the City, Sutter County, the Conservancy, RD 1000, or Natomas Mutual by the USFWS and CDFG, and no comprehensive HCP would be implemented. Planned land development would continue as outlined in Section 2.3 (e.g., 8,050 acres within the City, 1,983 acres associated with Metro Air Park, and 9,588 acres within Sutter County). Implementation of an overall conservation strategy would not occur in the Natomas Basin. In the absence of a comprehensive habitat conservation program, the needs of listed species would be addressed on a project-by-project basis. In the absence of this comprehensive approach, the No Action Alternative would result in the following habitat conservation planning approaches:

- Where development would affect lands that have sensitive species, individual landowners could prepare project-specific HCPs with the USFWS (through Section 10(a)(1)(b) of the ESA) and the CDFG (through Section 2081 of the Fish and Game Code).
- If project-specific HCPs were not prepared, the USFWS would also have the opportunity to prescribe project-specific mitigation as part of the ACOE's wetlands permitting process. Such mitigation would likely include a combination of onsite preservation, purchase of credits in a mitigation bank, and construction timing restrictions. This process would focus on federally listed threatened or endangered species (e.g., giant garter snake, valley elderberry longhorn beetle, vernal pool invertebrates), and would not include Swainson's hawks and other non-federally listed species.
- The CDFG's regulatory process could provide an opportunity for protection measures to be implemented for state-listed species such as the giant garter snake and Swainson's hawk. Site-specific protection measures required under a Streambed Alteration Agreement are likely to include restrictions on the timing of construction activities in giant garter snake habitat and around Swainson's hawk nest trees.
- Individual landowners would be required to implement the CEQA mitigation measures adopted by the City or Sutter County as part of: (1) the North or South Natomas Community Plans and their associated EIRs; (2) the proposed South Sutter County Specific Plan and the associated EIR; or (3) individual project-specific CEQA review. These measures are expected to be consistent with the project-specific mitigation requirements of the USFWS and CDFG.

It is not likely that non-listed species would receive protection. In addition, no comprehensive system of reserves would be established under the No Action Alternative

unless established independently by the Conservancy as mitigation banks. The Conservancy's operating mandate under the 1997 Natomas Basin HCP would be confined to managing lands already acquired.

2.7 Alternatives Eliminated from Further Consideration

Twelve alternatives to the Proposed Action were considered. A subsequent review resulted in the determination that seven do not meet one or more of the criteria established in Sections 1.4 and 2.5 and that five would be analyzed in detail (see Section 2.6). The seven alternatives considered but eliminated from analysis are: (1) change in permit duration; (2) prohibiting out-of-basin mitigation; (3) Sacramento County participation; (4) development cap; (5) increased mitigation fee; (6) acquire active habitat only; and (7) fixed reserves.

2.7.1 Change in Permit Duration

Changing the duration of the proposed take permits could entail either an increased (e.g., 75 years) or decreased period (e.g., 25 years) in which the covered activities related to development and water agencies' activities could occur and in which the HCP measures would be applicable within a given permittee's jurisdiction. This alternative was raised during the scoping process, but is not being carried forward for detailed analysis because a shorter permit term (e.g., 25 years) would not allow adequate time for the habitat reserve system to be fully developed and assessed for effectiveness. Specifically, a shorter permit term would not allow for appropriate application and interpretation of site-specific management actions using the HCP's adaptive management and monitoring provisions. Conversely, if the permit term were longer (e.g., 75 years), the data used to assess possible modifications to the management measures would be outdated or invalid and, therefore, inadequate to rely on for decisions made so far into the future. This alternative, therefore, would not meet the purpose and need to: (1) implement monitoring programs with qualitative and/or quantitative monitoring methods to evaluate management objectives and strategies for the reserve system, (2) increase the diversity and abundance of covered species on reserve lands, and (3) revise the reserve design and management based on the most current biological data.

2.7.2 Prohibiting Out-of-Basin Mitigation

This alternative was also raised during the scoping meetings. It would require that all lands acquired for mitigation be located in the Natomas Basin. This alternative was eliminated because it would be inconsistent with the land acquisition directive principles from the Conservancy's bylaws, which include purchasing lands from willing sellers (including those not limited to lands within the Natomas Basin). In addition, the HCP states that all efforts would be made to maximize the purchase of mitigation lands in the Natomas Basin. The option to acquire land outside the basin, however, would help the Conservancy maximize its ability to leverage its available resources into habitat benefits and not be constrained to purchase lands at costs that are inflated because of speculation. As described in Section 2.4.5.6, reserves would be established in Area B only if the reserve could support a population of giant garter snakes, Swainson's hawks, or other covered species.

2.7.3 Sacramento County Participation

During the public scoping period for this project (January 2001), several comments requested that Sacramento County participate in the habitat conservation planning effort. At this time, proposed development in unincorporated Sacramento County is limited to the Metro Air Park project (see Section 1.2.1). As described in Section 1.2.1, the Metro Air Park Property Owners' Association prepared a separate HCP for Metro Air Park and an ITP was issued on February 21, 2002.

Approximately 16,000 acres of land remain in unincorporated Sacramento County, excluding Sacramento International Airport. This area is outside of the County's Urban Services Boundary, which means that development is not planned in the foreseeable future. Sacramento County is currently considering a long-term proposal, however, to amend its Urban Services Boundary to include an additional 6,519 acres of land in the Natomas Basin because of property owner interest in developing this area. At this time, the planning effort does not include a specific land use plan; rather it is intended to provide policy direction on urbanization for regional infrastructure purposes.

The City of Sacramento also is considering the possibility of future development in this area. The City's General Plan Amendment and Comprehensive Annexation Program describe the potential for annexation and development in portions of the currently unincorporated Natomas Basin, and present the option of creating a one-mile permanent open-space buffer east of the Sacramento River and south of the Sutter County line.

In response to these ongoing efforts, the City of Sacramento and Sacramento County engaged in a long-range planning effort regarding the City's Sphere of Influence and would guide future annexation proposals involving up to 10,000 acres of land in the Natomas Basin directly north of Elkhorn Boulevard. This land is not covered as authorized development nor is it evaluated as planned development in the HCP or this EIR/EIS. Specific land uses which could be developed pursuant to the conceptual Sphere of Influence Study have not been proposed. Moreover, specific proposals to annex lands have not been identified. Any future specific proposals related to the annexation and development of these lands would be subject to further planning efforts, technical analyses, CEQA review, and public hearings and approvals by the City Council of the City of Sacramento, the County of Sacramento Board of Supervisors, and the Local Agency Formation Commission (LAFCO). In addition, any lands proposed for development beyond those included in the proposed HCP would require a new effects analysis and/or re-evaluation of the HCP, a new or amended conservation strategy, separate consultation with USFWS and CDFG and issuance of incidental take permits. These approvals would also be subject to the preparation of appropriate environmental analysis and mitigation measures to address project specific and cumulative impacts of additional development in the Natomas Basin. The HCP evaluated as part of the Proposed Action in this EIR/EIS focuses on the 17,500 acres of planned development analyzed in previous environmental documents discussed in Section 4.1.3. The proposed HCP and this environmental analysis is based on the impacts of the proposed authorized development of 15,517 acres of development in the City of Sacramento and Sutter County permit areas and 1,983 acres of Metro Air Park development for a total of 17,500 acres of development in the Natomas Basin. Mitigation measures have specifically been developed to reduce the impacts associated with 17,500 acres of development in the Basin. The potential for future annexation proposals by the City is discussed in more detail in Section 4.1.2, Approach to Cumulative Impact Assessment.

Although Sacramento County has decided not to participate in or file an ITP application in connection with the Proposed Action evaluated in this EIR/EIS, the HCP contains provisions that would allow other permittees (including Sacramento County or other entities) to participate in the HCP at some future unknown time (see Section I.B.5 of the HCP). Other than the development proposals described in Section 4.1.2.3 of this EIR/EIS, no specific proposals for development in the Sacramento County portion of the Natomas Basin have been proposed. If potential permittees were to seek coverage for incidental take, approving either the Natomas Basin HCP or some other HCP, additional environmental review would be required. Because Sacramento County has elected to not participate in the HCP at this time, the County cannot be compelled to participate in the HCP. Accordingly, this alternative is not being carried forward for detailed analysis.

2.7.4 Development Cap

The USFWS is responding to an application submitted by the City and Sutter County for coverage of up to 17,500 acres of urban development. This development acreage corresponds to planned land development in the Natomas Basin, including buildout of the City's North and South Natomas Community Plan areas, Metro Air Park, and a substantial portion of Sutter County's Industrial-Commercial Reserve (see Section 2.2 for a discussion of the permit areas for each of the permittees in the Proposed Action. Also see the discussion of cumulative impacts in Section 2.7.3 above and in Chapter 4 for a discussion of other future potential (but as yet speculative) urban development outside the parameters of the Proposed Action evaluated in this EIR/EIS.)

During the public scoping period for this EIR/EIS, several comments stated that no urban development beyond that which is discussed as a covered activity in this EIR/EIS (see Section 2.2) should be allowed. Although additional development (i.e., development not contemplated as part of the covered activities for this Proposed Action) could occur at some future unknown time, such development is speculative, and the applicants (permittees) cannot be compelled to curb land use planning that addresses development that could occur subsequent to the development currently proposed (see Section 2.3) and for which environmental review has occurred (see Chapters 3 and 4). In addition, any future proposed development would be subject to a series of environmental reviews and clearances not within the scope of the current Proposed Action. In addition, even if land use agencies instituted limits to future development within their authority, such action would neither increase mitigation requirements for the Proposed Action nor reduce the potential for incidental take (which is currently addressed in the context of the General Plans of the City, Sacramento County, and Sutter County, and not speculative future actions—see Chapters 3 and 4).

2.7.5 Increased Mitigation Fee

During the public scoping process, several comments were received on the adequacy of the proposed mitigation fee. The need to increase the mitigation fee can be described either in terms of ensuring the adequate implementation of the proposed mitigation program, or in terms of increasing the amount of required mitigation.

The need for increased mitigation is considered in the analysis of Alternative 1, which would prescribe a 1:1 mitigation ratio rather than the 0.5:1 ratio in the Proposed Action. Alternative 1 would require that the mitigation fee be raised to cover the costs of acquiring additional

habitat reserves. The need for an increased mitigation fee is, therefore, included for consideration in Alternative 1. Ensuring the adequacy of the mitigation fee for the selected alternative, however, is a decision that will be made by the USFWS and CDFG during their permit review process, based on their respective criteria. It is important to note that there is no cap on the proposed mitigation fee, and that adjustments to the fee can occur as described in Section VI.B of the HCP. The Proposed Action, therefore, already allows for increases in the HCP fee to fund the implementation of the HCP.

2.7.6 Acquire Active Habitat Only

During the public scoping period, several commentors suggested the need to focus habitat acquisition on areas actively used by the covered species, potentially including areas proposed for development. Most of the comments to this effect focused on Fisherman's Lake and the surrounding area. In accordance with the May 10, 2001, Settlement Agreement, at least 100 acres of land would be acquired on the west side of Fisherman's Lake, and the buffer on the east side of Fisherman's Lake could be expanded from 200 feet to 800 feet. Fisherman's Lake itself is part of RD 1000's primary drainage system and would be managed in accordance with the water agency conservation measures proposed in the HCP. These measures could be modified as a result of ongoing efforts pursuant to the Settlement Agreement to develop a comprehensive management program for Fisherman's Lake, including the needs of the giant garter snake. As of December 2001, a 140-acre property has been acquired west of Fisherman's Lake per the requirements of the Settlement Agreement.

The HCP's acquisition criteria emphasize lands considered for acquisition should have existing or potential wetland habitat values, among other criteria (Section IV.C.3.b). This suggests equal weighting between current habitat areas and areas that could be restored. The altered landscape of the Natomas Basin limits the ability to mitigate using existing habitat only, especially because of the lack of natural wetland areas, and mandates that restoration (e.g., conversion to managed marsh) be a key strategy of HCP implementation. Accordingly, an alternative that limits the reserve acquisition options to active habitat would be inconsistent with the purpose and need because it would not conform to the biological goals and objectives specified in the HCP.

2.7.7 Fixed Reserves

During the public scoping process, several commentors stated that specific reserve areas should be identified in the HCP, and that the land use agencies should exercise their eminent domain powers to acquire these areas. The May 10, 2001, Settlement Agreement provides a fixed reserve zone for the Fisherman's Lake area (see Section 2.4.6), and also provides for the City's possible use of eminent domain to acquire the total amount of lands required per the Settlement Agreement. Applying this approach for the remainder of HCP implementation, however, is considered infeasible because of the concern that speculation would artificially inflate land costs and, therefore, limit the Conservancy's ability to acquire lands within the Natomas Basin. In addition, inflating land costs and limiting lands available for purchase would be inconsistent with the Conservancy's objectives to: (1) promote opportunities for covered species to expand in the Natomas Basin; (2) implement a flexible conservation program; and (3) increase the opportunity for reproductive success of covered species. Accordingly, this alternative is not being carried forward for detailed analysis.

In preparing this EIR/EIS, an attempt was made to balance the need to avoid identifying fixed reserve boundaries with the desire to focus land acquisition on key targeted areas. This resulted in the development of Alternative 3, the Reserve Zone Alternative. This alternative, which is considered in detail in this EIR/EIS, identifies key areas for acquisition, based on biological suitability and the need to meet minimum reserve sizes, without specifically identifying parcels to be acquired.

2.8 Environmentally Preferable/Superior Alternative

Both CEQA and NEPA require the identification of an environmentally preferable (CEQ NEPA Guidelines, Section 1505.2(b)) or superior (CEQA Guidelines, Section 15126(e)(2)) alternative. The environmentally preferable and superior alternative is Alternative 2, Habitat-based Mitigation, because this alternative provides the greatest mitigation (i.e., 17,763 acres of habitat reserves).