

EXECUTIVE SUMMARY

FINAL ADMINISTRATIVE DRAFT SOLANO HCP

(August 4, 2009)

I. Background, Purpose and Scope

The Solano HCP establishes a framework for complying with state and federal endangered species regulations while accommodating future urban growth, development of infrastructure, and ongoing operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the Plan Participants within Solano County over the next 30 years.

These covered activities are associated with: 1) approximately 13,050 acres of planned urban development within the boundaries of Vacaville, Fairfield, Suisun City, Vallejo, Rio Vista and Dixon; 2) the operation and maintenance of the approximately 400 miles of flood control and irrigation channels, 1300 miles of pipelines, and numerous pump stations, diversion dams, holding reservoirs, water tanks, and other associated facilities owned and operated by Solano County Water Agency (SCWA), Solano Irrigation District (SID), Maine Prairie Water District (MPWD), Reclamation District 2068 (RD 2068), Dixon Resource Conservation District (RCD), Dixon Regional Watershed Joint Powers Authority (JPA), Vallejo Sanitation and Flood Control District (VSFCD), and Fairfield-Suisun Sewer District (FSSD); and 3) implementation of HCP conservation measures such as the establishment and management of reserves and preserves, habitat restoration and construction, scientific collection/monitoring, relocation of covered species and associated activities on an estimated 25,000 to 30,000 acres of reserves, preserves, open space lands and other cooperative habitat restoration sites.

Background

In March 1999, the U.S. Fish and Wildlife Service (USFWS), in accordance with Section 7 of the Federal Endangered Species Act (ESA) of 1973, issued a Biological Opinion regarding the Solano Project Water Service Contract Renewal between the Bureau of Reclamation and the Solano County Water Agency (SCWA). The 25-year contract provides for continued delivery of Solano Project water for agricultural, municipal, and industrial purposes throughout the SCWA contract service area. SCWA delivers Solano Project water in accordance with its eight Member Agency contracts, including Vacaville, Fairfield, Suisun City, Vallejo, SID, MPWD, University of California, Davis and the California Medical Facility/California State Prison, Vacaville.

The Bureau of Reclamation, SCWA, and the above-listed member agencies have agreed to implement conservation measures to ensure the protection of threatened and endangered species and their habitat within the SCWA contract service area. Full implementation of the Conservation Measures outlined in the Solano Project Water Service Contract Renewal Biological Opinion is key to the survival and recovery of listed species. As such, the SCWA and the member agencies have developed an HCP for the Solano Project contract service area. The Solano HCP is intended to support the issuance of a Section 10(a)1(B) "incidental take permit" under the ESA for activities

associated with future water use in the Solano Project contract service area. The Plan Participants also intend to secure incidental take authorization from the California Department of Fish and Game (CDFG) for state listed species (Fish and Game Code §2080.1 and/or §2081).

The Solano HCP addresses compliance with the Terms and Conditions of the Solano Project Biological Opinion for the following Plan Participants:

- SCWA
- Vacaville
- Fairfield
- Suisun City
- Vallejo
- SID
- MPWD

The following agencies have chosen to voluntarily participate in the HCP:

- Rio Vista
- Dixon
- Reclamation District No. 2068
- Dixon Resource Conservation District (RCD)
- Dixon Regional Watershed Joint Power's Authority (JPA)
- Vallejo Sanitation and Flood Control District (VSFCD)
- Fairfield-Suisun Sewer District (FSSD)

Purpose

The purpose of the HCP is to promote the conservation of biological diversity and the preservation of endangered species and their habitats consistent with the recognition of private property rights; provide for a healthy economic environment for the citizens, agriculture, and industries; and allow for the on-going maintenance and operation of public and private facilities in Solano County.

The guiding principles for the Solano HCP conservation program are to:

1. Reduce conflicts between listed species and economic development, agriculture, and other land use activities to promote conservation of biological diversity and, to the maximum extent practicable, contribute to the recovery of plant and animal species addressed in the HCP.
2. Streamline the local, state, and federal regulatory processes to provide a consistent and predictable treatment of actions requiring discretionary approvals from participating agencies

for obtaining incidental take permits and other required authorizations for modifications to natural communities and other habitats in a manner that is consistent with the conservation of Covered Species and existing regulations.

3. Lessen or avoid site specific and cumulative effects of development on Covered Species by replacing project-by-project mitigation with comprehensive, long-term strategies for conserving, protecting, and maintaining viable populations of Covered Species and natural habitats.
4. Promote the conservation and preservation of the Covered Species and the habitats upon which they depend for the benefit of current residents and future generations.
5. Promote retention and establishment of open space buffers and green belts consistent with the goals of local governments in order to: provide habitat linkages; separate designated urban areas; minimize the loss, fragmentation, and degradation of natural habitats; protect and enhance important habitats for Covered Species; and provide movement corridors and connectivity between the various habitat associations or eco-regions in the County.
6. Foster the continuation of land uses (e.g., agriculture and open space recreation) that are compatible with the protection of important habitats for Covered Species and, to the maximum extent practicable, maintain existing agricultural values on those lands that are affected by the HCP.
7. Establish reserves/protected habitat lands acquired only from willing sellers.
8. Comply with conservation regulations regarding the protection of air, water, and biological resources as well as other state- and federally- mandated laws and programs.
9. Recognize the importance of Travis Air Force Base to the economy of Solano County, promote compatible adjacent land uses and not preclude the potential for expansion of the facility, if necessary.
10. Implement incentive-based financing and reserve acquisition strategies that distribute implementation of conservation costs equitably among all beneficiaries, do not infringe upon private property rights or overly burden agriculture, and are affordable to the region.

II. Plan Area and Covered Activities

The Solano HCP will account for all Covered Activities undertaken by or under the permitting authority and control of the Plan Participants within the approximately 585,000¹-acre Plan Area, which encompasses approximately 577,000 acres of Solano County and approximately 8,000 acres of Yolo County (Figure 1-4). The Plan Area extends into Yolo County to encompass facilities maintained by RD 2068, Dixon RCD, and Dixon Regional Watershed JPA as well as for restoration activities along Putah Creek. Covered Activities in Yolo County are limited to activities undertaken by

¹ Numbers in this section are rounded to the nearest 1,000 acres.

or under the permitting authority and control of these three Plan Participants and do not include any future urban development in Yolo County. In addition, Covered Activities proposed in the area of Yolo County within the Plan Area do not conflict with the Yolo County NCCP/HCP planning efforts and fall outside of Yolo County's proposed urban expansion areas.

Covered Activity Zones

To adequately address the varying activities undertaken by or under the permitting authority and control of the Plan Participants and the presence of non-participating agencies with land use authority over portions of the Plan Area (i.e., Solano County, Yolo County and the City of Benicia), the Plan Area has been divided into three implementation zones (Figure 1-4). Different types of activities affecting Covered Species will be authorized within each of these three zones:

Zone 1: Urban Zone. The urban zone (87,000 acres) encompasses the existing and identified potential urban development areas within the Plan Participant cities of Dixon, Fairfield (excluding Travis Air Force Base), Rio Vista, Suisun City, Vacaville, and Vallejo.

In addition to city participation, two special districts within the urban boundary are also participating in the HCP. These additional Plan Participants are the FSSD and VSFCD (Figure 1-4). Within Zone 1, all Covered Activities (see Section 2.0) affecting covered plant and animal species and habitats conducted in compliance with the goals, objectives, and conservation strategies described in the HCP and implemented under the authority/control of the Plan Participants would be authorized.

Zone 2: SCWA and Irrigation and Reclamation District Zone. This zone (160,000 acres) consists of the lands outside of Zone 1 that are within the boundaries of SCWA, SID, MPWD, RD 2068, Dixon RCD, Dixon Regional Watershed JPA, FSSD, VSFCD, and any existing and future flood control channels/facilities maintained by the cities that extend beyond their city limits. Zone 2 areas also include right-of-ways extending beyond SID and MPWD boundaries. Covered and activities within this zone relate primarily to ongoing operation and maintenance of irrigation flood control facilities, construction of new irrigation and flood control facilities, and irrigation district service area inclusions (lands within the irrigation district service area that do not currently receive service) and annexations (lands currently outside of the irrigation district service area that may be included in the future). The portion of the Plan Area located in Yolo County falls within Zone 2.

Zone 3: Remainder of the County. Covered Activities within this zone (338,000 acres) relate primarily to implementation of the HCP reserve system, including adaptive management and monitoring, habitat enhancement, habitat restoration and creation, collection of seed for restoration purposes and other associated compatible activities (Sections 5.0, 6.0, 7.0, and 10.0 contain additional details on compatible activities) on designated reserves/preserves, mitigation sites/banks, open space lands and adjacent lands. Other Covered Activities within this zone include non-agricultural activities carried out under the authority of or participation by the Plan Participants on lands outside of the designated urban boundaries (i.e., non-commercial communication towers, water supply reservoirs such as underground storage tanks, and recreation facilities management).

Covered Activities

The Solano HCP provides a comprehensive Conservation Program² for impacts to Covered Species and Natural Communities for designated activities undertaken by or under the permitting authority/control of the Plan Participants within the Planning Area and applicable Covered Activity Zones. Plan Participants may also extend incidental take coverage for Covered Activities conducted by third parties (i.e. developers) who fall under their direct regulatory control.

Covered Activities have been divided into six broad categories. These six categories are described below and include information on which type of Covered Activity is authorized within each Covered Activity Zone.

Development (Zone 1 only): Development includes all ground- or habitat-disturbing projects and activities needed to accommodate urban growth including the construction and maintenance of public and private facilities, consistent with local general plans and local, state, and federal laws.

Of the Covered Activities authorized under the HCP, urban development has the largest impact on Covered Species and associated habitats. After application of the Solano HCP Conservation Strategy (Section 6.0), urban development will result in the conversion of 4,390 acres of Valley Floor Grassland and Vernal Pool Habitat, 2,860 acres of habitat within the Inner Coast Range, 5,770 acres of Irrigated Agriculture, and 20 acres of Riparian habitat (total 13,040 acres).

Construction of New Irrigation and Flood Control Facilities to support Irrigation District Service Area Inclusions, Expansions, and Annexations (Zones 1 and 2): This category includes construction of new irrigation and flood control facilities for irrigation district service area inclusions (lands within the irrigation district service area that do not currently receive service) and annexations (lands currently outside of the irrigation district service area that may be included in the future). Covered Activities associated with construction of new irrigation and flood control facilities would be authorized in Covered Activity Zones 1 and 2.

Operation and Maintenance of Public Facilities (Zones 1 and 2): Covered Activities in this zone consist of minor construction, operation, and maintenance activities conducted by Plan Participants, including non-federal transportation and flood control projects; pipelines, irrigation canals and associated facilities; water treatment facilities; and development of parks, recreation areas and trails within designated urban boundaries and service areas. Routine maintenance activities are required to protect the integrity of existing infrastructure such as roads, parks, trails, water control structures (pipes, conduits, culverts, etc.), pump stations, reservoirs, levees, canals, and distribution systems and to ensure that facilities operate efficiently and safely.

Detailed lists and descriptions of operation and maintenance activities (including linear miles of facilities maintained) conducted by each Plan Participant are provided in Appendix A. Impacts

² The Conservation Program consists of avoidance and minimization measures (Section 5.0), biological goals, objectives, and conservation measures (Section 6.0), and monitoring and adaptive management (Section 7.0).

associated with these activities and appropriate measures to avoid or minimize such impacts are described in Appendix D. Covered Activities associated with operation and maintenance of public facilities would be authorized in Covered Activity Zones 1 and 2.

Plan Participant Activities Outside of Urban Boundaries (Zones 2 and 3): This category includes non-agricultural activities carried out under the authority of, or participation by, Plan Participants on lands outside of Covered Activity Zone 1. Such activities may include, but are not limited to:

Communication Services Facilities. Covered Activities would include construction, operation, and maintenance of public communication facilities that provide electronic communication of audio/visual information via cable, microwave, or radio frequency transmission and attendant infrastructure such as access roads, drainage facilities, and electrical connections.

Flood Control Facilities. Covered Activities would include construction, operation, and maintenance of new flood control facilities that fall outside Covered Activity Zone 1, such as the City of Vacaville's Ulatis flood control detention basins.

Management, Enhancement, Habitat Restoration/Construction, Monitoring, and Associated Compatible Activities on Designated Reserves, Mitigation Sites/Banks, and Open Space Lands and Adjacent Lands (Zones 1, 2, and 3): This activity category includes actions associated with habitat management, habitat creation and restoration, approved agricultural and recreation uses, and other approved compatible uses on existing and future reserve lands designed to contribute to the conservation requirements of Covered Species and their habitats. Covered Activities also include take associated with routine activities on adjacent lands consistent with the Solano HCP Good Neighbor Policy and USFWS regulations. Covered Activities that fall within this category would be authorized in all three Covered Activity Zones.

Relocation of Covered Species (Zones 1, 2, and 3): This category includes activities to salvage, transplant, or relocate Covered Species as required to fully implement the Solano HCP Conservation Program. Covered Activities associated with the relocation of Covered Species would be authorized in all three Covered Activity Zones.

III. Biological Resources and Covered Species

Solano County's geography, with the Central Valley to the east, a large bay and estuary system to the south and west, and coastal mountain ranges to the west and north, has resulted in a great diversity of native species and habitats. Many areas of native habitat in the County, however, have been impacted or modified to varying degrees as a result of Solano County's agricultural history and more recent population and industrial growth. These changes and impacts have resulted in the large-scale introduction and spread of non-native plant species and loss of native habitats. Regardless, many native habitats still exist with varying degrees of disturbance and Solano County still supports a very rich mosaic of communities.

Native habitats found in Solano County include upland and seasonally wet grasslands/vernal pools, fresh and saltwater marshes, riparian forests and scrub, oak woodland, chaparral, and open water. Mixed in with these native habitats and dominating some areas are several non-native plant

communities that include non-native annual grasslands, agricultural lands, and developed areas. In some native communities there can be a large component of non-native species that have dominated part of that habitat. One example is the prevalence of non-native annual grasses in oak woodlands and grassland communities.

At a minimum, the HCP was required to protect the 17 federally listed species considered in the Solano Project Biological Opinion. The Plan Participants have elected to expand coverage under the HCP to include 37 species (Table 1-1). The majority of these additional species include: 1) species that became listed after March 1999 or were recently discovered in Solano County (i.e., San Joaquin Valley orcutt grass), 2) federally listed fish species under the jurisdiction of the NOAA NMFS, and 3) species listed as threatened or endangered under the California Endangered Species Act (CESA). The HCP further addresses other species of concern (i.e., species recognized by groups such as the CDFG and the California Native Plant Society (CNPS) as having declining or vulnerable populations, but not officially listed as threatened or endangered species). Inclusion of these species of concern as Covered Species in the HCP will provide coverage if, in the future, these species become federally listed. If they become State listed, inclusion in the HCP may facilitate the process of adding them to the State Incidental Take Permit.

Of the 37 species proposed for coverage under the Solano HCP, 25 are federally listed as either endangered, threatened or a candidate for listing; 16 are state listed as either rare, endangered, threatened or fully protected (12 of which are joint federal/state listed); 4 plant species are classified as List 1B species by the CNPS; and 3 animal species are listed as California Species of Special Concern by the CDFG (Table 1-1). The last species, the mid valley fairy shrimp, was proposed for federal listing in 2001, but the listing was found to be not warranted at that time. As it may warrant listing in the future, it was kept on the Covered Species list.

Only a subset of the species covered under the federal Section 10(a)1(B) "incidental take permit", will be covered by the State Permit issued under Section 2081 of the California Fish and Game Code. Twelve (12) species are currently listed as either threatened or endangered under CESA and two species are candidates for listing (Table 1-1). These 14 species are the only species that will be covered under the State Incidental Take Permit. For the three California Fully Protected Species (California black rail, California clapper rail, and salt marsh harvest mouse), take authorization is only being requested for Covered Activities associated with efforts to recover the species, such as habitat management, enhancement and restoration (See Section 2.5.5). For the two plant species (soft bird's-beak and Mason's lilaepsis) that are listed as rare under the California Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code Section 1900-1913), the Plan Participants are requesting a formal agreement, such as a Memorandum of Understanding, with the CDFG for impacts to these species resulting from Covered Activities.

All of these species are found in five basic habitat types within Solano County (Figure 4-2):

- **Vernal Pools and Valley Floor Grasslands**

The Valley Floor grasslands are dominated by two, typically intermixed associations: vernal pool system grasslands and grassland associated with low hills such as the Montezuma Hills and Potrero Hills and upper terraces along the valley floor/Inner Coast Range foothills. Vernal pool

ecosystems in Solano County consist of seasonally inundated pool basins and swales embedded in a matrix of undulating grasslands. Some of the species associated with this habitat type are vernal pool fairy shrimp, California tiger salamanders, and Contra Costa goldfields.

- **Inner Coast Range**

The Inner Coast Range Communities vary widely in elevation, bedrock composition and climate. Elevations range from ~300 to 3,000 feet, and precipitation (which varies with elevation) ranges from 20 to 40 inches per year. Vegetation, which varies with precipitation, contains grassland, oak savannah, oak woodland, and mixed chaparral/scrubland. Some of the species associated with this habitat type are California red-legged frogs and Callippe silverspot butterflies.

- **Riparian, Stream and Freshwater Marsh**

Riparian habitat is broadly defined as the transitional zone between aquatic and terrestrial (or upland) environments. Therefore, riparian vegetation encompasses a wide variety of vegetation community types that may occur along water bodies such as intermittent and perennial streams, lakes, ponds, and floodplains and may also occur in areas, such as seeps and springs, where the water table is sufficiently high to provide water to the roots of plants nearly year round. Typical freshwater marsh habitat develops in shallow, standing or slow-moving water at the edge of ponds and streams, and at other sites that lack currents and are permanently flooded by fresh water. Some of the species associated with this habitat type are western pond turtles, tri-colored blackbirds, Valley elderberry longhorn beetles, and Chinook salmon.

- **Coastal Marsh**

Within Solano County, the term marsh encompasses a broad range of vegetation types. The primary distinguishing characteristic of marsh communities is the presence of persistent to perennial marsh vegetation, typically ranging from less than a foot to over 12-feet in height. These marsh communities also include areas with relatively natural hydrological regimes (e.g., tidal influence) to marshes with altered, managed hydrologic systems. The coastal marshes are those that lie within the historic influence of tidal action. The three main coastal marsh types within the Plan Area are coastal salt marsh, coastal valley marsh, and freshwater marsh. Some of the species associated with this habitat type are California clapper rail, delta smelt, and Mason's lilaepsis.

- **Agricultural**

Although agricultural fields are not a natural habitat type, they do provide important forage areas for Swainson's hawks and burrowing owls. Swainson's hawks have adapted well to agricultural landscapes, which constitute a large portion of Solano County. Alfalfa is the crop that provides the best foraging habitat because of regular harvesting and irrigating that makes prey available for capture. Alfalfa fields are also farmed over a relatively long period of time (typically 4–5 years), allowing the establishment of rodent and insect communities that serve as a predictable prey bases for Swainson's hawks and burrowing owls. However, a variety of other

crop types also provide valuable foraging habitat at differing times of the breeding season and for differing prey species.

Special Management Species

Special Management Species include species that were initially considered for inclusion in the HCP as Covered Species; however, sufficient information on their biology and management is not available to allow the federal agencies to make the necessary findings under the “No Surprises” assurances (see Section 10.7 for additional information) that the proposed Conservation Program and Covered Activities will not appreciably reduce the likelihood of survival and recovery of the species in the wild. Special Management Species include 34 species and one rare Natural Community (Native Grassland) addressed in the Solano HCP (Table 1-2).

While these Special Management Species are not afforded take coverage under the State and or Federal regulations, these species and one Natural Community are often considered under CEQA Criteria 15380 to be threatened or endangered. Additionally, these species will benefit from the broader community conservation provided for other Covered Species and, where additional management actions are needed to address these species needs, these additional measures are prescribed in Sections 5 and 6 to maximize the conservation benefits for these species. The intent of addressing these species in the HCP is to allow future CEQA documents to tier off the findings of the Solano HCP EIR/EIS.

As with the Covered Species in Appendix B, the Special Management Species descriptions are grouped by their associated Natural Community. Please refer to Appendix B for the Natural Community descriptions and conceptual models. Each species account details information on the status, range distribution, habitat and ecology, population levels and occurrences in the Solano HCP Plan Area, and a discussion of conservation issues. Information on the distribution and abundance of the species is based on information from the California Natural Diversity Data Base and record or reference information on species occurrences developed from available information such as environmental documents, survey reports, and other published and unpublished documents. Such information has been input into a data base developed for the Solano HCP to track and document species information.

IV. Conservation Strategy

The Conservation Strategy provides a comprehensive program involving avoidance and minimization of impacts, implementation of specific conservation measures designed to preserve, restore, and manage habitats for covered species, and provide long term monitoring and adaptive management to maximize conservation values on established reserves over time. Specific biological goals and objectives for each Natural Community and Covered Species were identified and detailed conservation measures were developed to achieve these goals and objectives and implement a system of reserves that will mitigate impacts to covered species and to contribute to the recovery of these species in the Plan Area.

The HCP provides a Conservation Analysis (Section 4.0) to assess the status of biological resources within the Plan Area and identify biologically-based measures necessary to conserve Covered Species, irrespective of the Plan Participants' conservation commitments under the Solano HCP. This section also takes into consideration the location and needs of the Special Management Species. The Conservation Analysis addresses actions needed to conserve (recover) Covered Species and communities within the Plan Area. It also provides a basis for evaluating the Solano HCP Conservation Strategy (Chapter 6.0) against the standards for issuance of incidental take permits under FESA and CESA. The Conservation Analysis presented in this section outlines the recovery standards for Covered Species and Natural Communities in the Plan Area and estimates the acreage of each community type needed to achieve recovery.

Based on the Conservation Analysis, biological goals and objectives for each Natural Community and Covered Species were developed and prescribed in Section 6.0 to fully mitigate planned take and impacts associated with Covered Activities. In combination, these biological goals and objectives are designed to achieve the overarching conservation goal of the Solano HCP, to preserve contiguous functional landscapes that encompass the full suite of ecological diversity, maintain connectivity among natural communities, and functionally buffer natural communities from direct and indirect impacts from anthropogenic pressures.

Goals are broad, guiding principles based on the conservation needs of each Natural Community and Covered Species and describe the desired future condition of these communities and species with full implementation of the HCP. Each goal correlates to an essential ecological process or function identified in the conceptual models in Appendix B and to the reserve design principles described in Section 4.2.

Objectives are then provided to achieve the biological goals. Objectives are expressed as conservation targets and specific actions and clearly state a desired result. Objectives are the measurable components of the Conservation Program and are intended to be achieved within a given time-frame. The determination of conservation measures, adaptive management and biological effectiveness monitoring (see Section 7.0) derive from the objectives.

The conservation measures specify actions that will collectively achieve the objectives and thus the biological goals of the Conservation Strategy. The monitoring approach, adaptive management framework, and implementation of the HCP are based on the conservation measures.

Conservation Measures

Note: Conservation Measures described below are a summary of requirements-see text of the HCP for full requirements.

Valley Floor Grassland and Vernal Pool Natural Community Conservation Measures

Conservation Measure VPG 3: Habitat Mitigation.

High Value Conservation Areas (1A-1L) (Figure 4-9)

Wetland Component Direct Impacts: Dependent on location, preserve vernal pool and swale habitats at a ratio of 6:1 or 9:1 (mitigation: impact) and restore vernal pool and swale habitats at a ratio of 1:1.

Wetland Component Indirect Impacts: Dependent on location, preserve vernal pool and swale habitats at a ratio of 2:1 or 3:1 for avoided wetlands within 250 feet of proposed development.

Upland Component Direct Impact: Dependent on location, preserve upland habitat at a ratio of 2:1 or 3:1.

Upland Component Indirect Impact: Preserve avoided uplands at a ratio of 1:1 within 250 feet of proposed development.

Medium Value Conservation Areas (Subareas 2A – 2N)

Wetland Component Direct Impacts: Preserve vernal pool and swale habitats at a ratio of 2:1 and restore vernal pool and swale habitats at a ratio of 1:1.

Wetland Component Indirect Impacts: Preserve vernal pool and swale habitats at a ratio of 1:1 for avoided wetlands within 250 feet of proposed development.

Upland Component Direct: In Subareas 2C, 2F, and 2I, preserve upland habitat at a ratio of 3:1. In the remaining subareas, preserve upland habitat at a ratio of 2:1.

Upland Component Indirect Impact: Preserve avoided upland habitat at a ratio of 1:1 within 250 feet of proposed development.

Low Value Conservation Areas and Seasonal Wetlands within Agricultural Areas of the County outside of a Medium Value Conservation Area

Wetland Component Direct Impacts: Preserve of vernal pool and swale habitats at a ratio of 1:1 and restore vernal pool and swale habitats at a ratio of 1:1.

Wetland Component Indirect Impacts: Preserve vernal pool and swale habitats at ratio of 1:1 within 100 feet of proposed development.

Species-Specific Conservation Measures

Contra Costa Goldfields

Conservation Measure VPG 5: Development Criteria for Contra Costa Goldfield Core Population

Areas. For Contra Costa goldfields, performance criteria/design guidelines³ shall be implemented as part of urban development within Plan Participant jurisdictions (Figure 4-7).

Conservation Measure VPG 6: Contra Costa Goldfield Mitigation Requirements for Impacts to Occupied Habitat. All direct impacts to extant stands of Contra Costa goldfields within identified Core Areas and Potential Habitat Areas shall be mitigated by establishing new, self-reproducing populations at a ratio of 4:1 within protected habitat areas.

California Tiger Salamander

Conservation Measure VPG 8. Mitigation shall be required for any Covered Activity within the known or potential range of California tiger salamanders (see Figure 4-8).

Breeding Habitat Mitigation: Impacts will be mitigated for by preserving breeding habitat at a 3:1 ratio and creating breeding habitat at a ratio of 2:1 (approximately 0.35 acres), whichever is greater.

Upland Habitat Mitigation: Depending on location, impacts to uplands and other movement habitats will be mitigated at a 2:1 or 3:1 ratio.

California Red-Legged Frog

Conservation Measure RLF 3.1: Impacted breeding habitat shall be mitigated for by preserving existing occupied breeding habitat at a 2:1 ratio and constructing new breeding habitat at a minimum 2:1 ratio (Figure 4-15).

Conservation Measure RLF 3.2: Impacts to other wetland/aquatic and riparian habitats will be mitigated at: a) a 2:1 ratio for created or restored aquatic habitats and b) a 3:1 ratio where enhancement measures for existing habitat areas are implemented and the affected habitat is replaced (constructed) at a minimum 1:1 ratio.

Callippe Silverspot Butterfly

Conservation Measure CSB 1: To mitigate for conversion of non-breeding habitats within the Callippe Silverspot Butterfly Conservation Area, suitable habitat shall be preserved and managed at a 3:1 ratio (Figure 4-14).

Conservation Measure CSB 3: Impacts to core viola larval host plant stands, adult nectar sources and associated buffer habitats within the Callippe Silverspot Butterfly Conservation Area shall meet the following mitigation requirements:

- Direct Impacts -shall provide additional mitigation at a 3:1 ratio (6:1 total).

³ No more than 10 percent of suitable wetland habitat for Contra Costa goldfields shall be directly impacted per project. The project shall not directly impact more than 50 percent of the current or historically occupied habitat on the site.

- Indirect Impacts -shall provide additional mitigation at a 1.5:1 ratio (4.5:1 total).

Riparian, Stream and Freshwater Marsh Natural Community Conservation Measures

Conservation Measure RSM 2:

- Mitigation for unavoidable project impacts to riparian, stream, and freshwater marsh habitats within the Priority Drainages and Watersheds (Figure 4-11) shall be provided at a ratio of 4:1 ratio through additional riparian plantings and protection measures or create/restore new in-kind habitats at a ratio of 3:1 within the same drainage.
- Mitigation for permanent impacts to ephemeral to intermittent first order and second order streams lacking a defined woody riparian community shall be provided at a 2:1 ratio if existing streams or marsh habitats are enhanced through additional restoration and protection measures or 1:1 if new in-kind habitats are constructed.
- Mitigation for permanent impacts to third and higher order streams and second order streams with riparian vegetation shall be provided at a 3:1 ratio through additional riparian plantings and protection measures or create/restore new in-kind habitats at a ratio of 1.5:1.

Conservation Measure RSM 3. Mitigation for direct impacts to pond or freshwater marsh habitat not associated with streams shall be provided at a 2:1 ratio.

Conservation Measure RSM 4. Mitigation for direct impacts to seasonal wetlands within the Inner Coast Range shall be provided at a 2:1 ratio.

Species Specific Conservation Measures

Conservation Measure RSM 13. Where removal of elderberry shrubs or their stems measuring one-inch or greater in diameter is unavoidable the following mitigation is required:

- Plant a minimum of 5 elderberry seedlings or rooted cuttings and 5 associated native, woody riparian plants for each removed elderberry shrub.
- Plant 2 elderberry seedlings and 2 native, associated woody riparian plant seedlings for every 10 elderberry stems one-inch or greater in diameter trimmed/removed.

Giant Garter Snake

The following conservation measures apply to all known or potential habitat for giant garter snake within the Plan Area (Figure 4-19).

Conservation Measure GGS 4. Compensatory mitigation for unavoidable, long-term (longer than two years) impacts to suitable aquatic and associated upland habitat within the Giant Garter Snake Conservation Area shall be provided as follows:

Aquatic Component Direct Impacts. Restore aquatic habitat at a ratio of 3:1 and restore upland habitat adjacent to restored aquatic habitat at a ratio of 2:1.

Aquatic Component Indirect Impacts. Restore aquatic habitat at a ratio of 3:1 for avoided wetlands within 200 feet of proposed development and restore upland habitat adjacent to restored aquatic habitat at a ratio of 2:1.

Coastal Marsh Natural Community

Conservation Measure CM 1: Compensatory mitigation for unavoidable direct, permanent impacts to coastal marsh habitats shall be provided through the creation and/or restoration of tidally-influenced coastal marsh at a ratio of 3:1 (Figure 4-21).

Conservation Measure CM 2: Mitigation for the shading of shallow water habitat shall be provided through the preservation, creation or restoration of shallow water habitat at a 3:1 ratio.

Species Specific Conservation Measures

Swainson's Hawk Conservation Measures

The following conservation measures apply to all known or potential habitat for Swainson's hawk within the Plan Area (Figure 4-22).

Conservation Measure SH 1: Long-term impacts⁴ to Swainson's hawk foraging habitat within the Irrigated Agriculture Conservation Area, the Valley Floor Grassland Conservation Area, and the Inner Coast Range Conservation Area shall be mitigated through the preservation and management of foraging habitat at a ratio of 1:1.

Conservation Measure SH 6: Each Swainson's hawk reserve within the Irrigated Agriculture Conservation Area shall provide at least one suitable nest tree/grove per 40 acres of reserve.

Burrowing Owl Conservation Measures

The following conservation measures apply to all known or potential habitat for burrowing owl within the Plan Area (Figure 4-23).

Conservation Measure BO 1: Mitigation for the permanent conversion (more than one breeding season) of burrowing owl habitat for urban development or other permanent facilities shall be provided at a 1:1 ratio. Mitigation ratios specified in the conservation measures for applicable Natural Communities and/or Covered Species (i.e., Valley Floor Grassland and Vernal Pool [excluding the wetland restoration/construction component], Coastal Marsh, Swainson's Hawk, California Red-legged Frog and Callippe Silverspot Butterfly) can be used to satisfy burrowing owl conservation, if the reserve area meets the basic reserve management standards (Sections 7.3 and 10.5) and criteria

⁴ Long-term impacts are defined as those Covered Activities resulting in the loss of more than one year of foraging habitat.

specified in Conservation Measure BO 2.

Exemptions: In-fill projects less than five acres in size and surrounded by urban development (based on conditions at the time the HCP is adopted) would have minimal effects on the extent and quality of burrowing owl habitat and are exempt from burrowing owl foraging habitat mitigation requirements. Nonetheless, project proponents are obligated to avoid destruction of active burrowing owl nests and take of burrowing owls in compliance with the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.5.

Conservation Measure BO 2: If Covered Activities associated with construction of pump stations, antennae sites, new irrigation canals, buried pipelines or utilities (but excluding restoration and reserve management activities) will result in temporary impacts to occupied burrows, shall be mitigated according to the following criteria:

Breeding Season

- Temporary impacts less than or equal to one acre in size: Install 5 burrows on contiguous lands 250 feet or more from the edge of the construction area if at least 6.5 acres of contiguous habitat remains.
- Temporary impacts greater than one acre in size: Install 10 burrows/acre on contiguous lands 250 feet or more from the edge of the construction area if at least 6.5 acres of contiguous habitat remains.
- Temporary impacts that will reduce the amount of suitable burrowing owl habitat to less than 6.5 acres on a parcel or contiguous ownership parcels shall be mitigated by preserving burrowing owl habitat off-site at a ratio of 0.5:1 (minimum impact is the construction area plus a 250-foot buffer for a minimum of 4.5 acres).

Non-Breeding Season

- Temporary impacts less than or equal to one acre in size: Install 2 burrows on contiguous lands 160 feet or more from the edge of the construction area if at least 6.5 acres of contiguous habitat remains.
- Temporary impacts greater than one acre in size: Install 5 burrows/acre on contiguous lands 160 feet or more from the edge of the construction area if at least 6.5 acres of contiguous habitat remains.

Reserve Design

The reserve system is the backbone of any HCP. The extent to which the reserve system can protect and support viable populations of Covered Species and maintain biological diversity and ecosystem function will determine the overall success of the HCP. The Conservation Analysis (Sections 4.3 and 4.4) and Conservation Strategy (Section 6.0) refer to the reserve design principles that shall, to the maximum extent practicable, guide development of the Solano HCP reserve system. The reserve design principles include:

- Preserve Large Blocks of Habitat

- Conserve Target Species Throughout the Plan Area.
- Prioritize Habitat with High Conservation Value at High Risk of Development
- Incorporate a Range of Environmental Gradients
- Protect Regional Water Quality
- Maintain Connectivity
- Preserve Blocks of Habitat Close Together
- Incorporate Buffer Zones
- Minimize Edge Habitat
- Provide Diverse Environmental Conditions
- Consider Ecotone and Transition Areas
- Target 'Hot Spots' of Diversity
- Minimize Human Disturbance
- Consider Management Needs
- Incorporate Restoration Activities

Reserve Land Acquisition

Implementation of the Conservation Strategy will result in the establishment of a reserve system that will:

- preserve and manage an additional 10,500 to 11,500 acres of valley floor/vernal pool grassland habitat, including:
 - 90 percent of the remaining suitable habitat in the six Contra Costa goldfields core population areas within the Zone 1 development area in secure managed preserves,
 - 270 to 400 acres of restored vernal pools and associated wetland communities,
 - 1,400 to 2,000 acres in a minimum of four California tiger salamander populations;
- preserve and intensively manage approximately 5,700 acres of agricultural habitat and 1,000 acres of grassland/oak savanna habitat for Swainson's hawks and burrowing owls and provide for increased long-term nesting opportunities through the establishment of a tree planting program and installation and maintenance of artificial burrow complexes;
- preserve and manage approximately 3,300 acres of upland habitat for California red-legged frogs and callippe silverspot butterfly and promote the expansion and recovery of California red-legged frog and callippe silverspot butterfly populations;
- preserve, restore, and manage approximately 32 miles of stream and riparian habitat within the plan area;

- provide additional sources of funding for management and restoration of Suisun Marsh and Delta waterways within the Plan Area to improve water quality and control invasive species on 5,000 to 8,500 acres of coastal marsh habitat;
- improve regional water quality to the maximum extent possible by implementing best management practices on future development projects to minimize construction and post construction water quality impacts;
- restore and manage an additional 175 acres of aquatic habitat and approximately 120 acres of associated upland habitat for giant garter snakes; and
- provide long-term commitment for future acquisition, including seeking grant funding for additional acquisitions of high priority conservation areas that will contribute to the recovery of Covered Species within the Plan Area.

Commercial and institutional mitigation and conservation banks are expected to provide most of the habitat restoration and preservation for vernal pool habitats/seasonal wetlands, Swainson's hawks, burrowing owls, and a component of riparian habitat conservation. Additional reserve lands will be acquired through fee title, purchase of conservation easements, and direct land dedications. Conservation lands established under the auspices of, or to fulfill the requirements of, the Solano HCP shall only be acquired from willing sellers and shall be located within the Plan Area. Plan Participants will not condemn land or exercise their powers of eminent domain to acquire conservation lands.

The Solano HCP is primarily designed to function as a pay-as-you-go system, with conservation actions completed prior to or concurrent with the loss or conversion of habitats and associated incidental take of covered species. However, substantial habitat preservation, management, restoration, and enhancement is planned or ongoing in the region such that a significant portion of the HCP's habitat conservation goals and objectives, particularly for vernal pool grassland communities and associated species, are expected to occur well in advance of impacts.

V. Monitoring and Adaptive Management

The purpose of the Monitoring and Adaptive Management section is to describe the framework for monitoring and how the anticipated results will direct management on the Solano HCP reserve system. The overall goals of the Monitoring and Adaptive Management Program for the Solano HCP are:

- To preserve, protect, and enhance natural communities within the Solano HCP reserve system for the benefit of Covered Species, Special Management Species and other native plants and animals.
- Minimize the uncertainty associated with managing Covered Species and Natural Communities where there are gaps in the available scientific information on their biological requirements.
- Incorporate new information on the life history or ecology of Covered Species and Natural Communities generated through continuing research.

Monitoring

Monitoring is mandated under the ESA (USFWS 1996, USFWS 2000) to demonstrate compliance with the respective incidental take conditions and to provide “feed-back” information for adaptive management actions implemented under the HCP. The two main components of monitoring are: compliance monitoring and effectiveness monitoring. Compliance monitoring is verifying that the terms of the HCP, permit, and IA are being carried out. In other words, compliance monitoring tracks the status of HCP implementation, ensuring that planned actions (e.g., conservation measures) are being properly executed as written in the Plan (see Section 10.6). Effectiveness monitoring evaluates the effectiveness of the operating Conservation Program of the HCP and whether the assumptions and predictions made during the development of the Plan hold true (USFWS 2000). Based on the U.S. Fish and Wildlife Service’s “5-Point Policy” for Habitat Conservation Plans, there are several components to effectiveness monitoring, including the evaluation of incidental take. However, this section of the HCP deals with effectiveness monitoring associated with achieving the biological goals and objectives. In this Plan, this component of effectiveness monitoring is referred to as Biological Effectiveness Monitoring.

Biological Effectiveness Monitoring is the measurement of variables that allow the program to assess the success of the HCP in meeting its stated biological goals and objectives. Biological effectiveness monitoring evaluates the effects of the planned actions, by measuring biologically meaningful variables, and determining whether the operating Conservation Program of the HCP (i.e., implementation of the avoidance and minimization measures, conservation measures and preserve management) are successfully achieving the biological objectives. The assumption made in the Conservation Program is that if the conservation measures are properly implemented these actions will collectively achieve the stated biological goals and objectives. The purpose of Biological Effectiveness Monitoring is to track the validity of this assumption (USFWS 2000).

Adaptive Management

The adaptive management and monitoring section describes a framework for confronting uncertainty in natural resources issues. An adaptive management approach, acknowledges that managed resources will always change as a result of human intervention, that surprises are inevitable, and that new uncertainties will emerge. Uncertainties do not paralyze management actions nor are they ignored. Instead, uncertainties are dealt with via an active learning approach (i.e., policies are experiments).

Since its development in the early 1970s, adaptive management has been defined in various ways. Different people and organizations continue to have somewhat differing views of the best definition. The California NCCP Act of 2002 defines adaptive management as the use of results of new information gathered through the monitoring program of the plan and from other sources to adjust management strategies and practices to assist in providing for the conservation of Covered Species. USFWS (1996) and the Five-point Addendum (USFWS 2000) defines adaptive management as a method for examining alternative strategies for meeting measurable biological goals and objectives, and then, if necessary adjusting future management actions according to what is learned. The USFWS further argues that the key component in making the adaptive process

meaningful includes careful planning through identification of uncertainties, incorporating a range of alternatives, implementing a sufficient monitoring program to determine success of the alternatives, and a feedback loop from the results of the monitoring program that allows for change in the management strategies. Figure 7-1 presents a conceptual model of the adaptive management feedback loop. The purpose of the adaptive management feedback loop is to ensure that the conservation goals and objectives for Covered Species and natural communities are being met.

Although the adaptive management strategy anticipates future modifications to implementing the Conservation Program, the alternative conservation strategies are subject to the same limits as other provisions of the Solano HCP consistent with the FWS's "No Surprises" policy. That is, conservation measures and management schemes may be modified or new measures substituted as long as the new measures are of roughly equivalent cost and are consistent with approved take assumptions. Procedures for modifications and amendments to the Section 10(a) permit are described in Section 10.10.

VI. Impact Assessment

The effects of the Solano HCP Covered Activities are assessed for each Natural Community and species covered under the Solano HCP. Impacts to Covered Species are addressed on a Natural Community basis and, for most species, are described as the amount of habitat lost rather than the amount of individuals removed from the population. Each Covered Species is addressed either in the applicable Natural Community or as an individual species as presented in Section 4.0 and Appendix B.

For each Covered Species, a brief introductory section is provided that highlights the species' status and known occurrence/distribution within Solano County. Impacts, resulting from Covered Activities are categorized by HCP Covered Activity Zones 1 through 3 (Figure 1-4).

Section 8 of the Solano HCP addresses the effects of the proposed conservation measures on each Natural Community and covered species. Impacts – estimated take for animals or effects to plant species – are addressed for each Activity Zone: Zone 1 Urban Growth Effects, Zone 2 SCWA and Irrigation and Reclamation District Effects, and Zone 3 HCP Conservation Measures Implementation. Table 8-2 summarizes the estimated take/habitat loss for Valley floor Grassland/Vernal Pool Natural Community and associated Covered Species. Table 8-5 summarizes the estimated take/habitat loss for California Red-legged Frog, Callippe Silverspot Butterfly, Giant Garter Snake, Swainson's Hawk and Burrowing Owl. Table 8-6 summarizes the estimated take/habitat loss for Riparian, Stream, and Freshwater Marsh Natural Community and associated Covered Species. Table 8-10 summarizes the estimated take/habitat loss for Coastal Marsh Natural Community and associated Covered Species.

VII. Alternatives

Four alternatives were considered by the Plan Participants and are discussed below.

Alternative 1: No Action Alternative

Under the No Action Alternative, an HCP would not be implemented. As a result, compliance with the ESA and CESA would be considered on a case by case basis, essentially maintaining the current system of evaluation, assessment, and permitting. SCWA and its member agencies would be required to continue implementing the Short-term Conservation Measures as required in the Solano Project Biological Opinion (USFWS 1999a).

The Short-term Conservation Measures include general and species-specific conservation measures to protect listed species and their habitats. Such measures would only apply to the required Plan Participants. Voluntary HCP participants such as Rio Vista, Dixon, and RD 2068 would not be required to comply with these measures.

Section 9 of the HCP details the reasoning for rejecting this alternative.

Alternative 2: Coverage of Federally-Listed Species Only Alternative

Alternative 2 would consist of implementing an HCP that addresses only those 17 listed species specified in the USFWS' 1999 Biological Opinion and one additional species, California tiger salamander that has been listed as threatened under the ESA since the Biological Opinion was issued (see Table 9-1). This alternative, however, would not include threatened steelhead ESUs, which were not included in the Solano Project Biological Opinion (steelhead are regulated by NOAA NMFS). The USFWS would issue incidental take permits for species under their jurisdiction in compliance with the ESA.

Plan Participants would not seek 2081 or NCCP incidental take permits for state listed species. However, Plan Participants could request that CDFG concur with the federal Biological Opinion for the issuance of State incidental take permits for dual, state and federally-listed species as allowed under Section 2080.1 of the Fish and Game Code. Seven species are listed as threatened or endangered at both the federal and state level. Under this process, if CDFG concurred that the HCP fully mitigated for impacts to these species, Plan Participants would obtain incidental take permits for five of the seven species (two of the dual listed species are State Fully Protected Species and incidental take of these species is prohibited under state law, except for actions necessary for recovery of the species). The five jointly listed species include Colusa grass, Solano grass, giant garter snake, soft-bird's-beak, and delta smelt. Activities covered under Alternative 2 would be the same as the Proposed HCP. The permit term would be 30 years. While adoption of the federal opinion would be requested, CDFG may choose not to concur with the Biological Opinion and determine that issuance of 2081 incidental take permits is warranted.

Under Alternative 2, applicable conservation measures described in Section 6.0 would be implemented to mitigate for impacts to the 18 covered species. These measures would include all the Valley Floor Grassland and Vernal Pool Natural Community and Coastal Marsh Natural Community conservation measures, and species-specific conservation measures for California red-legged frog, Callippe silverspot butterfly, Valley elderberry longhorn beetle, and giant garter snake. Conservation measures for the Riparian and Freshwater Marsh Natural Community, Swainson's hawk, and burrowing owl would not be implemented.

Under Alternative 2, Plan Participants would not receive incidental take coverage for the 20 additional species covered under the Proposed HCP should any of these species become listed in the future, even if applicable community conservation measures were implemented. As a result, higher mitigation requirements could be required in the future as mitigation for these species would not be guaranteed under the federal No Surprise assurances (see Section 10.7.5). On average, one species per year has been listed, proposed, or petitioned for listing since the Solano Project Water Contract was renewed in 1999. Critical Habitat has also been designated for 13 species within Solano County during this period. Under CEQA, potential impacts to the 20 additional species would also need to be addressed through the local, project-level review and approval process. Additional mitigation for these non-listed species could be required. Local review requirements would not achieve the Proposed HCP objectives for streamlining permitting and providing more consistent conservation of rare species.

Under Alternative 2, impacts/take of and conservation actions for the 18 threatened or endangered species under USFWS jurisdiction would be the same as described under the Proposed HCP (Table 9-1). Section 9 of the HCP details the reasoning for rejecting this alternative.

Alternative 3: Reduced Potential for Incidental Take Alternative

Alternative 3 identifies measures to provide greater avoidance and minimization of potential take of each federally-listed animal species covered under the HCP. The term “take,” as defined in the federal ESA does not include plants.

Under this alternative, an HCP would be developed to address conservation of the 37 species associated with the Proposed Action. However, Alternative 3 would minimize potential impacts to federally-listed animal species and habitat by reducing the footprint of urban development. Conservation strategies for these Covered Species would be qualitatively the same as the proposed HCP; however, less mitigation (e.g., the amount of land/habitat set aside for protection that is needed for mitigation) would be required because impacts associated with Covered Activities would be reduced.

The USFWS and NOAA NMFS would issue incidental take permits and CDFG would authorize incidental take under a 2081 agreement resulting from this level of development. Under Alternative 3, the HCP and associated permits would be in effect for a 30-year term.

Alternative 3 assumes, unless otherwise noted, that reductions in impacts to federally-listed animal species would result in correspondingly lower levels of impact to covered plant species. Information on the relative effects on all species under this alternative compared to the Proposed HCP is summarized in Table 9-1.

Section 9 of the HCP details the reasoning for rejecting this alternative.

Alternative 4: Increased Mitigation/Combined HCP/NCCP Alternative

Alternative 4 would implement a greater level of conservation than being considered under the

Proposed Action. This alternative would consist of a combination of increased mitigation ratios (e.g., greater acreage of habitat set aside for species protection as required for mitigation) to compensate for the loss of habitats than included in the Proposed Action and/or greater conservation actions as required to meet and implement state NCCP Act standards.

This alternative would entail preparation of a joint HCP/NCCP covering 37 species for a period of 30 years. The Solano HCP was initially developed and evaluated to address State NCCP Act standards. The NCCP Act requires that Plan Participants commit to conserve Covered Species and communities within the Plan Area to the level of recovery. Section 4.0 addresses the questions and issues associated with determining the recovery standards for the Covered Species and Natural Communities and estimates the acreage of each community needed to achieve the NCCP recovery standard. Table 9-2 summarizes the natural community impacts, acreage required for recovery, anticipated mitigation (based on the conservation measures for the Proposed HCP), extent of protect land, the acreage at low risk for loss or alteration, and the additional acreage and estimated land costs (in 2005 dollars) required to meet the recovery standard.

As seen in Table 9-2, the projected total cost to implement recovery would be approximately \$403 million with an annualized cost of approximately \$13.5 million over the 30-year span of the HCP (all in 2008 dollars). These costs represent the amount needed for habitat protection and do not include costs for adaptive management and monitoring or long term management. A majority of these recovery costs (62%) are associated with commitments to riparian and Swainson's hawk conservation. Information from the Science Advisors suggests that preservation of most of the currently irrigated agriculture in its present form would be needed to conserve the Swainson's hawk population in Solano County. For this assessment, recovery objectives were assumed to be achieved if 50 percent of the lands were intensively managed and protected as Swainson's hawk foraging habitat. If protection of all foraging habitat were necessary to maintain the current population, recovery standard costs could double bringing the total to approximately \$502 million or \$17.3 million per year. Conversely, if lower conservation requirements could be negotiated and shown to achieve recovery objectives, implementation costs for this alternative would be lower. Nevertheless, the costs to implement Alternative 4 would still likely exceed the costs to implement the Proposed HCP.

Substantially increasing mitigation requirements to achieve a recovery level of conservation is not practicable. The additional cost burden cannot be solely tied to future development impacts, as no nexus exists for future development to fund more than its fair-share of recovery costs. The Proposed HCP incorporates a fair-share contribution toward recovery into its conservation strategies.

State, federal, and private grants would also contribute to funding the additional recovery commitment. However, grant funds cannot be guaranteed and the Resource Agencies are unwilling to provide specific commitments for such funding. As such, the Plan Participants would be solely responsible for funding the recovery commitment.

Plan Participants have carefully reviewed the potential costs and have determined that local funding could not be obtained to cover such costs or even a substantial portion of such costs. General funds are not available (cities throughout California are traditionally under funded with respect to providing even basic services) and the local electorate has not supported bonds or other types of

taxes to help fund basic services such as schools, police, fire, and regional transportation. Therefore, any funding source that could be considered a tax (and would by state law require approval by a two-thirds vote of the electorate) is considered unlikely to be approved.

Alternative 4 achieves the HCP conservation goals and provides greater long term assurances from the regulatory agencies. However, this alternative was rejected as impracticable due to costs because of the potential liability to the Plan Participants for fully funding the NCCP Conservation Program.

VIII. Plan Implementation

Section 10 of the HCP addresses implementation the Solano HCP. Implementation will require Plan Participants to implement certain actions to administer the HCP. The Plan Participants will also be responsible for ongoing administration, coordination, monitoring, review and reporting that is essential to the success of the HCP. This section also addresses the assurances provided by the State and Federal governments with respect to changed and unforeseen circumstances and procedures for amending and renewing the incidental take permits.

Governance

The SCWA Board of Directors will serve as the governing board for the oversight of the HCP. The SCWA Board of Directors is composed of the five members of the Solano County Board of Supervisors, the mayors from all seven cities in the County, and a board member from each of the three agricultural irrigation districts in the County (SID, MPWD, and RD 2068). The SCWA Board of Directors meets on a monthly basis.

The SCWA Board of Directors will act as the decision-making body for implementation and oversight of the Solano HCP. The Board's duties will include, but are not limited to:

1. Adoption of annual operating budgets.
2. Approval of changes to annual impact fees.
3. Acceptance/denial of conservation easements or land dedications.
4. Resolution of any Plan Participant disputes or differences between implementation and/or interpretation of conservation measures or other HCP requirements.

SCWA staff will assume primary responsibility for coordination with the Resource Agencies and preparation of the annual compliance report based on information provided by each Plan Participant. The Plan Participants will provide input and guidance for decision-making through an Advisory Committee.

SCWA's responsibilities will include, but are not limited to:

1. Maintaining a regional data base for Covered Species occurrence and development activities in compliance with the HCP monitoring and reporting requirements.

2. Preparing and submitting an annual report on the status of compliance with HCP implementation.
3. Coordinating plan amendments.
4. Providing support for ongoing education for interested parties regarding the status of the HCP.
5. Collecting application and in-lieu impact fees from Plan Participants and disbursing these fees for appropriate conservation activities consistent with applicable HCP conservation strategies and Advisory Committee input.
6. Maintaining and developing annual budgets.
7. Implementing ongoing monitoring and adaptive management studies.
8. Establishing standard protocols for baseline surveys.
9. Managing and coordinating technical consultants and specialists, as necessary, to implement and monitor HCP compliance.
10. Certifying and maintaining a list of approved reserves, conservation areas, and mitigation banks in compliance with Solano HCP mitigation and conservation requirements.
11. Serving as the long-term land steward/management entity for reserves and preserves (such duties will most likely be contracted to a third party land trust or other management entity).
12. Coordinating applications for and disbursement of non-impact fee funding from grants and other sources to enhance HCP conservation programs.
13. Coordinating review and approval of reserve management plans and endowments.
14. Coordinating with Plan Participants, Resource Agencies, and an advisory group on an as-needed and appropriate basis to review HCP implementation.

Local land use agencies and the city Plan Participants will likely implement the HCP through their planning departments. Other Plan Participants (e.g., irrigation districts and special districts) will implement the applicable conservation actions through their executive director or designated representative. These Plan Participants will be responsible for the following actions within their respective jurisdictions and authorities:

1. Determining appropriate avoidance/minimization measures and/or compensation requirements for Covered Activities as well as eligible third parties seeking coverage under the HCP for Covered Activities within their respective jurisdictions.
2. Assuring and documenting compliance with required conservation measures.
3. Collecting or verifying that application and in-lieu impact fees have been paid prior to issuing grading permits or other project approvals that would affect Covered Species or Natural Communities.
4. Transferring application and in-lieu impact fees (or land acquisitions/easements provided in lieu of impact fees) to SCWA.
5. Providing compliance data to SCWA for preparation of the annual compliance report.

SCWA, in consultation with the Plan Participants and Regulatory Agencies will be responsible for reviewing and certifying mitigation banks as well as private land dedications to fulfill conservation requirements under the HCP. This certification/acceptance process will include review of the ability of the site to fulfill applicable conservation objectives and requirements and to assure that adequate funding is provided for the management and monitoring of the reserve in perpetuity.

Plan Participant Committee

SCWA and the other Plan Participants will form an Executive Committee similar to the Applicant Committee formed for preparing the Solano HCP. The Executive Committee will provide input from the individual Plan Participants and keep the Plan Participants informed on the status of the HCP.

Advisory Committee

SCWA and the other Plan Participants will form an Advisory Committee to provide guidance on the implementation of the Solano HCP. The Advisory Committee will be comprised of representatives from the Plan Participants' agencies; the Resource Agencies; and members from the general public representing various environmental, land use, agricultural and development interests similar to the HCP preparation steering committee. The purpose of the Advisory Committee will be to provide input and guidance on the use of in-lieu fees, preparation of grant applications, establishment and approval of reserve/preserve management plans and funding mechanisms, and general interpretation of HCP conservation strategies where the intent or applicability of the measures for a specific project may not be clear.

HCP Agency Review Committee

SCWA, Plan Participants and the Resource Agencies (see Section 10.2.7) will establish a Review Committee that will meet regularly for the purposes of reviewing specific required documents for Incidental Take Coverage under the Plan. The committee will be responsible for evaluating complex applications under Section 10.4, such as: (1) interpretation of baseline study results; (2) adequacy of management plans and associated funding for reserves; (3) restoration plans; and (4) documentation that a project complies with avoidance requirements and constitutes the least environmentally damaging practicable alternative for the project site as required under this HCP. The committee will advise applicants of all insufficient items, inadequate documentation or data needs and will provide recommendations for project modifications needed for compliance with the HCP.

The U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency (EPA), and Regional Water Quality Control Boards may also be invited to participate in this review committee as the Plan Participants desire to integrate Section 401 and Section 404 Clean Water Act compliance with the Endangered Species Act compliance under the HCP program.

Good Neighbor Policy

The Solano HCP requires the protection, acquisition, restoration, and management of lands in a coordinated preserve system to conserve Covered Species and Natural Communities. Such

conservation actions may result in the expansion (colonization or increased numbers) of some Covered Species populations on private lands adjacent to preserves, potentially restricting the activities of adjacent landowners.

In recognition of this potential effect, the Solano HCP adopts a “Good Neighbor Policy.” The Good Neighbor Policy provides for take of any incremental increases in the population of Covered Species beyond the baseline conditions of adjacent lands. The policy does not provide for take of existing populations or occupied habitat prior to establishing preserve conservation activities and, therefore, would not result in impacts relative to baseline conditions.

The Solano HCP Good Neighbor Policy provides Incidental Take Permit coverage for willing participants on an “opt-in” basis for all agricultural lands within 0.5 mile of any land or property acquired as habitat mitigation for the HCP, including institutional and commercial mitigation banks established and certified by SCWA for conservation purposes. This opt-in approach allows for landowners to willingly participate in the Plan. Those landowners that do not seek to participate would not be required to do so.

IX. Funding

Most regional habitat conservation plans are funded through a fee-based system. That is a base per acre fee is charged to all development projects and for other covered activities. This fee is then pooled to cover administrative costs, land or reserve acquisition and management, habitat restoration, long term monitoring, reporting, and other associated costs.

The Solano HCP has, for the most part, adopted a different approach that requires applicants to obtain mitigation for Covered Activities in accordance with the applicable conservation requirements identified in Section 6.0. Fees are still required; however, these fees address administrative costs associated with monitoring and reporting and implementation of broad, landscape-level conservation measures.

A fee will be charged for all development within the boundaries of the Plan Participants within the Plan Area. This fee will provide funding for regional and landscape perspective conservation measures under the HCP, such as:

- Reporting and Associated Administrative Fees – Whether third party applicants choose to seek coverage under the Solano HCP or not, the Plan Participants must still track, document, and report on all covered activities within their jurisdictions in order to demonstrate compliance with the incidental take permits terms and conditions.
- Unavoidable Landscape Conservation Measures – A number of conservation measures address mitigation for the ongoing and cumulative effects of urban runoff and wastewater discharge on water quality, public outreach and education, and problematic invasive species management that all projects/covered activities contribute to at some level.
- Monitoring and Adaptive Management – Under the Solano HCP, the Plan Participants are committed to a certain level of effectiveness monitoring and adaptive management. Funding

for these programs is based on full participation for all applicable covered activities. In addition, third-party applicants receive benefits for state and federal ESA compliance through the increased knowledge and data derived from these regional studies/programs.

The recommended application fee to address these various costs is about \$3,767 per acre (in 2009 dollars). This fee was derived by estimating the total costs for the administrative actions, landscape conservation measures, and long term monitoring and adaptive management and dividing that total by the estimated amount of development over the life of the HCP (Table11-2).