Chapter 7
Plan Implementation

7.1 Overview

This chapter describes the implementation of the Yolo HCP/NCCP, including the implementation structure, the responsibilities of the JPA and other participating entities, land acquisition, approval processes, data tracking and reporting, and regulatory and other assurances requested by the Permittees. In addition, the chapter outlines the process for changing or amending the HCP/NCCP.

7.2 Implementation Structure

The Yolo County Habitat/Natural Community Plan Joint Powers Agency (JPA) will coordinate implementation of the HCP/NCCP with the Permittees, the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and a range of stakeholders and other interests (Figure 7-1).

7.2.1 Permittees

The Yolo HCP/NCCP provides the basis for the issuance of regulatory authorizations, under the federal ESA and the California NCCPA, for the incidental take of federal and state-listed species resulting from covered activities (Chapter 3, *Covered Activities*). The entities that receive incidental take authorizations for activities covered under the Yolo HCP/NCCP pursuant to ESA section 10(a)(1)(B) and NCCPA section 2835 are referred to collectively as the "Permittees." Each of the Permittees will also be a signatory to the HCP/NCCP's Implementing Agreement.

The following entities are Permittees for the purpose of the Yolo HCP/NCCP and its regulatory authorizations:

- Yolo HCP/NCCP JPA
- County of Yolo
- City of Davis
- City of West Sacramento
- City of Winters
- City of Woodland

The Permittees will vest the responsibility for implementing the HCP/NCCP in the JPA. The JPA will oversee implementation of the HCP/NCCP on behalf of the Permittees. The Permittees, however, will ultimately be responsible for compliance with all the terms and conditions of the Permits and for the JPA's performance. Each entity will designate staff to advise the JPA on implementation of the HCP/NCCP. The Permittees, including the JPA, may enter into agreements individually, amongst themselves, or with other entities to designate responsibility for carrying out certain actions under the HCP/NCCP.

7.2.2 Joint Powers Agency

The JPA is responsible now for preparing the HCP/NCCP. Just prior to permit issuance, the JPA's role will shift from HCP/NCCP preparation to HCP/NCCP implementation. At that point the JPA will implement HCP/NCCP through its Board of Directors, Executive Director, and staff and consultants working at the direction of the Executive Director. Additional information about the role of the JPA in HCP/NCCP implementation is provided below in section 7.3 *Responsibilities of the JPA.*

7.2.3 Wildlife Agencies

On the basis of the HCP/NCCP, USFWS and CDFW will issue regulatory authorizations to the Permittees pursuant to the federal ESA and the NCCPA. Consistent with their authorities under these laws, USFWS and CDFW will retain responsibility for enforcing the terms and conditions of the permits and regulatory authorizations. USFWS and CDFW retain full responsibility to:

- Determine whether HCP/NCCP implementation is proceeding in compliance with the terms and conditions of the regulatory authorizations;
- Enforce the terms and conditions of the regulatory authorizations; and
- Modify, suspend, or revoke regulatory authorizations, consistent with the terms and conditions of the HCP/NCCP, the Implementing Agreement, the Permit, and applicable state or federal law.

USFWS and CDFW will also provide input on a range of implementation actions the JPA will carry out. The JPA will work closely with USFWS and CDFW to ensure ongoing compliance with the permits and authorizations.

7.2.4 Other Land and Water Management Agencies

Local land and water management agencies (such as parks departments, private land trusts, the Yolo County Cache Creek Resources Management Plan, etc.) other than the Permittees are also important to the HCP/NCCP's success. These agencies may acquire or manage HCP/NCCP reserves on behalf of the JPA. Further, these land and water management agencies may own land adjacent to HCP/NCCP reserve lands where coordinated management and monitoring may benefit both entities. The JPA will invite land and water managers from relevant local organizations to coordinate closely with the JPA to ensure that management actions are compatible and consistent across the region. The JPA can achieve significant cost savings by undertaking joint management actions with local land and water management agencies that are consistent with the HCP/NCCP.

Examples of partnerships that could occur with identified local funding partners include the following:

- City of Davis. The Davis open space tax (see Section 8.4.2.1) provides funding for acquisition of open space lands. Where it is possible for the City to utilize the HCP/NCCP conservation easement template (Appendix K) for acquisitions, those lands can be counted acre-for-acre towards the HCP/NCCP conservation strategy. Activities other than land or easement acquisition that are paid for with open space tax funds and consistent with the Yolo HCP/NCCP conservation strategy will also count toward the local share of HCP/NCCP implementation.
- Cache Creek Resources Management Plan (CCRMP). The Yolo County CCRMP (see Section 8.4.2.2) provides a policy framework, regulations, and an implementation plan for the

management and restoration of lower Cache Creek. Where CCRMP implementation actions (e.g. invasive species removal) are consistent with the HCP/NCCP conservation strategy, that funding and those actions can be counted towards implementation of the Plan. Moreover, where the County is willing to place a conservation easement consistent with the HCP/NCCP conservation easement template (Appendix K) on County CCRMP open space land and manage that land pursuant to the HCP/NCCP management template, the JPA can provide complete or partial operation and management in perpetuity and the value of the easement will count toward the JPA's local share of HCP/NCCP implementation.

- Solano County Water Agency (SCWA)/Lower Putah Creek Coordinating Committee. The SCWA (see Section 8.4.2.3) receives funding through a legal settlement that is used for staff and activities to restore lower Putah Creek. Where these activities are consistent with the HCP/NCCP conservation strategy, that funding and those actions can be counted towards implementation of the Plan. The SCWA operates a native plant nursery, for example, to grow plants for its restoration projects. If plants from that nursery were used for projects consistent with the HCP/NCCP conservation strategy activities, the value of those plants and/or labor and materials associated with establishing them at the nursery may be counted towards the HCP/NCCP conservation strategy.

In addition, new partnerships could be established. For example, the Yolo County Parks Department manages large open space parks owned by Yolo County. Where the County is willing to place a conservation easement consistent with the HCP/NCCP conservation easement template (Appendix K) on County open space land and manage that land pursuant to the HCP/NCCP management template, the JPA can provide complete or partial operation and management in perpetuity.

7.2.4.1 HCP/NCCP Advisory Committee

In recognition of the need to have broad community participation during preparation of the HCP/NCCP, the JPA Board of Directors formed an Advisory Committee with membership representative of the varied interests in Yolo County, including the environment, landowners, agriculture, member agency representatives, and the community-at-large. The JPA anticipates these stakeholders may be interested in continuing to participate and provide input in HCP/NCCP implementation. As a result, the JPA will continue the Advisory Committee as a stakeholder group throughout the implementation process.

Advisory Committee input will ensure continuity between development of the HCP/NCCP and implementation of the HCP/NCCP and ensure the timely, efficient, and proper implementation of the commitments reflected in the HCP/NCCP. Membership in the Advisory Committee will continue to be voluntary and members will not be paid. The Advisory Committee will continue to consist of a range of individuals and entities with an interest in HCP/NCCP-related matters. Members of the Committee will include, but will not be limited to:

- Land developers and others seeking use of the Permits under the HCP/NCCP;
- Conservation interests;
- Agricultural interests,
- Landowner representatives; and
- Other stakeholders whose assistance will increase the likelihood of the success of HCP/NCCP implementation.

The Advisory Committee process will complement, but not substitute for, ongoing collaboration and communication between stakeholders and the JPA, Permittees, the Board of Directors, USFWS, and CDFW. The JPA will organize, help convene, and provide support for the Advisory Committee and its proceedings. The JPA will convene the Advisory Committee at least twice a year; however, the JPA Executive Director may also convene the Advisory Committee as needed to exchange information and discuss current issues. Stakeholders will have the opportunity to inquire about implementation matters and make recommendations concerning pending decisions. All Advisory Committee meetings will be open to the public, and the JPA will publish notice of the upcoming meetings on the HCP/NCCP Website or other appropriate public forum.

For the benefit of the Advisory Committee members and the general public, the JPA will provide information and briefings regarding HCP/NCCP implementation. To further facilitate access to information and promote transparency in decision-making, the JPA will also maintain a publicly available data base of key documents and information, such as annual implementation reports, work plans, and budgets (Section 7.11, *Data Tracking and Reporting Reporting*).

7.2.4.2 Science and Technical Advisory Committee

The Science and Technical Advisory Committee (STAC) will provide scientific and technical guidance to the JPA on the suitability of potential sites for easements and mitigation (e.g., species biology, species habitat requirements, and habitat restoration actions). The STAC may also advise the JPA on other issues as requested by the Executive Director, such as site-specific management and monitoring plans, habitat management and/or enhancement opportunities.

The STAC will be composed of four to six biologists with expertise on the habitat types and species covered by the HCP/NCCP, and preferably with experience with local conservation planning. Between the members, the STAC will have a diversity of species expertise.

The primary role of the STAC is to assess and evaluate prospective conservation sites (e.g., sites proposed for mitigation receiving sites or other reserve system lands. Specific activities of the STAC include the following:

- Conduct a field assessment of prospective conservation sites
- Assess and rank the value of the prospective conservation sites based on ecological, land use, and management parameters, including evaluation of the extent to which the site is consistent with the HCP/NCCP.
- Develop recommendations for site-specific management, restoration, and monitoring.
- Prepare a site assessment report that includes a recommendation for potential acquisition.
- Coordinate as requested with the JPA to provide input, guidance, and recommendations on conservation actions, land use issues, and species needs.

The STAC will have a chair, whose responsibilities will include:

- convening the committee at the request of JPA staff
- organizing site visits
- assigning leads for completing site evaluations based on expertise
- ensuring timely reporting by the committee on proposed sites.

The STAC's role in HCP/NCCP implementation is advisory only. The STAC will make recommendations to the Executive Director, who in turn will make recommendations to the JPA Board. The JPA Board will retain authority to approve all acquisitions and individual mitigation receiving sites. As discussed in Chapter 5, USFWS and CDFW will approve all lands acquired for conservation.

7.2.5 Special Participating Entities

Entities not subject to the jurisdiction of the Permittees may conduct or initiate projects or ongoing activities within the permit area that may affect listed species and that may require take authorization from USFWS or CDFW. Such organizations may include existing or future school districts, water districts, irrigation districts, transportation agencies, local park districts, geologic hazard abatement districts, other utilities or special districts that own land or provide public services, or individuals with activities that may result in take but that do not require a discretionary permit. These public agencies or individuals, known as *Special Participating Entities* (SPEs), can request coverage under the HCP/NCCP during implementation. Such coverage will provide take authorization for their projects.

Chapter 4, Section 4.2.1.3, *Projects Proposed by Special Participating Entities*, describes the application, review, and approval process for SPEs to be covered under the HCP/NCCCP.

As described in Chapter 4, *Application Process and Conditions on Covered Activities*, some management and monitoring activities will result in take of the covered species, even if the net result of the actions are beneficial (e.g., prescribed burning, handling species to identify or mark them). Any special district or other agency that carries out such activities on behalf of the JPA will require take authorization. If the special district or agency is either a Permittee itself, or carries out management and monitoring activities on Yolo HCP/NCCP preserves as a contractor of the JPA, it will receive take authorization under the HCP/NCCP permits. Management or monitoring agencies that are not a Permittee or a contractor of the JPA can secure take authorization as an SPE.

7.3 Responsibilities of the JPA

The JPA will be the Implementing Entity for the Yolo HCP/NCCP and will be responsible for implementation of the HCP/NCCP through its Board of Directors, Executive Director, and staff and consultants working at the direction of the Executive Director (Figure 7-2). The JPA will have day-to-day responsibility for plan implementation and oversight and will coordinate implementation actions with Permittees, USFWS and CDFW, the Advisory Committee, and other interests. The JPA, under the direction of the JPA Board of Directors, will implement, coordinate, oversee, and report on all aspects of HCP/NCCP implementation. The JPA have the capacity to hire staff and enter into contracts to implement the HCP/NCCP.

The JPA will have responsibility for the implementation of a broad range of actions, including:

- Oversight and coordination of administration of program funding and resources;
- Preparation of annual and 10-year reports, work plans, and budgets;
- Establishment of procedures to implement plan actions;
- Oversight of and engagement in the implementation of conservation measures;

- Management of the monitoring and research and adaptive management programs;
- Monitoring and enforcement of HCP/NCCP conservation easements;
- Implementation of the public outreach program; and
- Fulfillment of compliance monitoring and reporting requirements.

The following sections describe the functions and responsibilities of the JPA in implementing the HCP/NCCP. Some or all of these job functions may be performed within the JPA itself through internal staff. Alternatively, the JPA may partner with Permittees to provide some of these staff functions through their own agencies. The JPA may also hire contractors or consultants to provide many of these functions, under the direction of the JPA Executive Director.

7.3.1.1 The JPA Board of Directors

As stated in Section 1.3.1, *Role of the JPA*, the JPA Board of Directors consists of elected representatives appointed by Yolo County and the incorporated Cities of Davis, West Sacramento, Winters, and Woodland. The seven-member board is comprised of two members from Yolo County and one each from the four incorporated cities and the University of California, Davis. The Board of Directors' current responsibility is to assist in the planning and administration of the HCP/NCCP and to facilitate interim acquisition of conservation easements to preserve foraging habitat for Swainson's hawk. During plan implementation, the HCP/NCCP will encompass Swainson's hawk mitigation responsibilities. The JPA Board of Directors will also be responsible for:

- Selection, supervision, and evaluation of an Executive Director;
- Approval and oversight of the Yolo HCP/NCCP;
- Financial oversight as specified in Board-approved administrative procedures and policies;
- Approval of the annual work plan and budget, including the anticipated JPA actions associated with the adaptive management program and the habitat acquisition and restoration projects. The Board's review of the work plan and budget will focus primarily on the programmatic aspects of the proposed actions.
- Coordination of regular meetings. The Board of Directors will hold a minimum of two meetings per year. The Chair of the Board or three members of the Board can convene a meeting. The Executive Director may also convene the Board as needed to review issues that arise in the implementation of the annual work plan and budget, as well as the annual audit. The Board of Directors meetings will be public as provided by applicable law.
- Approval of all land acquisition or land provided by project proponents in lieu of HCP/NCCP fees (see Section 7.5.9, *Land Dedication In Lieu of Development Fee*)
- Approval of minor modifications to the Plan or the submittal of an application for a formal Plan amendment, as described in Section 7.8, *Modifications to the Plan*.
- Review of challenges by project proponents to the mapped extent of land cover types exempt from the land cover fee or wetland fee.
- Review of appeals made by Permittees of HCP/NCCP fee determinations.

7.3.1.2 The JPA Executive Director and Staff

The Executive Director will organize, convene, and provide support for the Board of Directors and its proceedings, and will be responsible for day-to-day administration and implementation of the HCP/NCCP. The Executive Director will work with JPA staff to implement the HCP/NCCP conservation measures (including local conservation measures), including those related to protection, restoration, and management of habitat throughout the life of the HCP/NCCP. The Executive Director will work with the JPA staff to implement the adaptive management program; monitoring, data collection, and scientific research efforts; annual and five-year work plans, budget, and report preparation; and the public outreach process. To ensure the commitments reflected in the HCP/NCCP are carried out in a timely and efficient manner, the Executive Director (with JPA Board of Directors approval) will institute procedures to adequately address planning, budgeting, sequencing, oversight, and scheduling needs related to plan implementation. These procedures include:

- Preparation of the annual work plan and budget.
- Coordination of annual audit, including reports to the JPA Board.
- Regular reporting to the JPA Board on the status of plan implementation, financial oversight, and the budget.
- Regular briefings of member agency governing boards on the status of plan implementation.
- Regular communication with designated wildlife agency representatives.

7.3.2 Real Estate Activities

The JPA conducts relevant financial and legal analyses to guide selection of parcels for the reserve system, and conducts or manages appraisals and transactions. The JPA will need to either hire or contract with a specialist with expertise in real estate law, zoning, and local regulations to fulfill the fiduciary duties of the JPA for acquisition of properties. This specialist will work in coordination with the Executive Director and JPA Counsel to acquire properties. Existing county and city agencies may already have staff with these skills; the JPA may partner with such agencies to obtain these skills externally as an in-kind service. The JPA may also hire contractors or consultants to provide this function under the direction of the JPA Executive Director.

7.3.3 Grant Administration

The JPA is responsible for managing all grants, contracts, and other funding sources during HCP/NCCP implementation. The JPA must establish accounting procedures and methods for disbursing funds and actively pursue and acquire additional funding for HCP/NCCP implementation. The JPA will write grant applications to secure these funds. Existing agencies may already have staff with these skills; the JPA may partner with such agencies to obtain these skills externally. For any grants received, the JPA must also monitor, track, and report to the granting agency according to the grant requirements.

7.3.4 Budget Analysis

The Executive Director will develop, propose, and administer budgets for general program administration. The Board of Directors will approve annual budget and provide oversight of JPA

finances. Specific responsibilities will include: developing and monitoring budgets; processing invoices; managing financial reserves; identifying cost savings; and managing administrative contracts (e.g., liability insurance). The JPA will establish processes to ensure timely implementation and proper oversight of annual budgets and related expenditures.

7.3.5 GIS/Database Maintenance

The JPA will use GIS or other equivalent spatially-explicit database systems to collect, store, and utilize relevant data necessary for HCP/NCCP implementation. The JPA will maintain these data systems to track compliance and to guide reserve design and monitoring and adaptive management programs. For example, the JPA must be able to query the database to summarize take and conservation by year and cumulatively (by land cover types, and modeled habitat for covered species). The JPA will track all data related to the progress of meeting HCP/NCCP goals and objectives. The JPA may also hire contractors or consultants or use staff from a local jurisdiction to provide this function under the direction of the Executive Director. Data must be made available to USFWS and CDFW at any time.

7.3.6 Reserve Management and Monitoring

The JPA will direct the management of land acquired for the reserve system and coordinate with managers of other protected areas to form a biologically cohesive network of protected lands in the Plan Area. These activities will include regular patrol, trash removal, fence/gate installation and repair, road maintenance, and other necessary activities.

A Permittee may perform some conservation actions that occur either in or outside the reserve system. The JPA will coordinate with these Permittees and other local agencies to conduct conservation actions that it cannot perform itself or would perform less efficiently.

The JPA is responsible for developing reserve unit management plans for all units of the reserve system to guide site-specific management. The JPA may hire contractors or consultants to provide this function under the direction of the JPA Executive Director. The JPA will develop, or will oversee contractor development of, site restoration plans for each site where restoration would occur. These plans will include designs and construction drawings. The JPA will also be responsible for interim management of newly protected lands prior to completion of these reserve unit management plans.

The JPA is responsible for designing and implementing the monitoring and adaptive management program described in Chapter 6, *Conservation Strategy*. The Permittees and the JPA are responsible for all management and monitoring on the reserve system after the permits expire (i.e., in perpetuity).

7.3.7 Public Outreach and Education

The JPA will conduct outreach to local private and public landowners and residents that will include education on the management goals and objectives, as well as implementation techniques. The JPA may also hire contractors or consultants to provide this function under the direction of the JPA Executive Director. The focus of public education and outreach activities will be to raise landowner and public awareness of reserve management goals, actions and methods, and how the public can support them. To that end, the JPA will ensure development and management of a public web site

for the HCP/NCCP. Where appropriate, the JPA will develop and publish guidelines for local landowners and provide education programs to assist in the implementation of these guidelines. The JPA will coordinate public education and outreach with other local agencies providing similar services in the study area.

7.3.8 Legal and Financial Services

The JPA, in coordination with the Board of Directors, USFWS, CDFW, and other appropriate public agencies, will help direct efforts to defend against legal challenges to the HCP/NCCP or its associated state and federal authorizations. As necessary, the JPA may also provide funding for legal counsel, or use local agencies' legal counsel, to address the range of legal issues associated with implementation, including: defense against litigation related to the HCP/NCCP, liability associated with land acquisition and related matters, disputes arising out of contractual agreements, and general, routine in-house legal matters.

Financial analysis assistance will be required periodically to review the program's cost/revenue balance and ensure that development fees are adjusted with changing land costs and inflation.

7.3.9 Consultants and Contractors

The JPA will retain consultants to meet any technical, scientific, or other staffing needs that cannot be effectively or efficiently addressed through in-house staff due to insufficient expertise or availability. It is expected the JPA will utilize consultants more heavily during the early stages of HCP/NCCP implementation, becoming less necessary as the JPA develops and becomes more familiar with the reserve system.

7.3.10 Responsibilities of the Local Jurisdictions

The local jurisdictions with land use planning and development authority participating in this HCP/NCCP (County of Yolo; City of Davis; City of Woodland; City of West Sacramento; and City of Winters) have a responsibility to assist with implementation because of their local government authorities. As Permittees and members of the JPA, the participating local jurisdictions will support HCP/NCCP implementation by:

- Receiving, reviewing, and approving applications for take authorization under the HCP/NCCP from private project proponents according to the procedures and requirements described in Chapter 4, *Application Process and Conditions on Covered Activities*.
- Requiring private project proponents to pay HCP/NCCP fees established by the JPA as described in Chapter 8, *Cost and Funding*.
- Quarterly transfer of the HCP/NCCP fees to the JPA to support HCP/NCCP implementation. All fees paid must be transferred or in the process of transfer (e.g., the member agency has notified the JPA that the fee has been paid and the transfer process has been initiated) within 15 days of the end of the quarter in which the fee was paid.
- Periodic reporting, at least quarterly, to the JPA the applications and approvals for take authorization under the HCP/NCCP, including take associated with projects exempt from fees and/or conditions of this HCP/NCCP.
- Hearing appeals of fee determinations for projects within their jurisdictions.

- Monitoring the compliance with conditions on covered activities on project sites.
- Participating in the JPA's Advisory Committee.
- Coordinating closely with the JPA regarding Plan implementation.

7.4 Local Implementing Ordinances

To implement the HCP/NCCP on the local level, each participating jurisdiction must adopt an implementing ordinance that will reference the permits, Implementing Agreement, and HCP/NCCP, and the jurisdiction's obligations under the HCP/NCCP. Ordinances will be considered for adoption by each jurisdiction no later than 120 days after execution of the Implementing Agreement (Appendix F) and issuance of the last permit by USFWS and CDFW.

Once issued, the permits will be contingent upon the adoption of local implementing ordinances in Davis, Woodland, West Sacramento, Winters, and Yolo County. The Implementing Agreement and permits will specify that the permit is contingent upon the adoption of these implementing ordinances.

7.5 Land Acquisition

The JPA is responsible for ensuring acquisition of land for the reserve system in accordance with the requirements in Chapter 6, *Conservation Strategy*. As described in Chapter 6, all land for the reserve system must be acquired by Year 45 of the permit term.

7.5.1 Acquisition Credit

For inclusion into the reserve system, newly protected lands must meet the following criteria.

- Contribute to meeting the goals and objectives of the Plan and overall success of the HCP/NCCP as described in Chapter 6, *Conservation Strategy*.
- Have a location, configuration, and quality consistent with the reserve design and assembly principles in Chapter 6, Section 6.4.1, *Establish Reserve System*.
- Permanently protect the biological functions and values that contribute to the HCP/NCCP. Permanent protection must be ensured through a conservation easement consistent with the requirements of Section 7.5.5, *Conservation Easements* and the conservation easement template in Appendix K, or by some other permanent dedication of land to the reserve system."
- Have no hazardous materials or property encumbrances that conflict with HCP/NCCP goals and objectives.

7.5.2 Acquisition Process

The process for acquiring land in fee title or through conservation easements is represented by Steps 1 through 14 below. These steps are representative of the process for a typical transaction; the process, however, may vary based on the specific characteristics of each transaction. Regardless, certain elements (such as wildlife agency participation) will be integral to each acquisition. In addition, the JPA Board or Executive Director may modify this process as needed.

The JPA may perform these acquisition steps on its own an acquisition partner (e.g., a local land management agency) could perform these steps. In addition, landowners interested in selling easements or land in fee title may initiate the acquisition process.

1. The JPA initiates the acquisition process by requesting applications from landowners interested in selling easements or land in fee title on a quarterly basis. The JPA may also contact landowners with land potentially important to the reserve system and invite them to apply, or approach a property owner with a proposal to acquire land through conservation easement or fee title.
2. The JPA reviews applications for consistency with the Yolo HCP/NCCP and requests additional information, as necessary. The JPA screens the applications to make sure they are complete and consistent with the framework of the acquisition strategy (e.g., within the boundary of the reserve system, lack other inconsistent property easements or land uses, etc.).
3. The JPA provides applications to the STAC for review, along with the necessary pre-acquisition assessment of land cover types, habitat for covered species, restoration potential, and presence of covered species based on Plan data and other available data sources. The STAC will conduct an onsite evaluation, coordinate with the landowner for additional information, and prepare an evaluation report using a standardized report template. The property evaluation report will include an acquisition recommendation to the JPA based on the suitability of the property to meet covered species conservation goals and objectives identified in the Conservation Strategy.
4. The JPA will brief the wildlife agencies on the land acquisition proposal and provide the STAC with an evaluation of the property. The wildlife agencies will review and approve all acquisitions.
5. The STAC will provide recommendations to the JPA Executive Director to consider. The Executive Director will make recommendations to the JPA Board. After JPA Board approval of recommended sites, the Executive Director will seek approval from the wildlife agencies.
6. Using information from the initial screening and STAC evaluation and recommendation, the JPA will make a preliminary determination regarding the potential acquisition (pending further review and approval from the wildlife agencies). JPA staff arrange confidential meetings with the wildlife agencies to discuss the potential acquisition based on the JPA screening, the STAC evaluation and recommendation, and consistency with conservation goals and objectives.
7. The JPA and the landowner will reach agreement on easement terms and any necessary management prior to purchase. When possible, development of a management plan should be completed before final purchase. If the easement terms vary greatly from the template, the wildlife agencies will review these modifications.
8. JPA staff will examine all leases that apply to the property for consistency with HCP/NCCP goals and objectives. Inconsistent leases may be terminated or modified to conform to the HCP/NCCP. The JPA may choose not to purchase a site with incompatible leases or management actions until the leases expire, or if purchased, the lease area will be excluded from the reserve system until these leases expire.
9. The JPA conducts an appraisal of property value (easement or fee) and water rights consistent with legal requirements for acquisition of public lands.
10. The JPA and landowner negotiate a fair-market price and easement conditions, if applicable.

11. The JPA obtains concurrence from the wildlife agencies for the land acquisition. If the wildlife agencies have not already approved the acquisition (step 5), the wildlife agencies have 30 working days to respond to a request for approval once all relevant and available information has been provided to them. If the JPA does not receive a response within 45 working days after written notification of intent to purchase, the JPA will assume approval.
12. The JPA completes the acquisition, including final approval by the JPA Board of relevant easement documents.

7.5.3 Stay-Ahead Provision

The conservation strategy of an NCCP must be implemented at or faster than the rate at which loss of natural communities or covered species habitat occur, so that conservation always stays ahead of effects and rough proportionality is maintained between adverse effects on natural communities or covered species and conservation measures (California Fish and Game Code 2820(b)(3)(B)). The rough proportionality standard of the NCCP Act states that,

> "…implementation of mitigation and conservation measures on a plan basis is roughly proportional in time and extent to the impact on habitat or covered species authorized under the plan. These provisions shall identify the conservation measures, including assembly of reserves where appropriate and implementation of monitoring and management activities, that will be maintained or carried out in rough proportion to the impact on habitat or covered species and the measurements that will be used to determine if this is occurring" (California Fish and Game Code 2820(b)(3)(D)(9))."

Similarly, the ESA also requires that HCPs minimize and mitigate the impacts of the taking to the maximum extent practicable (ESA Section 10(a)(2)(B)(ii)). When conducting their jeopardy analyses, USFWS will consider whether the mitigation proposed is scientifically and rationally related to the impact of the taking. To make findings that the proposed impacts are mitigated to the maximum extent practicable, USFWS will consider temporal losses (if any) resulting from the time of impact relative to the time of mitigation.

The stay-ahead provision requires the JPA to ensure the amount of each natural community conserved, restored, or created by the JPA as a proportion of the total requirement for each natural community (Tables 5-2a, *Newly Protected Lands Commitments* and 5-2b, *Pre-permit Reserve Lands Commitments*) is roughly proportional to the impact on that natural community as a proportion of the total impact expected by all covered activities (Table 6-4, *Natural Community Loss*). If 25% of the expected loss of grasslands has occurred, for example, then at least 25% of the required land acquisition for grasslands must also have occurred.

To provide flexibility during implementation, the JPA may fall behind by a maximum of 10% of its conservation strategy acreage requirements (conservation overall and by each applicable land cover type) and still be in compliance with the stay-ahead provision for this HCP/NCCP. This deviation accounts for the likely pattern of infrequent land acquisition of large parcels that will allow the JPA to jump far ahead of impacts with one acquisition. The JPA is allowed a 10% deviation below the required trajectory of conservation. Once the permits end (i.e., through expiration, suspension, revocation), however, the Permittees will be held responsible for any outstanding requirements in the permits, Implementing Agreement, and HCP/NCCP (see the Implementing Agreement for a detailed discussion).

7.5.3.1 Measurement of Stay-Ahead Provision

During the first year after permit issuance, the JPA will be establishing its structure, collecting initial HCP/NCCP fees, and actively pursuing land acquisition deals with willing landowners. To allow time for these start-up tasks to occur, the stay-ahead provision will only apply two years after the last local ordinance takes effect. After two years of HCP/NCCP implementation, the JPA must measure its compliance with the stay-ahead provision by the following method. To measure compliance with the stay-ahead provision, the amount of each natural community conserved, restored, or created as a proportion of the total requirement by natural community must be equal to or greater than the impact on the natural community as a proportion of the total impact expected by all covered activities. For example, if 40% of the total expected impacts on the grassland natural community have occurred, then at least 40% of the conservation of the collective grassland natural community must also occur. This method of aggregating land cover types into natural communities only applies to the measurement of the stay-ahead provision. Requirements for acquisition by each natural community [Tables 5-2a, *Newly Protected Lands Commitments* and 5-2b, *Pre-permit Reserve Lands Commitments*] still apply and must be met by Year 45 of the permit term or by Year 40 if restoration or creation are to occur. This aggregation method provides incentives and flexibility to the JPA to acquire, restore, or create the most sensitive and difficult land cover types first within each natural community, even if impacts to these land cover types have not yet occurred.

Land acquired or funded in full or in part by state or federal agencies to contribute to species recovery under this HCP/NCCP will also contribute to compliance with the stay-ahead provision once enrolled in the reserve system. A portion of the HCP/NCCP assumes funding by the state and federal governments. The JPA must recognize, however, that funds from public agencies will be available on budget cycles, and subject to administrative processes, that may or may not correspond to the timing of covered activities.

The JPA will monitor the status of the stay-ahead provision throughout HCP/NCCP implementation. The wildlife agencies will also evaluate the stay-ahead provision on an annual basis. The JPA will report the status of the stay-ahead provision in each annual report, beginning with the Year 2 annual report (see Tables 7-1, *Implementation Tasks* and 7-2, Compliance Deadlines). As long as the pace of conservation measure implementation (i.e., preservation, restoration, or creation) does not fall behind the pace of covered activity impacts by more than 10%, the JPA will meet the stay-ahead provision.

If the stay-ahead provision is not met, the JPA and the wildlife agencies will meet and confer within 30 days of the annual report to assess the situation. If the wildlife agencies find that the HCP/NCCP is out of compliance with the stay-ahead provision, the wildlife agencies will determine if the HCP/NCCP has maintained rough proportionality. If any of the wildlife agencies issue a notification to the JPA that rough proportionality has not been met, then the wildlife agencies and the JPA will meet to develop and implement a mutually agreeable plan of action to remedy the situation and achieve compliance with the stay-ahead provision.

Table 7-1. Schedule for Major Implementation Tasks

Time Period	Tasks and Milestones (**Key Task Tied to Permit Compliance; see Table 7-2)	Responsible Party[1]
Prior to Permit Issuance (i.e., Year 0)		
	Complete final versions of Implementing Agreement and Permittee ordinances in preparation for permit issuance.	JPA
	Where feasible, apply for state/federal grants for land acquisition (after publication of Draft HCP/NCCP).	JPA
	Commence the recruitment process for JPA key staff (if possible, to allow early implementation).	JPA
	Establish Science and Technical Advisory Committee.	JPA
	Develop template pre-acquisition assessment and protocols prior to the first land acquisition.	JPA
By Permit Issuance (Day 1)		
	Prepare initial budget for JPA.	JPA
Post-Permit		
0–6 months	Hire JPA key staff (if not completed prior to permit issuance). This task will be ongoing.	JPA
	Train JPA staff to prepare, review, and process HCP/NCCP applications. This task will be ongoing.	JPA
	Provide each Special Participating Entity with detailed maps of fee zones and land cover types so they can process and evaluate HCP/NCCP applications.	JPA
	Prepare and review applications for public sector activities under the HCP/NCCP to be submitted to the JPA. This task will be ongoing.	JPA
	Where feasible, apply for state/federal grants for land acquisition. This task will be ongoing.	JPA
	Establish an appeals process for HCP/NCCP fee determinations. This process will be consistent with the typical appeals process for each Permittee for development projects.	JPA
	Collect HCP/NCCP fees. This task will be ongoing.	Cities and County, JPA
6 months–1 year	Investigate restoration and creation opportunities on existing open space and newly acquired land to ensure compliance with Stay-Ahead provision. This task will be ongoing.	JPA, Permittees
	Establish and maintain database to track permit compliance (e.g., land acquisition and HCP/NCCP impacts). This task will be ongoing.	JPA, Permittees
1–5 years	Continue to hire or contract out JPA technical and operational staff as reserve system expands.	JPA
	**Update fees annually according to Chapter 8. Provide new fee schedule to Permittees (the JPA will give 30-day notice to Permittees prior to fees going into effect). This task will be ongoing.	Cities and County, JPA
	At intervals specified in Chapter 8, perform financial assessment. This task will be ongoing.	JPA
	**Submit annual report to the wildlife agencies. This task is performed on an annual basis by March 15 of every year for the previous fiscal year (July 1 to June 30).	JPA

Time Period	Tasks and Milestones (**Key Task Tied to Permit Compliance; see Table 7-2)	Responsible Party[1]
	Conduct annual meeting to report on implementation progress of HCP/NCCP. This task will be ongoing.	JPA
	Prepare reserve unit management plans as described in Chapter 6. ** Plans must be prepared within 5 years of the first parcel acquired in each reserve unit and updated as needed, but reviewed no less than every 5 years.	JPA
	Initiate adaptive management and monitoring of biological resources. This task will be ongoing.	JPA
	Hire science advisor to provide technical advice to JPA on monitoring and adaptive management. This task will be ongoing.	JPA
	Initiate or continue management and monitoring in reserve system.	JPA
	**Continue to acquire land to assemble Reserve System and meet stay-ahead provision requirements (by Year 2). This task will be ongoing; however, the JPA must complete all land acquisition by Year 45.	JPA, Permittees
	Begin design of habitat restoration and creation and additional environmental compliance for restoration and creation. This task will be ongoing.	JPA
	Implement land cover restoration and creation projects described in Chapter 6. This task will be ongoing; however, the JPA must complete construction of all habitat restoration and creation projects for land-cover types and plant occurrences by Year 40.	JPA
	Open selected reserves to public access according to reserve unit management plans. Develop enforcement procedures for the reserve system before newly acquired land is open to public access.	JPA or applicable local agencies
	Prioritize implementation of studies described in Chapter 6.	JPA
	Update land cover map with most recent aerial photograph (at least every 5 years).	JPA
	Develop a wildfire local operating agreement for the reserve system with Cal Fire and with any other firefighting agency that has responsibility for the reserve system lands within 4 years of permit issuance.	JPA
6–50 years	Finalize post-permit implementation structure prior to permit expiration. [Chapter 8, Section 8.12]	JPA
More than 50 years	Continue adaptive management and limited monitoring of biological resources to ensure management actions are working.	JPA

[1] The responsible party is the entity that must ensure the task or milestone is achieved. In many cases, the responsible party may delegate implementation of the task to a third party (e.g., a Permittee, landowner, or consultant).

Table 7-2. Key Deadlines for HCP/NCCP Compliance

Key Implementing Entity Task With Deadline Tied to Permit Compliance[1]	Deadline(s)	Deadline Flexibility
Key Initial Deadlines		
Cities and County will consider the adoption of local ordinances to implement HCP/NCCP	Within 120 days after the execution of the Implementing Agreement and the issuance by the Wildlife Agencies of the last permit	None
Development of strategic plan to outline activities over next 5-10 years	With one year of issuance by the wildlife agencies of the last permit	At the discretion of the JPA Board
Enroll pre-permit reserve lands	Within 5 years of issuance by the wildlife agencies of the last permit	At the discretion of the JPA Board
Key Annual Deadlines		
Update fees annually	Date to be determined by the JPA within the first 6 months of Plan implementation	Fee update can be delayed if the federal indices are delayed
Submit annual report to wildlife agencies with all required information	By March 15 of each year for the previous fiscal year (July 1 to June 30)	Extensions available with prior approval by wildlife agencies
Review and approval of annual report and work plan by JPA Board	Should be submitted to JPA Board with annual budget	At the discretion of the JPA Board
Key Periodic or One-Time Deadlines		
Prepare reserve unit management plans	Within 5 years of first acquisition in each reserve unit	Extensions available with prior approval by wildlife agencies
Acquire and enhance land; restore and create habitat in compliance with the Stay-Ahead Provision	Applies 2 years after the last ordinance takes effects and is measured annually thereafter	10% deviation below stay-ahead requirements is allowed
Update strategic plan	Every 5 years	At the discretion of the Board
The JPA will work with the wildlife agencies to conduct a formal and complete review of progress toward building the reserve system	Every 10 years	None
Complete construction of all restoration and creation projects for land cover types	Year 40	Success criteria will be proposed in reserve management plans and restoration/creation designs. Success criteria in some cases may not need to be demonstrated by year 40, but would have to be demonstrated by the end of the permit term. The wildlife agencies would review these proposals as they are submitted during HCP/NCCP implementation

Key Implementing Entity Task With Deadline Tied to Permit Compliance[1]	Deadline(s)	Deadline Flexibility
Acquire all land for the reserve system according to the acreage requirements in Chapter 6 by land cover type, conservation analysis zone, and landscape linkage	Year 45	Extend by up to two years with wildlife agency approval if reserve system is within up to 5% of completion
Acquire modeled habitat for covered species in the reserve system according to the requirements in Chapter 6	Year 45	Extend by up to two years with wildlife agency approval if reserve system is within up to 5% of completion
Develop a wildlife agency-approved plan to address the continuing obligations of the JPA beyond the permit term	Year 45-47	None

7.5.3.2 Counting Land Acquisition and Restoration toward Commitments

The criteria for incorporating land into the reserve system are described in Chapter 6, *Conservation Strategy*. Land may be counted toward HCP/NCCP requirements and the stay-ahead provision once it is enrolled into the reserve system (see Section 6.4.1.7 *Enrolling Public and Easement Lands into the Reserve System*). Existing and newly constructed infrastructure (e.g., fences, watering facilities) within the reserve system does not count toward the land cover type land acquisition requirements described in Chapter 6.

Compliance with natural community restoration will be measured when construction is completed. If at the conclusion of the monitoring period the project fails to support the amount of restored land cover for which the JPA initially claimed credit, the JPA will adjust the credit to the actual amount of restored land cover type present on the site.

The JPA must document the conditions of the restoration site prior to initiating restoration to determine whether the project is enhancing or restoring the land cover type. If the site is only being enhanced and not restored (that is, if the intended natural community or covered species habitat is already present) as determined by a qualified biologist, then the enhanced land only counts toward the protection commitment. If the site meets the definition of restoration, then the restored acres will count toward the restoration commitment. The area restored will only count toward the restoration commitment, and will not count toward the protection commitment. Restoration of a site will be presented to the Science and Technical Advisory Committee and the wildlife agencies. The wildlife agencies will review and approve any restoration projects.

A key requirement of the land acquisition strategy is landscape connectivity and connections to existing open space. Land acquired early in the permit term may be isolated from existing open space until future acquisitions can connect it. Such acquisitions are eligible for credit under the Plan and for the stay-ahead provision.

Some rights-of-way or utility easements are maintained or used regularly and may not be appropriate for receiving credit towards land acquisition requirements because of the frequent

disturbance that occurs within these areas. Where land contemplated for the reserve system is encumbered by rights-of-way or easements, it is the responsibility of the JPA to document the frequency and type of use in these rights-of-way or easements and to justify whether land acquisition credit should be applied in these areas.

7.5.3.3 Stay-Ahead Reporting and Process for Addressing Deficits in Land Conservation

As discussed in Section 7.5.3.1 *Measurement of Stay-Ahead Provision* above, if the stay-ahead provision is not met, the JPA and the wildlife agencies will meet to develop and implement a mutually agreeable plan of action to remedy the situation and achieve compliance with the stay-ahead provision. The mutually agreeable plan of action may include a range of potential solutions, including those listed below.

- Wait for key pending land acquisition deals to close that will bring the HCP/NCCP into compliance with the stay-ahead provision.
- Speed delivery of funding sources or partnerships that will enable more land acquisition to bring the HCP/NCCP into compliance with the stay-ahead provision, including hiring consultants with project management, grant-writing or real estate expertise.
- More aggressively solicit interest from key landowners who may be willing to sell land to the JPA that would enable compliance with the stay-ahead provision.
- Change the acquisition strategy, such as more direct acquisition of land by the JPA rather than relying on partnerships, shifting the JPA's budget allocations to place a higher priority on land acquisition, or accelerating the process for being able to count land already acquired against stay-ahead requirements by, for example, recording easements more quickly.
- Require that project proponents provide land in lieu of fees (see Section 7.5.9, *Land Dedication In Lieu of Development Fee*).
- Temporarily or permanently adjust certain HCP/NCCP provisions through an amendment or other process (e.g., the method for measuring compliance with the stay-ahead provision) with the approval of the wildlife agencies.
- Slowing or stopping take authorizations until conservation strategy obligations catch up with impacts.
- If, after the exercise of all available authority and utilization of all available resources, the JPA cannot comply with the stay-ahead provision, the HCP/NCCP will be reevaluated, and an amendment may be warranted if adjustments to the take authorization, permit term, conservation obligations, or other aspects of the permits, Implementing Agreement, or HCP/NCCP are necessary. See Section 7.5.9, *Land Dedication In Lieu of Development Fee* for more information on the land in lieu of fee requirement when the JPA is not meeting the stay-ahead provision or is at risk of not meeting the stay-ahead provision.

7.5.3.4 Requirements for Providing Land Instead of Paying a Fee When Stay-Ahead Provision Is Not Being Met

If the JPA determines the HCP/NCCP is at risk of noncompliance with the stay-ahead provision, the JPA will notify the Permittees. The JPA may determine it is necessary to temporarily require project

proponents (including Permittees) to provide land (or perform equivalent conservation actions in Chapter 6, *Conservation Strategy*) instead of paying a fee. If the stay-ahead provision is not satisfied based on the criteria listed above, however, the JPA must notify the other Permittees of the necessity to temporarily require project proponents to provide land instead of paying fees. This requirement may be waived if the wildlife agencies agree, after conferring with the JPA that a different plan of action developed in concert with the JPA will remedy the situation and it is not necessary to require project proponents to provide land instead of paying a fee. Alternatively, a Permittee may have accrued sufficient credits to offset any fees due.

Land will be provided to the JPA according to the guidelines and criteria in Section 7.5.9, *Land Dedication In Lieu of Development Fee*. Project proponents will always have the option of providing land in lieu of the base development fee as long as the land offered meets the criteria in Section 7.5.9, *Land Dedication In Lieu of Development Fee*. If the JPA initiated the requirement due its own determination that the HCP/NCCP was at risk of noncompliance, the requirement to provide land instead of a fee will be lifted (i.e., it will revert back to an option) as soon as the JPA determines that it is no longer at risk of noncompliance with the stay-ahead provision. If the JPA or wildlife agencies initiated the requirement following noncompliance with the stay-ahead provision, the requirement will be lifted as soon as the JPA demonstrates in writing to the satisfaction of the wildlife agencies that the HCP/NCCP is in compliance with the stay-ahead provision.

7.5.3.5 Conservation Action Deadlines Beyond Stay-Ahead Requirement

As summarized above, the JPA is required to meet the stay-ahead provision so that land acquisition keeps pace with impacts. If impacts occur more slowly than expected, however, strict adherence to the stay-ahead provision would result in relatively slow growth of the reserve system initially, followed by a rapid expansion of the reserve system to meet the final acquisition targets. To ensure the JPA makes steady progress towards the final land acquisition targets, the JPA will work with the wildlife agencies to conduct a formal and complete review of progress toward building the reserve system every 10 years after the initial implementation.

7.5.4 Land Acquired by Other Organizations or through Partnerships

Agencies and organizations other than Permittees will acquire land in the Plan Area that will help meet the goals and objectives of this HCP/NCCP. In these cases, the JPA may receive credit toward HCP/NCCP requirements if the acquisitions are made in partnership with the JPA and are consistent with the HCP/NCCP. The JPA will most likely participate in many of the habitat-related land acquisitions in the Plan Area during the permit term. The JPA may own little or no land, however. If the JPA partners with other groups and provides matching funds, for example, larger land acquisitions will be possible than if the JPA only purchased land on its own. Land acquired through partnerships with non-Permittees can be counted toward the HCP/NCCP conservation requirements (i.e., contribution to recovery) if the acquisition meets the criteria for reserve system lands described in Chapter 6, *Conservation Strategy,* and the criteria described above in Section 7.5, *Land Acquisition*.

The HCP/NCCP budget assumes the JPA will always fund management and monitoring on land in the reserve system; actual funding will be determined on a case-by-case basis. The JPA, or other groups and agencies, may manage and monitor land acquired through partnerships as long as a contract or

other binding agreement is in place to ensure that management and monitoring occurs according to the terms of the HCP/NCCP. Land acquired with state or federal money will be credited toward the state/federal contribution discussed in *State and Federal Funding* (Section 8.2.2, *Federal and State Funding Sources*). All acquisitions—regardless of the method of acquisition—that are enrolled in the reserve system will be credited toward the stay-ahead provision as discussed in Section 7.5.3.

7.5.5 Conservation Easements

Voluntary permanent conservation easements (hereafter referred to "conservation easements") on private lands are an important tool the JPA will use together with fee title acquisition from willing sellers to fulfill the land conservation commitments. Conservation easements are voluntary, legally binding agreements between a landowner and an easement holder that restrict certain uses of the land to protect specified wildlife and plant species and natural communities while the landowner maintains ownership. Under the HCP/NCCP, the conditions of conservation easements must provide sufficient protection of a sufficient amount of land to achieve the HCP/NCCP biological goals and objectives. A number of entities may hold HCP/NCCP conservation easements (e.g., the JPA, Permittees, and land trusts); however, the JPA must always be granted the right of enforcement of the easement and access for monitoring (see the template easement in Appendix K). Although conservation easements can include a variety of restrictions and stewardship commitments, only those that are permanent and meet other statutory and regulatory requirements, including specific substantiation requirements, are considered as viable tools for implementing land conservation under the HCP/NCCP.

The primary purpose of conservation easements on private lands under the HCP/NCCP will be to provide the combined benefit of covered species and natural community conservation and continued viable use of rangelands and certain agricultural lands of the Plan Area. The HCP/NCCP includes acreage targets for the protection of natural communities for the benefit of a number of HCP/NCCP covered species and it is expected all of these targets will be achieved through conservation easements. The HCP/NCCP includes targets for the protection of ricelands that provide habitat for giant garter snake, for example, the JPA will achieve a substantial portion of this target through conservation easements that allow for the continuation of rice production. Easements the JPA purchases from willing landowners on such ricelands will allow the use of agricultural practices compatible with the conservation of this species.

7.5.5.1 Conservation Easements on Private and Public Lands

The JPA will use conservation easements as an important tool in HCP/NCCP implementation in three ways:

- Conservation easements purchased from a private party and placed on the land that remains in the ownership of that private party (i.e., as an alternative to fee title acquisition).
- Conservation easements placed on land acquired in fee title by the JPA to secure credit under the Plan (see Section 8.6 *Land Acquisition*).
- Conservation easements placed on land in public ownership (may be purchased by the JPA or donated by the public entity, potentially for take credit.

This section describes the process for developing acceptable conservation easements in all three cases.

7.5.5.1.1 Easements on Private Land

This HCP/NCCP assumes the JPA will purchase most of the land for the reserve system in conservation easements rather than in fee title. Conservation easements are appropriate where landowners wish to retain ownership and control of the property and the JPA can meet the HCP/NCCP's conservation goals with an easement. The conservation easements purchased by the JPA are intended to preserve the habitat values of the covered species and other native species habitat values that exist on a property. The JPA will only count portions of properties that meet one or more of the goals of the HCP/NCCP towards the conservation commitments outlined in the conservation strategy. In some cases, an easement may be placed over more of a property than the JPA initially counted towards the conservation targets if the JPA determines that other portions of the property will be restored or enhanced to accommodate HCP/NCCP goals in the future. Additional credit would be applied to these other sites once they meet HCP/NCCP goals.

7.5.5.1.2 Easements on Land Acquired by or for the JPA

If the JPA or a Permittee owns reserve system land, a conservation easement must be placed on the site to ensure permanent protection. For lands acquired for the reserve system but owned by other public entities, and for lands acquired in fee or easement but owned by private parties, permanent protection must also be ensured by a conservation easement consistent with the requirements herein. In all cases, conservation easement terms will be consistent with those described in this section.

7.5.5.2 Conservation Easement Guidelines

The JPA, or its partners acquiring conservation easements on behalf of the JPA with HCP/NCCP funding, will use the following guidelines.

All conservation easements acquired to fulfill the requirements of the HCP/NCCP will be in perpetuity and in accordance with California Civil Code Sections 815 et seq.[1] as well as the current policies of the wildlife agencies. All conservation easements will be acquired voluntarily. The JPA or another qualified conservation organization (e.g., Yolo Land Trust, The Nature Conservancy) may own or *hold* the easement, provided the easement holder complies with all applicable provisions of state and federal law that dictate the qualifications of conservation easement holders. In addition, a binding agreement must exist between the JPA and the easement holder to ensure compliance with the permits, Implementing Agreement, and HCP/NCCP. An objective of the easements is to have consistency in enforcement, monitoring, and maintenance. For land owned by the JPA, the easement must be held by another qualified conservation organization..

The wildlife agencies will be named as third party beneficiaries on all conservation easements. To ensure compliance with the HCP/NCCP, all conservation easements will follow the template easement in Appendix K as closely as is reasonably possible. Reasonable variations from the template may be needed to address site-specific constraints. CDFW and USFWS, along with the JPA, must review and approve any substantive modifications to the template easement.

[1] This section of California law allows placement of restrictions on the use of land for conservation purposes that is binding on all successive owners of that land.

It is the responsibility of participating landowners to abide by the terms of these conservation easements. The landowner and the JPA will negotiate the terms and prices of conservation easements on a case-by-case basis. The specific terms of the conservation easement will be developed based on site conditions, landowner preferences and operations, and species and habitat needs. Some landowners may wish to reserve a portion of their property for such as a home site or a recreational facility with high intensity use. In these cases, the conservation easement may either exclude the incompatible site or apply to the entire property but define the portion of the site in which the incompatible uses are allowed[2]. The HCP/NCCP will only receive credit for the portion of the property that is compatible with HCP/NCCP goals and objectives.

Each conservation easement for the property or portion of the property that will be incorporated into the reserve system will be drafted to:

- ensure that the property will be kept in compatible agricultural uses or, for properties that will not be used for the production of crops, in its natural or existing condition (all or portions of the site may also be enhanced or restored),
- protect the existing, enhanced and/or restored conservation values of the property in perpetuity,
- ensure the easement cannot be extinguished without the prior written consent of the JPA and the identified third party beneficiary wildlife agencies, as well as compliance with any applicable provisions of state and federal law,
- confine the allowable uses of the property to those activities that do not interfere with the protection or enhancement of those conservation values consistent with the HCP/NCCP, and
- prevent any use of the property that would impair or interfere with the conservation values of the property.

The conservation easement will describe the conservation values of the property specifically in terms of covered species and their habitat, as well as other land cover types and natural communities on the property. It will describe conservation values, at a minimum, using the land cover types and covered species habitat described in Chapter 2 and Appendix A. A legal description and map must be included in the easement.

Each conservation easement will prohibit certain activities as described in the template provided in Appendix K except as necessary to meet the biological goals and objectives of the HCP/NCCP (including reserve infrastructure required to support monitoring, management, and maintenance). These allowances will be described in the reserve management plan that the JPA will develop consistent with the management plan template provided in Appendix G. In addition, all recorded conservation easements will include or incorporate by reference the items listed below.

- The initial pre-acquisition assessment of covered species habitat and natural communities present.
- A detailed list of the allowable uses and use restrictions on the parcel, consistent with the minimum requirements stated above.

[2] There may be advantages to having the conservation easement apply to the entire site, for example, to avoid costly boundary surveys needed to define the conservation easement more narrowly than the property boundary.

- Any mandatory terms and conditions to maintain or enhance the habitat pursuant to Section 6.4 of this HCP/NCCP.
- Provisions for reasonable access upon prior notice, by the wildlife agencies and the JPA or its designee to monitor compliance with the terms of the conservation easement and to carry out all applicable management and monitoring requirements described in Chapter 6.
- Conservation easements on grazing lands will describe the general nature of the grazing to be allowed or refer to a management plan that covers such matters. The easement or its management plan will specify the desired vegetation and other habitat conditions and, if necessary, impose limits on the timing, stocking density, and duration of permitted grazing to meet those conditions. These desired conditions and grazing limitations will be allowed to fluctuate according to the adaptive management process. The conservation easement will describe a baseline condition to provide a benchmark to measure habitat enhancement on the site. The conservation easement may accomplish this requirement by reference to a separate reserve management plan prepared for the lands covered by the easement.
- Conservation easements will take into account issues of water use and runoff into adjacent or nearby streams and their potential effects on covered species, if applicable.
- Provisions for enforcement and available remedies for the JPA or appropriate other party in the event that title holder or a third party violates the terms of the conservation easement.
- If the easement boundaries are different from the parcel boundaries, a legal description and map of the easement boundaries will also accompany the easement.
- When a reserve management plan is prepared for private property according to Section 6.4.3.3, the JPA will record a Memorandum of Unrecorded Reserve Management Plan, indicating where that reserve management plan may be found and that the terms of such reserve management plan will be followed. Such a record, to be recorded with the land deed, ensures that the reserve management plan will be tied to the conservation easement in the event property ownership changes. It also ensures management of the site in perpetuity.

To approve and accept a conservation easement, the JPA must have the following documentation.

- A pre-acquisition assessment of the property summarizing the baseline biological conditions including the presence and condition of natural communities and the presence and condition of covered species, if known (a complete biological inventory of the site will be conducted after the easement is recorded).
- A preliminary title report and legal description of the property.
- Assurance that any superior liens or interests will not substantially conflict with the property's conservation values.
- Evidence of all other easements, covenants, restrictions, reserved rights, and other property interests (including water rights).
- A Phase I Environmental Site Assessment (ESA) to identify potential environmental contamination if there are indications that a property may have previously included uses other than reasonable and customary agricultural activities.
- A map and description of the parcel and its physical condition (e.g., roads, buildings, fences, wells, other structures) and its relation to other components of the reserve system and other properties subject to other permanent protections for conservation purposes.

- A Property Analysis Report (PAR) or comparable endowment assessment of the initial capital costs and ongoing management funds required to manage and monitor the lands (e.g., applicable components of HCP/NCCP cost estimate).

7.5.5.3 Conservation Easement Minimum Requirements

This section describes the required content of a conservation easement and the minimum restrictions that must be placed on a conservation easement for it to count towards the goals of the HCP/NCCP.

7.5.5.3.1 Content of a HCP/NCCP Conservation Easement

A HCP/NCCP conservation easement is a recorded in-perpetuity deed restriction conveyed to the JPA, Permittee, USFWS, CDFW, or other appropriate entity (e.g., a land trust) that restricts the uses of the subject property in a manner that will achieve the intended conservation goals and objectives. HCP/NCCP conservation easements must state a specific conservation purpose, such as the protection of specified natural communities, covered species habitat, and agricultural uses that support one or more covered species. The following describes the minimum content of HCP/NCCP conservation easements.

1. Conveyance Form. This section of the easement contains the identification of the parties, a description of the parcel(s), required words of conveyance, and a statement of consideration. All persons with ownership interest in the property must be a party to the deed.
2. Recitals. The recitals identify the nature of the agreement and describe the intent of the parties in establishing the conservation easement. It also identifies the conservation values that warrant protection, and the statutory foundation for the transaction.
3. Purposes Clause. This establishes the foundation for easement interpretation. The purposes clause is the basis for determining compliance with the inconsistent use provision of the U.S. Department of the Treasury Regulations (26 CFR 1.170A-14).
4. Holder's Affirmative Rights. This section must grant the JPA the right to enforce the restrictions of the easement and the right to access the land for monitoring purposes. Ancillary rights related to these two primary functions of the holder are also granted.
5. Restrictions and Reserved Rights. This section identifies the land use restrictions, allowable and prohibited uses and activities, the requirement for prior approval of certain activities by the JPA, and those rights reserved by the landowner. All rights and restrictions will be directly relevant to the conservation purposes of the easement and must be unambiguous and quantifiable.
6. Administrative Provisions. This section must include all provision required by the applicable Federal Treasury Regulations (26 CFR 1.170A-14), including provisions establishing the easement holders and the JPA's rights and remedies in case of a violation. The easement must include an environmental indemnity to ensure that the easement holder will not be liable under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), (42 U.S.C. §§ 9601 et seq.) or the Resource Conservation and Recovery Act (RCRA), (42 U.S.C. §§ 6901 et seq.). Additional administrative clauses governing, among others, procedures for enforcement, notices, required approvals, issuance of compliance certificates may be included.
7. Signatures of Necessary Parties. All owners and the easement holder must sign the document. Signatures must be notarized.

8. Exhibits. The legal description of the property is incorporated as an Exhibit at the end of the conservation easement. The easement may also be clarified by attaching maps and other relevant information.

7.5.5.3.2 Minimum Restrictions of a Yolo HCP/NCCP Conservation Easement

The JPA will develop performance standards and minimum conservation easement requirements for HCP/NCCP conservation easement properties. In particular, the JPA will identify standard restrictions on allowable uses, and develop a list of inconsistent uses for each conveyed easement to clearly identify the intended objectives, methods and assurances that each conservation easement is expected to provide for achieving the conservation objectives of the property. These performance standards will represent the minimum conservation easement requirements. The JPA may negotiate additional requirements and restrictions with each property owner on a case by case basis. At minimum, the Restrictions and Reserved Rights section of each HCP/NCCP conservation easement (or in some instances, the Management Plan) must:

1. Identify the conservation purpose and the natural communities and habitat for covered species that are addressed by the conservation easement.
2. Identify the conservation actions that may be implemented by the JPA on property (e.g., habitat improvements, control of non-native species).
3. Identify the range of crops and rotation practices allowable under the easement and/or the range of crops and practices that are not allowable under the easement for active agricultural fields that are included in HCP/NCCP reserve system lands.
4. Grant in-perpetuity protection of the subject natural communities and habitat values, permanently restricting the use of the property.
5. Allow the JPA to designate a successor or easement holder at its discretion.
6. Protect the land surface from mineral extraction where feasible.
7. Prevent permanent the separation of water rights from the property, and provide for short-term transfers only in limited circumstances and with prior approval by the easement holder and the Wildlife Agencies.
8. Prevent improvements that reduce the property's conservation values.
9. Allow the easement holder and JPA access to the property to determine compliance with and to enforce the easement.
10. Allow the easement holder, the JPA, and its designees (e.g., contractors to the JPA, USFWS, CDFW, and research scientists) access to the property to conduct HCP/NCCP required biological monitoring and documentation of baseline conditions, implement habitat improvements covered under the conservation easement, and control nonnative species.
11. Reference the reserve management plan tied to the easement.
12. Provide standards for easement enforcement, amendments, and modification procedures.
13. Provide a clear set of restrictions and/or limitations on allowable uses, including commercial (e.g., woodcutting), agricultural (e.g., rodenticides), and recreational uses.
14. Clearly describe activities and actions by the landowner that require prior consent from the JPA (e.g., dike/levee construction or any project involving mechanical movement of earth; change in

land use; change in application of pesticides/herbicides). The use of pesticides and herbicides is not a covered activity under the HCP/NCCP, therefore the HCP/NCCP does not allow use of pesticides or herbicides that result in take of listed species.

15. Prohibit the removal, filling, or other disturbances of soil surface, any changes in topography, surface or subsurface water systems, wetlands, or natural habitat unless such activities are approved by the JPA, except for active agricultural fields for which normal farming practices will continue and for which the easement will identify the allowable (or alternatively, prohibited) range of crops and rotation practices and specify any additional prohibitions.
16. Declare that all terms and conditions of the easement run with the Property and shall be enforceable against the landowner or any other person or entity holding any interest in the property.
17. Provide for the notification of the JPA at least 30 working days prior to the transfer of title to the Property.
18. Include provisions in case a property interest is taken by public authority under power of eminent domain.

7.5.5.4 Allowable Activities on HCP/NCCP Reserve System

The following discretionary and non-discretionary activities may be conducted on HCP/NCCP reserve system lands. In many instances, these activities will involve both the continuation of ongoing activities on properties and new activities related to implementation of HCP/NCCP conservation measures. Within the restrictions on allowable uses detailed in conservation easement deeds, the following activities may be allowable on HCP/NCCP reserve system lands at the discretion of the JPA.

- Habitat management activities as provided for in Conservation Measure 3, *Manage and Enhance Natural Communities;*
- Biological and physical resources monitoring as described in Section 6.5, *Monitoring and Adaptive Management*;
- Directed studies that support the HCP/NCCP adaptive management decision making process and non-HCP/NCCP related research approved by the JPA;
- Controlled passive recreational uses (e.g., hiking, bird watching, and non-commercial fishing and hunting) and facilities to support such uses (e.g., trails, check-in kiosks, and interpretive signs) as approved within reserve system lands management plans and JPA approved conservation easements. If there are trails or permanent structures, however, this acreage will not could toward the HCP/NCCP conservation commitments. If new trails or structures are built, this acreage will be counted as part of the jurisdiction's take. The JPA expects that most conservation easements will preclude public access.
- Commercial recreational uses (e.g., waterfowl or upland bird hunting during legal hunting seasons on HCP/NCCP protected lands) as approved within reserve system management plans by the wildlife agencies and JPA approved conservation easements. Any hunting or recreational uses cannot diminish the conservation goals as outlined in the HCP/NCCP;
- Access for emergencies and public safety (e.g., fire suppression, flood control, and emergency response). The JPA will develop a wildfire local operating agreement for the fire suppression in

the reserve system with Cal Fire and with any other firefighting agency that has responsibility for reserve system lands;

- Use of non-public roads on reserve system lands to provide land manager, and local landowner access to adjoining lands as approved by the JPA;
- Access to and maintenance of water conveyance infrastructure by water districts;
- Access to and maintenance of existing road and utility infrastructure (e.g., maintenance of below and above ground electric transmission lines, below and above ground cable and telephone lines, and underground pipelines) on reserve system lands consistent with pre-existing easements and any other in-perpetuity agreements attached to property titles;
- Ongoing agricultural and grazing practices and other land uses (including customary fallowing and rotation practices that are necessary to maintain production of target crop types over time) as allowable under JPA approved conservation easements;
- Ongoing use of approved pesticides, herbicides and other agro-chemicals in accordance with EPA labels and their recommended application that, for rice land application, are not harmful to mammals, reptiles, and amphibians (use of these chemicals is not a covered activity under the HCP/NCCP);
- In rice conservation easements, crop rotations involving non-rice crops (e.g., row crops, corn) are allowable provided that the following conditions are met:
  - Conveyance channels customarily used for rice farming on the respective parcel must be filled with water to provide habitat for giant garter snakes during the active season of the species (March through October);
  - Berms, levees, and other potential hibernation habitat for giant garter snakes may not be removed, altered or otherwise compromised during the hibernation season (November through February) to avoid disturbance of hibernating snakes.
- Non-commercial wood cutting as allowed under JPA-approved conservation easements. This precludes the removal of Swainson's hawks nesting trees or riparian vegetation associated with a stream;
- Educational tours of reserve system lands (e.g., school science classes) as authorized by the JPA; and
- Access for and implementation of specified mosquito abatement treatments as agreed to by the JPA.
- Other uses agreed to in writing by the JPA and the wildlife agencies.

The JPA must, in all cases, ensure the intended conservation benefits and conservation values of the reserve system lands as stated in the HCP/NCCP conservation strategy are not compromised.

7.5.6 Grazing Leases, Licenses or Contracts within the Reserve System

Livestock grazing is an important management tool that benefits some terrestrial covered species. As a result, the JPA will likely use managed livestock grazing in some of the reserve system. Existing grazing leases or licenses on a newly established reserve will continue until the JPA prepares, and

the wildlife agencies approves, a reserve management plan. After the reserve management plan is approved, the JPA will review all grazing leases or licenses on the reserve for consistency with the reserve management plan and with the terms of the HCP/NCCP. If necessary, leases or licenses will be revised and brought into compliance with the HCP/NCCP's conservation strategy and the framework for adaptive management to the extent allowable by the terms of the lease. If land is acquired in fee title from a landowner who is also the grazing operator, the JPA may maintain the previous grazing regime with a willing former landowner (e.g., through a short-term lease) until the JPA prepares a reserve management plan and the wildlife agencies approve it. Once approved, this reserve management plan will establish the grazing regime on the site, which can then be incorporated into long-term grazing leases.

If livestock grazing is introduced to a reserve or if the preexisting grazing lease or license expires, the JPA or other Permittee will enter into a lease agreement or license with the livestock operator. A contract may be necessary in the event the JPA pays the livestock operator to graze livestock (e.g., when grazing a small site or the operator is implementing a grazing regime prescribed by the JPA that does not provide an economic return to the operator). The contract, lease agreement, or license will specify the desired vegetation and other habitat conditions and impose limits on the timing, stocking density, and duration of permitted grazing to meet those conditions. The JPA will review the grazing contracts, leases, or licenses annually with the operator to adjust grazing practices to best meet habitat goals. At the expiration of the contract, lease, or license, the JPA will review monitoring data to determine whether the contract, lease, or license should be reissued with no changes in grazing management, reissued with changes in the grazing regime, or not reissued. All new and renewed contracts, leases, or licenses will include the following conditions of agricultural use and covenants to protect resources.

- Grazing capacity and stocking rates.
- Residual dry matter guidelines or other management targets
- Conditions under which the desired stocking rate can be changed or exceeded (e.g., seasonal adjustments to maintain habitat quality, annual adjustments in response to rainfall).
- Grazing and livestock practices.
- Pest control restrictions.

The lease agreement will also outline the responsibilities of each party for maintaining reserve infrastructure. In addition to maintenance of reserve infrastructure, lease agreements will also include the responsibilities of the grazing lessee to maintain or meet desired habitat conditions. Responsibilities of the grazing lessee may include, but are not limited to:

- Evaluation, repair, and general maintenance of fences, including in riparian areas;
- Invasive species control, including any necessary herbicide application (this does not include rodenticide application); and
- Pond maintenance (if California tiger salamanders are confirmed to be absent).

The JPA may include other maintenance actions in the lease agreements if the JPA deems appropriate.

7.5.7 Willing Sellers

A key principle of the HCP/NCCP is the JPA will only acquire land for the conservation strategy from willing sellers. The JPA will strictly follow this principle; the JPA will not condemn land from unwilling sellers to meet Plan conservation requirements.

Nothing in the HCP/NCCP will prevent other organizations from exercising their powers of eminent domain for purposes other than implementation of the HCP/NCCP and with funds other than those raised as a result of this HCP/NCCP. If subsequent to such a condemnation, and after soliciting input from the public and the Advisory Committee, the JPA Board of Directors finds that the condemned lands are integral to the successful implementation of the HCP/NCCP, the JPA may seek agreement with the owner of the condemned lands to manage those lands in a manner consistent with the HCP/NCCP.

Given the many land acquisition requirements in Chapter 6, *Conservation Strategy*, it is possible that one or several landowners who own key resources of interest to the JPA will refuse to sell, or that negotiations to sell will fail. It is impossible to predict at this time where this may occur and in what context it will occur (e.g., how much of the reserve system has been acquired, the extent of resources remaining to protect). This situation, if it occurs, is only expected near the end of Year 45, when all land acquisition requirements must be met. By this time, most or all of the development impacts will likely have occurred; consequently, any delays in land acquisition associated with a lack of willing sellers will affect few covered activities. The JPA can avoid this situation if the JPA begins negotiations with key landowners early in the permit term. A review of progress toward land acquisition goals will take place at least annually with each annual report submitted to the wildlife agencies.

If the wildlife agencies are not satisfied with the reserve as constructed based on purchases from willing landowners, the JPA will reconfigure the land acquisition strategy in coordination with the wildlife agencies. If such a reconfiguration is not possible, the JPA and wildlife agencies will meet and confer as described above in Section 7.5.3.1, *Measurement of Stay Ahead Provision.* The JPA and wildlife agencies will consider the options below, and other available options.

- Requiring project proponents to provide land instead of fees to obtain coverage under the HCP/NCCP (see Section 7.5.9, *Land Dedication In Lieu of Development Fee*).
- Slowing or stopping local permit issuance under the HCP/NCCP until key land acquisitions can be made.

7.5.8 Gifts of Land

The JPA may accept land (or other conservation actions) as a gift or charitable donation. In the case of a prospective gift or donation, the JPA will evaluate the conservation benefit of the lands to be donated relative to the goals, objectives, and requirements of the HCP/NCCP. The JPA may sell or exchange donated land that does not meet these goals, objectives, and requirements, to enable acquisition of land that does meet these goals, objectives, and requirements.

7.5.9 Land Dedication In Lieu of Development Fee

Private landowners (i.e., project proponents) or Permittees may own land that can help to meet the conservation goals of the HCP/NCCP. Project proponents that own land within a priority

conservation area may wish to transfer fee title or place a conservation easement on all or a portion of their property to satisfy mitigation requirements. If the JPA and wildlife agencies approve this transfer or easement dedication, it can reduce or eliminate the HCP/NCCP fees required for development of the remaining portion of the property. Some project proponents who wish to develop parcels may own other parcels within an area targeted for conservation by the HCP/NCCP. Transferring title or dedicating a conservation easement may substantially reduce some of the development fees to develop the other property, as long as the easement or title transfer is consistent with the Yolo HCP/NCCP. Alternatively, project proponents may prefer to acquire their own mitigation lands consistent with the Yolo HCP/NCCP and transfer title of these lands or dedicate easements to the JPA instead of paying a portion of the development fees. This section describes the process for allowing these situations.

7.5.9.1 Criteria for Providing Land in Lieu of Development Fees

Land will be eligible for HCP/NCCP fee credit if the land satisfies the criteria below.

- The land satisfies the criteria for reserve system lands in Chapter 6, *Conservation Strategy*.
- The land is within an area considered to be a priority for acquisition (see Chapter 6, *Conservation Strategy*), or the unique and high values on the site justify its inclusion in these designated areas.
- The transaction is approved for the reserve system by the JPA and the wildlife agencies, consistent with their review and approval authority over all land acquisitions for the reserve system (see Section 7.5, *Land Acquisition*, Step 9).

Project proponents must fill out an application, available on the JPA's web site, which provides baseline data on the properties proposed in lieu of development fees, including the biological value to the HCP/NCCP. Documentation should explain how the site meets land acquisition requirements and biological goals and objectives. The property owner also must provide access to the proposed site to allow JPA staff or their designees to survey the site and verify its biological value for the reserve system. The JPA may require the project proponent to bear some or all of the costs of the evaluation, including potential surveys, and the process through which the landowner places an easement on the property. If the JPA decides to accept the land in lieu of fees, the cost of surveys will either be counted against the fees owed, or reimbursed by the JPA. The JPA may also require a project proponent to pay the cost of other due diligence such as phase 1 site assessment, appraisal, and title search. The JPA will consider requests for a HCP/NCCP fee reduction or waiver in exchange for land dedication (title transfer or conservation easement) on a case-by-case basis.

7.5.10 Use of Mitigation Banks

A mitigation bank is privately or publicly owned land that is managed for its natural resource values. Mitigation banks may sell species credits, wetland credits, or both. Mitigation banks[3] must be approved by USFWS and CDFW. In exchange for permanently protecting and managing the land, the wildlife agencies allow the bank operator to sell species credits to developers who must satisfy legal

[3] A conservation bank is a type of mitigation bank directed specifically at providing credits for species habitat (rather than wetlands, as in a wetland mitigation bank).

requirements for compensating the effects of projects that affect listed species or their habitat[4]. A conservation or mitigation bank is a free-market enterprise that performs the following functions.

- Offers landowners economic incentives to protect natural resources.
- Saves project proponents' time and money by providing them with the certainty of preapproved compensation lands.
- Provides for long-term protection and management of habitat.
- Operates with goals similar to those of regional HCPs or NCCPs, including this Plan.

Credits sold by private mitigation banks within the permit area can count toward the HCP/NCCP if they are consistent with the conservation, monitoring, adaptive management, and other relevant provisions of the HCP/NCCP. For the bank to be eligible to sell credits to project proponents (public or private) with activities covered by the HCP/NCCP, the bank must meet all of the relevant standards of habitat enhancement, adaptive management, and monitoring outlined in Chapter 6, *Conservation Strategy*. This includes updating the existing easement on the property to conform to the Yolo HCP/NCCP's easement template (Appendix K) and providing the JPA with copies of monitoring reports annually. All effects and mitigation for effects covered under the HCP/NCCP must occur within the Plan Area analyzed in USFWS's biological opinion for the HCP/NCCP. Similarly, CDFW policy requires all effects and mitigation to occur within the Plan Area. As such, mitigation banks located outside of the Plan Area may not be used.

Mitigation bankers wishing to establish a bank whose credits can count toward HCP/NCCP requirements must notify the wildlife agencies to allow consideration of such provisions during bank development and agency approval. Bankers must also coordinate closely with the JPA to help ensure the bank's consistency with the HCP/NCCP and use by HCP/NCCP Permittees.

There are currently three approved conservation or mitigation banks in the study area. The Pope Ranch Conservation Bank, which is currently sold out, was selling credits for the conservation of giant garter snake. The Sacramento River Ranch Wetlands Mitigation Bank supports 119 acres of wetlands at the southern end of River Ranch, created as a wetlands bank, which filters irrigation water and provides wildlife habitat. The Liberty Island Conservation Bank is a 148-acre conservation bank, approved to mitigate impacts to native Sacramento–San Joaquin River Delta fish including Delta smelt and listed salmon. There are also several banks in adjacent counties whose service areas extend into the study area. Existing mitigation banks will need to ensure their easement conforms with the HCP/NCCP easement template to sell additional credits in Yolo County. For existing mitigation banks with no credits left to sell, the JPA may work with the bank to change its easement to conform with the HCP/NCCP so the bank may count towards the JPA's target. (Refer to Pre-permit Reserve Lands section.) Credits sold by banks located outside the permit area cannot count toward HCP/NCCP goals or fees even if the bank's service area extends into the Plan Area.

7.5.11 Use of Mitigation Receiving Sites

In addition to the mechanisms described above, the JPA has established mitigation receiving sites for Swainson's hawk habitat. A mitigation receiving site is property encumbered by a conservation easement for the purpose of providing mitigation credits to offset the impacts of future

[4] For additional information on banking see: https://www.dfg.ca.gov/habcon/conplan/mitbank/

development. Projects that decrease or impair existing Swainson's hawk habitat may turn to a local mitigation receiving site to purchase "credits" for project impacts from the receiving site owner. A credit purchase will typically require the payment of a per-acre fee and the recording of various documents to establish that mitigation has occurred (and to track the remaining credits available for purchase). In this manner, mitigation receiving sites create an efficient means of conserving agricultural land (and in some instances, nesting habitat) for the benefit of the Swainson's hawk.

The JPA, with the assistance of the STAC, will evaluate potential mitigation receiving sites on the basis criteria established by the STAC in coordination with JPA staff. These criteria include, but are not limited to:

1. location within the HCP/NCCP reserve system;
2. habitat value for targeted covered species (e.g., Swainson's hawk);
3. proximity to existing protected lands;
4. proximity to other suitable habitat; and
5. consistency with the HCP/NCCP's conservation strategy and subject to the wildlife agencies review and approval.

7.6 Implementing Agreement

The NCCP Act requires an Implementing Agreement for all NCCPs, and specifies necessary provisions. The purpose of an Implementing Agreement is to ensure each party understands its obligations under the HCP Section 10(a)(1)(B) permit and NCCP permit, and to provide remedies should any party fail to fulfill its obligations. Accordingly, an Implementing Agreement has been prepared for this HCP/NCCP (Appendix F). This agreement specifies the responsibilities of each party; how the HCP/NCCP will be implemented; reporting and enforcement procedures; and various other provisions agreed to by the parties. The Implementing Agreement references material in the HCP/NCCP whenever possible. As a result, the HCP/NCCP and the Implementing Agreement are made as consistent as possible. In the unlikely event that there are inconsistencies among documents, the permits prevail first, then the Implementing Agreement, and finally the HCP/NCCP.

7.7 Plan Assurances

ESA regulations and provisions of the NCCPA each provide for regulatory and economic assurances to parties covered by approved HCPs and/or NCCPs concerning their financial obligations under a plan. Specifically, these assurances are intended to provide a degree of certainty regarding the overall costs associated with implementation, and add durability and reliability to agreements reached between the Permittees and the wildlife agencies. That is, if unforeseen circumstances occur that adversely affect species covered by an HCP or NCCP, the wildlife agencies will not require of that HCP or NCCP any additional land, water, or financial compensation or impose additional restrictions on the use of land, water, or other natural resources. The assurances provided under the ESA and the NCCPA do not limit or constrain the wildlife agencies, or any other public agency, from taking additional actions to protect or conserve species covered by an NCCP and HCP.

7.7.1 Changed and Unforeseen Circumstances

7.7.1.1 Unforeseen Circumstances

Unforeseen circumstances are events that may not be reasonably anticipated during the development of the HCP/NCCP. As a result of the unpredictable nature of unforeseen circumstances, response measures to such events are not included in the HCP/NCCP. The difference between a "changed" and an "unforeseen" circumstance might depend upon the severity of the event. For example, flooding up to a certain defined point might qualify as a "changed circumstance," whereas an even larger flooding event would be an "unforeseen circumstance." Likewise, a small fire that affects only limited acreage may be a "changed circumstance," but a large fire that destroys hundreds or thousands of acres may be considered unforeseen.

The USFWS defines unforeseen circumstances as those changes in circumstances that affect a species or geographic area covered by an HCP that may not reasonably have been anticipated by the plan participants during the development of the conservation plan, and that result in a substantial and adverse change in the status of a covered species.

Similarly, unforeseen circumstances are defined in the NCCPA as changes affecting one or more species, habitat, natural community, or the geographic area covered by a conservation plan that may not reasonably have been anticipated at the time of plan development, and that result in a substantial adverse change in the status of one or more covered species. The NCCPA further provides that, in the event of unforeseen circumstances, CDFW shall not require additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources without the consent of the plan participants for a period of time specified in the Implementation Agreement as long as the plan is being implemented consistent with the substantive terms of the Implementing Agreement.

Under ESA regulations, if unforeseen circumstances arise during the life of the HCP, the USFWS may not require the commitment of additional land or financial compensation, or additional restrictions on the use of land, water, or other natural resources other than those agreed to in the HCP, unless the HCP authorized entities consent. Within these constraints, the USFWS may require additional measures, but only if: (1) the USFWS proves an unforeseen circumstance exists; (2) such measures are limited to modifications of the HCP's operating conservation program for the affected species; (3) the original terms of the HCP are maintained to the maximum extent practicable; and (4) the overall cost of implementing the HCP is not increased by the modification.

7.7.1.2 Changed Circumstances

The Federal No Surprises Regulation[5] defines *changed circumstances* as changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for (e.g., the listing of a new species, or a fire or other natural catastrophic event in areas prone to such events). Similarly, state regulation under the NCCPA defines changed circumstances as those circumstances that are reasonably foreseeable and may affect a covered species or geographic area covered by the plan.[6]

[5] 63 Federal Register 35 (1998) (amending 50 CFR 17.22(b)(5), and 222.307(g)).

[6] California Fish and Game Code §

The wildlife agencies will not require any additional conservation or mitigation to address changed circumstances that are not identified in the HCP/NCCP, without the consent of the JPA, as long as the HCP/NCCP is being properly implemented. *Properly implemented* means the Permittees are implementing or have fully implemented commitments and the provisions of the HCP/NCCP, Implementing Agreement, and permits.

Accordingly, an HCP/NCCP must identify potential changed circumstances and describe the remedial measures the JPA will take to address such circumstances. The JPA must implement these remedial measures in response to the existence of a changed circumstance in accordance with the Federal No Surprises Regulation. If the JPA, wildlife agencies, or any of the Permittees becomes aware of the existence of a changed circumstance, each organization shall immediately notify the other organizations.

The following changed circumstances can reasonably be anticipated in the Plan Area:

1. New species listings
2. Climate change
3. Wildfire
4. Nonnative invasive species or disease
5. Flooding
6. Drought
7. Earthquakes
8. Loss of Swainson's hawk habitat and populations below threshold

If a changed circumstance occurs within the Plan Area as defined by these sections, the JPA will modify its activities in the manner described below, to the extent necessary to address the effects of the changed circumstances on the HCP/NCCP's conservation strategy, and will report on its actions to the wildlife agencies.

7.7.1.3 New Species Listing

The wildlife agencies may list additional species as threatened or endangered under the ESA or CESA that are not HCP/NCCP covered species. In the event that USFWS or CDFW lists a species not covered by the HCP/NCCP, the provisions of this changed circumstance will be automatically triggered.

Upon a new listing of a species under state or federal endangered species laws, the JPA will undertake the following measures:

- Evaluate the potential impacts of covered activities on the newly-listed or candidate species and conduct an assessment of the presence of suitable habitat in areas of potential effect.
- Implement measures to avoid take of the newly listed species until such time as the HCP/NCCP and permits have been amended to include the newly listed species as a covered species.

Alternatively, the Permittees may receive take authorization for the newly listed species as needed on a project-by-project basis.

In the event a species not covered by the HCP/NCCP becomes listed as threatened or endangered or designated as a candidate species, or is proposed or petitioned for listing, the JPA may request that USFWS and CDFW add the species to the relevant take authorizations issued pursuant to the HCP/NCCP. In determining whether to seek take coverage for the species, the JPA will consider, among other things, whether the species is present in the Plan Area and if the covered activities may result in the take of the species. If such take coverage is sought, the HCP/NCCP and its authorizations will be amended consistent with the amendment procedures described in Section 7.10.3, *Amendments*. Alternatively, the JPA, on behalf of the Permittees, may seek new and separate take authorizations.

7.7.1.4 Climate Change

Global climate change is occurring as a result of high concentrations of greenhouse gases in the earth's atmosphere (National Research Council 2010; Intergovernmental Panel on Climate Change 2007). Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, and ozone. These gases absorb energy emitted by the earth's surface, and then re-emit some of this energy back to the earth, warming its surface, and influencing global and local climates. As more and more greenhouse gases are emitted into the atmosphere from human activities such as the burning of fossil fuels, the earth's energy balance is disrupted, resulting in a number of changes to the historical climate. Evidence of long-term changes in climate over the twentieth century include the following (Intergovernmental Panel on Climate Change 2007; National Research Council 2010; Global Change Research Program 2009):

- An increase of 0.74 degree Celsius (°C) (1.3 degrees Fahrenheit [°F]) in the Earth's global average surface temperature;
- An increase of 0.17 meter (6.7 inches) in the global average sea level;
- A decrease in arctic sea-ice cover at a rate of approximately 4.1% per decade since 1979, with faster decreases of 7.4% per decade in summer;
- Decreases in the extent and volume of mountain glaciers and snow cover;
- A shift to higher altitudes and latitudes of cold-dependent habitats;
- Longer growing seasons; and
- More frequent weather extremes such as droughts, floods, severe storms, and heat waves.

Current global and regional trends suggest climate change is likely to have an effect on the Plan Area. By mid-century, the average annual mean temperature in California is projected to rise from 1.1°C (2°F) to more than 2.5°C (4.6°F) (Ostro et al. 2011). Although there is significant variability between models and emissions scenarios, projections suggest there may be up to a 10 to 20% decrease in total annual precipitation by mid-century in California (Luers et al. 2006). Model predictions for California range from a 6 mm (0.24 inches) annual decrease in precipitation to a 70 mm (2.76 inches) annual increase. Consequently, it is likely the climate in the Plan Area will shift to be warmer and dryer than current conditions.

A number of ecological responses to climate change may occur in the Plan Area. First, the timing of seasonal events, such as migration, flowering, and egg laying, may shift earlier or later (Walther et al. 2002; Forister and Shapiro 2003; Root et al. 2003; Root et al. 2005). Such shifts may affect the timing and synchrony of events that must occur together, such as butterfly emergence and nectar availability. Second, range and distribution of species and natural communities may shift (Parmesan

1999; Pimm 2001; Walther et al. 2002; Easterling et al. 2000). Range is the area over which a species occurs or potentially occurs, whereas distribution refers to where a species is located within its range. This is of particular concern for narrowly distributed species that already have restricted ranges due to urban growth or altitudinal gradients. Historically, some species may shift their ranges across the landscape. Today, urban and rural development prevents the movement of many species across the landscape. Species or natural communities that occur only at high elevation (no HCP/NCCP covered species fit this description) or within narrow environmental gradients (e.g., palmate-bracted bird's beak) are particularly vulnerable to changing climate because they likely have nowhere to move if their habitat becomes less suitable (Shainsky and Radosevich 1986; Murphy and Weiss 1992; Thorne 2006, PIER Conference; J. Hillman pers. comm.).

Second, increases in disturbance events, such as fire or flooding, may increase the distribution of disturbance-dependent land cover types, such as grassland, within the Plan Area (Brown and Hebda 1998; Lenihan et al. 2003; Fried et al. 2004; California Climate Change Center 2006; Rogers and Westfall 2007). An increase in the frequency and intensity of disturbance may increase the likelihood that these events will harm or kill individual covered species. Events that occur with unpredictable or random frequency (called stochastic events) such as those described above can have an inordinately negative effect on rare species.

Third, the number or density of individuals found in a particular location may change. This may be triggered in large part by changes in resource availability associated with an increase or decrease in precipitation (Martin 1998; Dukes and Mooney 1999; Walther et al. 2002; Lenihan et al. 2003; Millar et al. 2006; Pounds et al. 2006). Such changes may benefit one species at the expense of other species.

Fourth, over a longer time period, species may change in outward appearance and behavior. Changes in climate may favor different adaptive strategies or appearances that may lead to genetic shifts (Davis and Shaw 2001). An example of this would be a shift to smaller average body size of certain mammals to use limited food sources for maintenance rather than growth.

The conservation strategy, reserve design, and monitoring and adaptive management program anticipate possible effects of climate change using a multi-scale approach that views conservation through landscape, natural-community, and species level. This approach focuses on protecting and enhancing a range of natural communities, habitat types, and environmental gradients (e.g., altitude, aspect, slope), as well as other features that are important as global warming changes the availability of resources and habitat types in the study area.

Implementing conservation actions that protect a variety of landscapes over a large scale provides flexibility for shifts in range and distribution of species and natural communities due to climate change. Land-acquisition actions target properties that provide connectivity to allow for northward and upslope movement, maintenance and restoration of habitat linkages, and reduced habitat fragmentation. As a result, some species and natural communities in the study area would continue to be able to "move" in response to climate change, allowing for shifts in range and distribution.

At the natural-community level, the JPA developed conservation and monitoring actions to address natural communities primarily through the enhancement, restoration, and management of vegetation types (i.e., land cover types) and monitoring those changes. The JPA will manage habitats to help ensure natural community and species persistence in the face of abundance shifts driven by climate change. Enhancement, restoration, and management actions will likely increase the

resilience of natural communities by improving habitat quality overall and controlling invasive plants and nonnative predators.

At the species level, the JPA developed conservation and monitoring actions to supplement and focus actions developed at broader scales and to ensure all the needs of particular species are addressed. These species-specific actions will help ensure shifts of range, distribution, and abundance driven by climate change are buffered by protection and enhancement of individuals, populations, and groups of populations. Status and trends monitoring will serve as an early warning for the possible effects of climate change and will allow the conservation strategy to adapt to ensure species persistence in the Plan Area.

In addition to the conservation actions, monitoring actions will allow for the early detection of trends driven by climate change over multiple scales. Landscape-level monitoring is designed to detect large-scale changes, such as changes in ecosystem processes, shifts in natural-community distribution, and the integrity of landscape linkages. Community-level monitoring will, in turn, detect changes in the composition and function of natural communities, populations of key predator or prey populations, invasive species, and other important habitat factors for covered species. Finally, species-level monitoring will measure the effects of management actions on covered species and the status and trends of covered species in the reserve system. Collectively, these monitoring actions will allow the JPA to detect and respond to the effects of climate change. Taken together, conservation and monitoring actions described above will help buffer against the effects of climate change in the Plan Area.

Climate change is considered a foreseeable event and is therefore a changed circumstance. For the purposes of the Plan, limits on the changed circumstance must be identified.

The JPA will use a method consistent with the California Climate Action Team for measuring temperature change within the study area. The annual average temperature in the Plan Area (16.5°C (61.7°F)) has risen by an average of 0.01°C (0.02°F) per year over the past century (1909 to 2009) (California Climate Change Center 2012). This increase in average temperature has been driven by warmer winters rather than by warmer summers, with three times larger percentage increases in the average temperature in January than that in July (California Climate Change Center 2012). If modeled California climate-change trends are applied to the Plan Area, one may anticipate that the temperature may increase up to 2.5°C (77 °F) during the permit term. Under the HCP/NCCP, the following is considered changed circumstances for which remedial measures will be funded.

- An increase in temperature of up to 2.5°C (77 °F) measured as a 10-year running average for 3 baseline periods - average annual temperature, average summer temperature (June, July, and August), and average winter temperature (December, January, and February).

The JPA's response to the changed circumstance of global climate change will vary by the character and magnitude of the physical and biological changes observed. Responses may include those listed below. All responses will occur within one year of identifying changed circumstances, unless the wildlife agencies concur on a case-by-case basis that specific remedial actions would require more time to initiate.

- Enhanced monitoring to detect ecological responses to climate change.
- Identification of target species most vulnerable to climate change and increased status-and-trend monitoring for those species.

- Alterations to the conceptual ecological models for natural communities and covered species as a tool to devise improved management action.
- Altered or more intensive management actions on target/vulnerable species to facilitate shifts in species distribution (e.g., more active population management of covered species).
- More aggressive control of invasive species that respond positively to climate change.
- Implement other measures through the Adaptive Management Program (Section 6.5) in ways consistent with permit obligations and with the consent of the JPA.

The JPA has established thresholds for events that are not reasonably foreseeable for determining unforeseen circumstances. Unforeseen circumstances not funded by the HCP/NCCP include the following.

- A temperature increase greater than 2.5°C (77 °F) for the three baseline periods (see above) will be considered an unforeseen circumstance. Temperature increases will be measured as a 10-year running average.

Limits on the variation in other parameters (e.g., rainfall) are much more difficult to determine. Given the seasonality of rainfall in the study area, an increase in winter precipitation may be offset by increased evapotranspiration during the summer months (Intergovernmental Panel on Climate Change 2007). A decrease in winter precipitation would be exacerbated by increased summer temperatures, leading to increased drought. Therefore, it is not possible at this time to define limits of rainfall patterns that would qualify as unforeseen circumstances. Regardless of increases or decreases in precipitation, it is anticipated that the number of strong storm events will increase during the winter season (Kim 2005). These events are more likely to result in flooding than in increased soil percolation or water storage recharge (California Natural Resources Agency 2009). Increased frequencies of flooding and drought are taken into account in the sections below addressing these changed circumstances.

7.7.1.5 Wildfire

Fire is a natural component of many ecosystems and natural community types, including grasslands, and oak woodlands. For these natural communities, fire frequency and intensity influence community regeneration, composition, and extent. To ensure that fire-dependent natural community processes occur, the JPA will implement minimum suppression techniques (e.g., limiting the use of earth-moving equipment, discouraging the application of fire-retardant chemicals) and prescribed burning as part of the Conservation Strategy. It is possible, however, that large, intense, and frequent fires may have a negative effect on natural communities and restoration projects. For example, more frequent, intense fires caused by high fuel loads and increased encroachment by woody species into grasslands may negatively affect community composition by favoring early successional species.

For the HCP/NCCP, *wildfire* is defined as any fire on reserve system lands not prescribed by the JPA or its land manager that removes a sufficient extent of vegetation such that the intended habitat functions of the protected land for covered species is substantially degraded, as jointly determined by the JPA, CDFW, and USFWS.

Wildfire danger varies throughout Yolo County. The County is characterized by relatively level valley floor landscapes to the south and east; this lack of topography and complex fuels leads to very little severe fire behavior. In the increasingly hilly landscapes rising to the north and west, the

rugged topography creates a landscape where fires can spread rapidly upslope and access for suppression equipment is limited. The risk of wildfire is greatest for protected lands in the western portion of the Plan Area, which support extensive areas of natural vegetation. Lands within the eastern portion of the Plan Area, in the Conservation Reserve Area, are primarily characterized by intensively managed agriculture, which generally do not provide the conditions for uncontrolled or extensive fire events.

To determine the limits of changed circumstances, the size of catastrophic fires (e.g., fires over 10,000 acres) and their frequency (i.e., return interval) was assessed for the Plan Area. This assessment was based on both historic fire occurrence and the influence of climate change. These conservative estimates for the Plan Area were then scaled down to fit the reserve system. Since 2005, wildfires have burned more than 40,000 acres in Yolo County. Many of the fires have occurred along the Highway 16 corridor through Rumsey Canyon, two of which occurred as recent as the summer/fall of 2012. The most notable recent fire in Yolo County was in October 2006 when 11,000 acres of rangeland, destroyed three houses and six vehicles, and damaged three to four houses plus 15 barns and outbuildings. The Monticello Fire of 2014 has burned more than 6,000 acres in western Yolo County to date.

Climate change must also be taken into account when predicting fire frequency in the Plan Area. Throughout California, fire occurrence can be correlated with drought, moisture availability, and biomass (fuel) accumulation (Lenihan et al. 2003). Both "wetter and warmer" and "dryer and warmer" climate change scenarios are predicted for the Plan Area (Hayhoe et al. 2004). The warmer, dryer scenario would increase the occurrence of drought, while increased biomass production would result from the warmer, wetter scenario. Both of these scenarios have the potential to increase fire frequency due to either increase drought frequency or increase in biomass accumulation.

With climate change, it is assumed that fire occurrence frequency and area burned will increase by 25%. Recent literature analyzing the relationship between climate change and fire frequency in California identified a median fire occurrence and burned area increase of 30% by 2050 (Westerling et al 2009). This is a statewide estimate with fire occurrence increases ranging from 11% to 55% and burned area increases ranging from 11% to 70%. The largest increases for both fire occurrence and burned area are expected to occur in the Sierra Nevada, Northern California Coast and south Cascade Ranges. These increases are expected to occur by 2050.

The potential effects of climate change on fire frequency are anticipated to increase over the course of the permit term. At the beginning of the permit term, limited change from historic fire occurrences and burned area may be acceptable as a changed circumstance; however, the potential effects of climate change will grow over the permit term. In addition, at the beginning of the permit term, fire risks in reserve system will be low because it will be smaller. As such, it is felt that a 25% increase due to climate change represents a conservative estimate for the increase in fire frequency and burned area in the Plan area for the duration of the permit term.

Since the lands within the eastern portion of the Plan Area are primarily characterized as having minimal to moderate wildfire risk including the areas identified for the reserve system, it is foreseeable that 3 catastrophic fires could occur during the permit term, each burning 4 to 14% of the land cover types prone to wildfire within the study area. Increasing these values by 25% (0.04 * 1.25 and 0.14 * 1.25) to take climate change into account, the Plan anticipates up to 4 catastrophic

fires (greater than 10,000 acres) within the study area over the course of the permit term. This level of fire occurrence would be considered a changed circumstance for the purposes of this HCP/NCCP.

To minimize the risk of wildfire, the JPA will identify reserve system lands with a high risk of fire (e.g., grasslands situated near roadways) and implement fire risk reduction measures on those lands, including:

- Establishing and maintaining fuel breaks around high risk reserve system lands;
- Coordinating with state and local fire agencies to improve fire suppression preparedness for reserve system lands; and
- Developing post-fire monitoring plans.

In the event of a wildfire, the JPA will assess the proportion of the protected habitat area that has burned and its likely effects on habitat use by covered species. The JPA will make an initial determination of whether or not the fire constitutes a changed circumstance and will notify the wildlife agencies of the fire event.

If a changed circumstance is determined to exist, the JPA will implement an appropriate post-fire monitoring plan for a two-year period following the fire to assess the recovery of vegetation and wildlife. If over the course of the monitoring period it is determined that vegetation is not recovering sufficiently in the burned area to reestablish the functions of the affected habitat, the JPA will develop and implement through the adaptive management process a habitat restoration plan to enhance recovery of the affected habitat area to the extent practicable. Elements of habitat restoration plans may include provisions for planting and caring for native vegetation and controlling the establishment of invasive plant species.

7.7.1.6 Nonnative Invasive Species or Disease

Nonnative species and diseases currently occur in the Plan Area and will be present in the reserve system (e.g., bullfrogs). Additionally, there are nonnative species and diseases that exist in areas outside the Plan Area that have the potential to spread into the Plan Area and adversely affect the covered species and natural communities within the reserve system (e.g., sudden oak death). Due to the nature of invasive species and diseases, there is no unforeseen circumstance, only an upper limit to which changed circumstances will be funded. In other words, a new disease or invasive species spreading throughout the Plan Area within the permit term is a foreseeable event. However, if a disease or nonnative species spreads beyond the thresholds identified below, it will be considered a catastrophic event beyond the HCP/NCCP scope and the wildlife agencies will not require the JPA to fund remedial actions to address it.

The conservation strategy includes measures to reduce existing and prevent future infestations of nonnative invasive species and diseases. The monitoring program will identify and map existing diseases and nonnative species in the reserve system so that new ones can be identified quickly and a control or eradication plan can be put into place. However, it is possible the following events may occur despite implementation of the conservation strategy and monitoring program.

- New and aggressive nonnative species may invade the reserve system.
- Infestations of a new disease that affects covered or predominant species in the study area may have dramatic effects on the reserve system.

- Existing nonnative species or diseases may expand to unprecedented levels in the reserve system, perhaps due to changing climate.

Under the HCP/NCCP, the following are considered changed circumstances for which remedial measures will be funded.

- Infestations of new diseases or new nonnative invasive species affecting up to 25% of the extent (i.e., acres) of a predominant natural community (i.e., valley foothill riparian) or occupied covered species habitat within the reserve system in any given year[7].
- Spread of nonnative species or diseases on up to 25% above current conditions within the reserve system in any given year.

The reserve system builds on existing open space in the Plan Area, targeting specific natural communities and species habitat across a range of environmental gradients in geographically distinct areas. Diseases and nonnative species may spread into the Plan Area from lands adjacent to the Plan Area. It is foreseeable a single disease or invasive species would spread across the entire reserve system even if the HCP/NCCP and remedial measures are properly implemented. Such an event would be catastrophic and likely no effort by the JPA alone would be able to stop its spread. Therefore, if remedial measure implementation does not prevent the spread of the nonnative species or disease beyond the established thresholds, it will be considered a catastrophic event beyond the HCP/NCCP scope and the wildlife agencies will not require the JPA to fund remedial actions to address it.

In these situations, prior to ceasing or reducing remedial actions, the JPA must demonstrate the following to the wildlife agencies in writing:

- The changed circumstance was detected as soon as feasible and the wildlife agencies were notified.
- The JPA coordinated and worked actively with the wildlife agencies and other land managers to assess the changed circumstance and determine the best course of action.
- The JPA implemented remedial measures for the changed circumstance according to the HCP/NCCP but these measures failed to stop the spread of the disease or invasive species.
- The disease or invasive species is a serious problem outside the reserve system in the Plan Area and similar control measures implemented by others also failed to control their spread.

Based on current knowledge of likely diseases and nonnative species, disease spread at catastrophic levels is only reasonably likely in the study area for sudden oak death. For other known diseases or nonnative species, the remedial measure thresholds are assumed to be sufficient.

Sudden Oak Death is not currently found in the Plan Area; it is, however, found in adjacent Napa County. This disease spreads rapidly and may spread into the reserve system and affect Swainson's hawk nest trees and oaks in the valley foothill riparian natural community despite implementation of the conservation strategy, adaptive management, and remedial measures. If this occurs, the spread of the disease will not be limited to the reserve system and will affect oaks at the landscape

[7] The JPA will assemble the reserve system for the majority of the permit term. The JPA must complete all creation and restoration activities by Year 40 and all land protection by Year 45. The JPA will monitor current levels of disease and nonnatives relative to the current composition of the reserve system each monitoring year.

scale. If sudden oak death spreads beyond an estimated 25% of the oaks in the reserve system, it will be considered a catastrophic event beyond the HCP/NCCP scope and the wildlife agencies will not require the JPA to fund remedial actions to address it.

The spread of diseases or invasive species in excess of 25% above baseline conditions is foreseeable for sudden oak death and may be foreseeable for other diseases not currently known. Since these events are considered catastrophic, however, the JPA will only fund remedial actions for these circumstances up to a 25% increase in the extent (i.e., acres) for the predominant natural community affected, for any diseases or invasive species.

Nonnative animals . include, but are not limited to, invasive brown-headed cowbirds, bullfrogs, and introduced predatory fish. These species currently occur in the Plan Area, and conservation and monitoring actions to reduce or contain their occurrence within the study area have been developed.

When a new disease or nonnative species is detected or an existing disease or nonnative species begins to spread aggressively, the JPA will contact the wildlife agencies and other relevant agencies with authority over disease control to collaboratively determine the best method of measuring, monitoring, and eradicating or controlling the disease before it spreads. Remedial measures that address the invasion of nonnative species or disease follow the steps listed below.

- Determine the best method for measurement and tracking extent within 3 months of detection.
- Prepare a damage-assessment report within 6 months of detection.
- Recommend and plan actions to address the threat within 6 months of detection.
- Respond through adaptive management in ways consistent with permit obligations and with the consent of the wildlife agencies within one year of detection.

7.7.1.7 Flooding

The effects of floods on HCP/NCCP reserve system lands and covered species depend on several factors, including the severity of the flood event, its duration, and the type of habitat affected. Flood events are a natural process that maintain aquatic, riparian, and wetland ecosystems and small flood events are expected have relatively minor effects on protected natural communities and covered species. Furthermore, many of the covered species would not be adversely impacted by flooding because they are either: 1) adapted to flooding (e.g., the giant garter snake and western pond turtle); are likely to not be present or nesting during winter flood events (e.g., Swainson's hawk, western burrowing owl); or are capable of fleeing flooded areas (e.g., bank swallow, tri-colored blackbird). More severe flood events, however, can have deleterious consequences on protected resources, including erosion of protected habitats, deposition of sediment and debris on reserve system lands that damage habitat functions for covered species, and loss of vegetation plantings in restored riparian habitats.

Flood damage to protected natural communities and habitats caused by storms at or below a 100-year flood event on a given stream are considered to be a changed circumstance that are reasonably foreseeable over the term of the Yolo HCP/NCCP. Larger flood events are considered to be an unforeseen circumstance. A 100-year flood event was selected as the limit of changed circumstances for the 50-year permit term because the frequency and severity of flooding in the Plan Area is expected to increase with climate change (California Natural Resources Agency 2009).

Therefore, a flood event that currently has a 1% probability of occurrence per year (i.e., a 100-year event), is likely to have a greater probability of occurrence with climate change.

Following a flood event, the JPA will inspect affected reserve system lands within 45 days of the event to evaluate the extent of damage to the protected habitats and evaluate the need for implementing actions to rehabilitate affected habitat functions. If the habitat functions are unlikely to naturally reestablish the former conditions through natural processes at a similar or greater rate than with implementation of remedial management actions, the JPA will identify and implement, within 1 year of the flood event, management actions necessary to restore affected habitat conditions.

7.7.1.8 Drought

Drought is defined by the National Weather Service as "a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people" (National Weather Service 2008). The Plan Area is characterized by a mediterranean climate, with cool, wet winters and warm, dry summers. El niño and la niña climatic events typically cause large annual fluctuations in precipitation levels (Minnich 2007, Reever-Morghan et al. 2007). Precipitation primarily occurs in the form of rain from October through April, with very little precipitation in May through September. Drought is a natural part of mediterranean climates and drought conditions experienced over the term of the HCP/NCCP may result in the loss of restored riparian and wetland natural communities and agricultural habitats maintained in the reserve system. In 2008, the U.S. Department of Agriculture designated 11 counties in California, including Yolo County, as primary natural disaster areas because of losses caused by drought.

Historically, California has experienced multiple severe droughts. According to DWR, droughts exceeding three years are relatively rare in Northern California, the source of much of the State's developed water supply. According to the State of California Hazard Mitigation Plan, Yolo County has experienced one drought that resulted in a state disaster declaration.

Yolo County receives 18 inches of precipitation annually. In the Plan Area, drought is characterized as two or more consecutive water years with 75 percent or less than mean seasonal precipitation as measured at the Woodland rain gage in the Valley Landscape Unit and as averaged between the Knoxville Creek rain gage and Brooks rain gage in the Hill and Ridge Landscape Unit.

To estimate how many drought years might be expected during the permit term, annual natural reservoir inflow (i.e., inflow from local precipitation, not imported water) within the Plan Area was reviewed from 2014 back to 1974 by water year (July 1 to June 30). These data show that droughts lasting 2 to 6 years occurred 3 times over a 40-year period (National Climate Data Center 2014). Of these droughts, only a single event lasted 6 years. Based on the Yolo County Hazard Mitigation Plan (2012), historic data, and conservative application of climate change predictions, the HCP/NCCP will fund remedial actions for up to five droughts occurring during the permit term. Of the five droughts, only one is anticipated to be more than six years in duration. More than five droughts during the permit term, more than a single drought of six years, and any number of droughts exceeding six years in duration each are considered unforeseen circumstances and not funded by the Plan.

While climate change is anticipated to result in increased drought (potential precipitation is likely to decrease toward the end of the century), the extent of such change is not fully understood. Thus, the predicted drought potential during the permit term is conservative.

HCP/NCCP conservation land management plans (CM3, *Manage and Enhance Natural Communities* in Section 6.4, *Conservation Measures*) include drought monitoring and protection measures to minimize the risk of losing restored natural communities to drought. Preventative measures include the following actions.

- Monitoring Yolo County rain data and gages to determine if the seasonal rainfall at the end of March and April indicate a drought (near 75% of mean seasonal precipitation).
- Monitoring natural community restoration sites that are beyond their establishment periods (i.e., no longer sustained by irrigation) for stress due to low soil moisture or high evapotranspiration rates.

In the event of drought conditions, the JPA will evaluate habitat restoration sites to assess the degree of effect on natural community development and functions. Following the evaluation, the JPA will prepare a report that documents effects of drought on restoration sites and identifies management actions the JPA will implement through the adaptive management process (Section 6.5, *Monitoring and Adaptive Management*) to alleviate the effects of drought (e.g., providing supplemental irrigation of riparian plantings). For droughts that affect the availability of water for irrigation of HCP/NCCP protected cultivated lands, the JPA may, if practicable, purchase additional water supplies necessary to maintain crop types that support the target habitat functions of the cultivated land or acquire other natural communities such as fresh emergent wetlands or grasslands to replace the habitat functions provided by the affected cultivated land habitat.

7.7.1.9 Earthquakes

Earthquakes of less the 4.0 on the Richter scale (defined as "micro" or "minor" earthquakes by the USGS) occur frequently in the Plan Area and their effects on natural communities and covered species are expected to be very small or undetectable. While less common, earthquakes of "light" (magnitude 4.0 to 4.9) or "moderate" (5.0 to 5.9) are expected to have little to no effect on covered species or natural communities. These earthquakes may be large enough, however to cause moderate ground shaking that may trigger small to moderate-sized landslides. These landslides are a natural part of the ecosystems in the Plan Area. Damage to reserve system facilities from such minor to moderate earthquakes is expected to be low to none.

A large, catastrophic earthquake is typically defined in planning documents and engineering projects as having a magnitude equal to or greater than 6.7 (U.S. Geological Survey 2012). Although there are several faults within the Plan Area, the only fault in the County that has been identified by the CGS to be active or potentially active and subject to surface rupture (i.e., is delineated as an Alquist-Priolo Earthquake Fault zone) is the Hunting Creek Fault (sometimes referred to as the Hunting Creek-Berryessa Fault). The Hunting Creek Fault is an active fault located in the extreme northwestern corner of the Plan Area, with only a very short section of the fault occurring within the Plan Area. The Hunting Creek Fault is a right-lateral fault and has an average slip rate of 6 mm per year. The Dunnigan Hills Fault is the only other potentially active fault within Yolo County. It is located to the west of Interstate 5, between Dunnigan and northwest of Yolo in the unincorporated area of Yolo County.

In addition to the Hunting Creek and Dunnigan Hills faults discussed above, major regional faults outside the Plan Area but in the Coast Ranges and in the Sierra Nevada foothills are capable of producing ground shaking in the Plan Area. The April 19, 1892 Vacaville-Winters earthquake measured approximately 6.9 on the Richter scale and caused severe damage in Winters and lesser

damage in Davis, Woodland, and elsewhere in the Plan Area. The 1892 Vacaville-Winters earthquake was once attributed to the large regional feature, referred to as the Midland Fault, which extends into the Plan Area a short distance near Winters. The earthquake is now believed to have originated from a segment of a complex zone of faults, referred to as the Coast Range-Sierran Block Boundary (CRSBB), at the edge the western side of the lower Sacramento Valley. The CRSBB forms the western geomorphic boundary of the Central Valley with the Coast Ranges to the west. The CRSBB is currently recognized as a potential seismic source capable of generating moderate earthquakes that may affect the Plan Area. The faults within the CRSBB are considered capable of generating moderate to large earthquakes that may produce strong seismic shaking throughout the region, including the Plan Area. 11 moderate earthquakes (M 5.8 to 6.8) have been documented along the CRSBB zone during the last 150 years. The Coalinga earthquake (M 6.7) occurred within the CRSBB zone in 1983. As recently as August 2014, a magnitude 6.0 earthquake occurred near the West Napa Fault with tremors extending into the Plan Area (U.S. Geological Survey 2014).

The maximum expected earthquake in the Plan area at the Hunting Creek Fault over the next 30 years is estimated to be magnitude 7.1 (USGS 2014). As this is the primary active fault in the Plan area, any earthquake exceeding this magnitude is considered unforeseen for the purposes of this Plan.

The negative effects of a catastrophic earthquake are likely to manifest mostly as damage to reserve system infrastructure rather than to natural communities or species. Should any earthquake occur, the JPA will rebuild reserve system infrastructure and conduct post hoc monitoring of species or populations that are identified as being potentially negatively affected by the incident. Reserve system infrastructure will be repaired or rebuilt within two years. Remediation of enhancement, creation, and restoration sites within the reserve system affected by earthquakes during the permit term (i.e., as a result of landslides) will be remediated within two years of the earthquake. Site-specific covered species and natural community monitoring will be conducted for three years after the event if covered species or their habitats are adversely affected.

Damage to reserve system infrastructure, natural communities, and covered species from any earthquake of magnitude 7.1 or less will be remediated by the JPA. On cultivated lands, the landowner or agricultural lessee will remediate infrastructure necessary to support agricultural activity.

7.7.1.10 Loss of Swainson's Hawk Habitat and Populations Below Threshold

The conceptual strategy described In Appendix H, *A Proposed Conservation Strategy for the Swainson's Hawk in Yolo County*, outlines the process and assumptions through which two key thresholds are derived: suitable foraging habitat acres in the Plan Area (267,750 acres) and high value foraging habitat acres in the Plan Area (34,500 acres). The estimates and assumptions used in the conceptual strategy indicate that in order to maintain a population of 300 nesting pairs in the Plan Area (the approximate number currently present in the Plan Area), foraging habitat acres should consistently exceed these thresholds.

As described in Section 5.5, the JPA will monitor the following:

- Changes in crops and other agricultural land uses through annual review of the Yolo County Department of Agriculture.

- The distribution of crops and crop patterns on a 5-year basis by building on the existing GIS mapping program that uses available aerial photography of the Plan Area
- The Swainson's hawk population on a 5-year basis using a census based approach similar to the JPA's approach for the 2007 census.

If the amount of Swainson's hawk habitat falls below 267,750 total acres or 34,500 high value acres, the JPA will evaluate the effect on the nesting population in the Plan Area. If the nesting population is found to have fallen below 270 breeding pairs (10% below the target population to account for annual variability) concurrent with a reduction in either total or high value foraging habitat below the threshold acreages, the wildlife agencies will meet and confer within 30 days of the annual report to assess the need for further action. Initially, the wildlife agencies and JPA will investigate the status of Swainson's hawk populations throughout the Central Valley to determine whether or not population declines can be attributed at least in part to range-wide issues beyond the control of the JPA. If it is determined that the population decline is likely due primarily to not maintaining threshold acreages or other local land use issues, the wildlife agencies and the JPA will develop and implement a mutually agreeable plan of action to remedy the situation and achieve compliance with the stay-ahead provision. Remedies may include, but not be limited to, the following:

- To address future deficiencies in alfalfa acreage, a landowner incentive program might be established for the purpose of increasing high value foraging habitat. Participation in the program might initially focus on farmers with existing conservation easements acquired as Swainson's hawk foraging habitat, then expand to other locations as needed.
- To address future deficiencies in available suitable foraging habitat, the JPA could focus additional conservation efforts on an incentive program to remove unsuitable perennial crops (e.g., orchards and vineyards) and restore to a suitable foraging habitat land use.

7.7.2 Federal No Surprises

The Secretary of Interior established the federal No Surprises Regulation on March 25, 1998. It provides assurances to Section 10 permit holders that no additional money, commitments, or restrictions of land or water will be required should unforeseen circumstances requiring additional mitigation arise once the permit is in place. The No Surprises Regulation states that if a Permittee is properly implementing an HCP that has been approved by USFWS and/or NMFS, these agencies will not require additional commitment of resources, beyond that already specified in the HCP.

The Permittees request regulatory assurances (No Surprises) for all covered species in the HCP/NCCP. In accordance with No Surprises, the Permittees will be responsible for implementing and funding remedial measures in response to any changed circumstances as described in this chapter. The Permittees will not be obligated to address unforeseen circumstances but will work with the wildlife agencies to address them within the funding and other constraints of the HCP/NCCP should they occur.

The Permittees understand that No Surprises assurances are contingent on the proper implementation of the permits, Implementation Agreement, and HCP/NCCP. The Permittees also understand that USFWS may suspend or revoke the federal permit, in whole or in part, in accordance with federal regulations (50 CFR Section 13.27 and 13.28 and other applicable laws and regulations) in force at the time of such suspension.

7.7.3 Federal Section 7 Consultations

The USFWS will evaluate the direct, indirect and cumulative effects of the covered activities in its internal biological opinion that will be issued in connection with the HCP/NCCP and issuance of the section 10(a)(1)(B) permit. Accordingly, in any consultation under ESA Section 7 that occurs after the approval of the HCP/NCCP, the USFWS will ensure any biological opinion issued in connection with the proposed project that is the subject of the consultation is consistent with the HCP/NCCP's biological opinion. The proposed project must be consistent with the terms and conditions of the HCP/NCCP and the Implementing Agreement. Any reasonable and prudent measures included under the terms and conditions of a biological opinion issued subsequent to the approval of the HCP/NCCP with regard to the covered species and covered activities will, to the maximum extent appropriate, be consistent with the measures of the HCP/NCCP and the Implementing Agreement. The USFWS will not impose measures in excess of those that have been or will be required by the Permittees pursuant to the HCP/NCCP, section 10 permit, and Implementing Agreement.

7.7.4 State NCCP Assurances

Under the NCCPA, CDFW provides assurances to permittees commensurate with the long-term conservation measures and associated actions that will be implemented under the NCCP. In its determination of the level and term of the assurances to be provided, CDFW takes into account the conditions specific to the NCCP, including such factors as: the level and quality of information regarding covered species and natural communities, the sufficiency and use of the best available scientific information in the analysis of impacts on these resources, reliability of mitigation strategies, and appropriateness of monitoring techniques, including the use of centralized information to evaluate the effectiveness of the NCCP; the adequacy of funding assurances; the range of foreseeable circumstances that are addressed by the NCCP; and the size and duration of the NCCP.

The assurances provided under the NCCPA will, at a minimum, ensure that if there are unforeseen circumstances, no additional financial obligations or restrictions on the use of resources will be required of the Permittees without their consent. Specifically, the NCCPA directs that, "[i]f there are unforeseen circumstances, additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources shall not be required without the consent of plan participants for a period of time specified in the implementation agreement, unless [CDFW] determines that the plan is not being implemented consistent with the substantive terms of the implementation agreement." Like the provision in the ESA regulations, however, the NCCPA requires that CDFW suspend or revoke a permit, in whole or in part, if the continued take of a covered species would jeopardize its continued existence.

7.7.5 Conservation Contributions by State and Federal Agencies

It is anticipated that state and federal agencies, including USFWS and CDFW, will contribute to the conservation portion of the Plan. The Permittees recognize that state and federal funds cannot be guaranteed in advance of the approval of yearly budgets, nor can agency staff without the authority to commit these funds provide assurances of state and federal financial contributions. The Permittees seek assurance, however, that USFWS and CDFW will make every effort to assist the JPA in securing the funding outlined in Chapter 8, *Cost and Funding*, to contribute to species recovery

and to help implement the conservation portion of the HCP/NCCP. See also the discussion of funding contingencies in Chapter 8.

7.7.6 Staff Contributions by State and Federal Agencies

Successful implementation of the HCP/NCCP relies on the continued participation and feedback of representatives of USFWS and CDFW. As described in Chapter 7, USFWS and CDFW staff are expected to participate in JPA meetings and subcommittees as needed to evaluate and provide advice and applicable consent on HCP/NCCP implementation. In particular, USFWS and CDFW staff participation is critical to the success of the adaptive management and monitoring program. The Permittees request that USFWS and CDFW make every effort, given budget and workload constraints, to provide staff to serve on all appropriate committees and participate in discussions and meetings to ensure that the implementation of the HCP/NCCP is consistent with any findings upon which the permits are based.

7.7.7 Assurances for Private Landowners

Third parties may receive take authorization pursuant to Section 7.6, *Application Process for Take Authorization*. Once take authorization has been provided to a third party, it will remain in effect for that covered activity as long as the permits issued by CDFW and USFWS to the Permittees remain in effect. If the USFWS or CDFW suspend or revoke their permit, take authorization provided to those under the jurisdiction of the Permittees would also be suspended or revoked. In addition, if a local jurisdiction determines that one of its project proponents is in violation of the take permit (i.e., in violation of the conditions in Chapter 4, *Application Process and Conditions on Covered Activities*), the local jurisdiction will suspend or revoke take coverage extended to the project proponent and report the violation to the JPA, USFWS, and CDFW.

7.7.7.1 Neighboring Landowner Assurances

The HCP/NCCP requires the development of a reserve system that may eventually encompass approximately 29,362 acres of lands in the Plan Area for mitigation and to provide for conservation of species and natural communities (Tables 5-1(a), *Reserve System Land Types,* and 5-1(b), *Pre-permit Reserve Lands*). The JPA will protect, restore, enhance, and manage natural communities on these reserve system lands for the benefit of ecosystem functions, natural communities, and covered species. HCP/NCCP implementation is expected to result in the expansion of populations of covered species, and individuals or populations of these species may move to and colonize adjacent lands not within the reserve system as an inadvertent result of HCP/NCCP implementation. In recognition of this potential, the HCP/NCCP includes a process by which neighboring landowners may receive assurances through certificates of inclusion under the ESA section 10 and NCCPA section 2835 permits. The neighboring landowner assurances process provides for take of any incremental increases in the number of individuals or populations of covered species above the baseline conditions on neighboring lands. The assurances do not provide for take of existing populations or occupied habitat prior to the establishment of adjacent reserve system lands and, therefore, will not result in impacts relative to baseline conditions.

The JPA will provide certificates of inclusion for incidental take by neighboring landowners engaged in agricultural and rangeland activities that agree to participate, i.e., it is an "opt-in" process and landowners that do not wish to participate would not be required to do so.

Landowners that wish to voluntarily enroll their working lands into the HCP/NCCP and receive take authorization for the covered activities described in Section 3.4, *Covered Activity Category,* must follow the following steps to prepare an HCP/NCCP enrollment application package, as follows.

1. Conduct Baseline Surveys. The landowner will conduct surveys for all covered species with neighboring landowner protections and their habitat (i.e., natural habitat that may be present between agricultural fields and not the actively cropped fields themselves that may provide habitat) and identify all occurrences of species and habitat on the property on a map. The landowner may contract with and fund the JPA to conduct the baseline surveys. A baseline survey report, including maps of locations, will be provided to the JPA describing the location and quality of occupied habitat, location of occurrences, and estimate of number of individuals within each occurrence for all covered species on the property.
2. Identify Covered Practices. The landowner will provide to the JPA a written description of the on-going and expected future agricultural practices on the property.
3. Review of Enrollment Application. The JPA will review the enrollment application and determine if it meets all requirements of the HCP/NCCP, specifically the covered activities and the required avoidance of take of covered species as described in Section 4.3, *Conditions on Covered Activities.*
4. Enrollment and Authorization. The JPA will authorize take through a Certificate of Inclusion specifically for agricultural practices. Authorized take may not result in the property falling below the baseline conditions for covered species occurrences and habitat. The JPA may add any conditions, as appropriate to the HCP/NCCP, to the Certificate of Inclusion to ensure that HCP/NCCP goals and objectives are met.

There is no requirement under the HCP/NCCP that farmers and ranchers enroll in the HCP/NCCP or request certificates of inclusion. It is a voluntary "opt-in" program. The JPA will maintain a record of all applications provided by and certificates of inclusion provided to farmers and ranchers under this program, and any signed certificates of inclusion returned by landowners. The JPA will notify USFWS and CDFW annually of the number, location, and size of lands covered under certificates of inclusion. Copies of the certificates of inclusion will be provided to the USFWS and CDFW upon request. Certificates of inclusion do not transfer with the property.

7.8 Modifications to the Plan

The HCP/NCCP or incidental take permits can be modified in accordance with USFWS and CDFW regulations and the terms of the Implementing Agreement and the Permit. Plan modifications are not anticipated on a regular basis. A Permittee or the permitting agencies may request modifications. The categories of modification that are recognized, in order of significance, are administrative changes, minor modifications, and amendments, each of which is described below.

7.8.1 Administrative Changes

The administration and implementation of the HCP/NCCP will require frequent and ongoing interpretation of the provisions of the HCP/NCCP. Actions taken on the basis of these interpretations that do not substantively change the purpose or intent of the HCP/NCCP's provisions will not require modification or amendment of the HCP/NCCP or its associated authorizations. In

addition, these administrative changes will not trigger a new NEPA or CEQA analysis. Such actions related to the ordinary JPA administration and implementation of the HCP/NCCP may include, but are not limited to, the following:

- Clerical corrections to typographical, grammatical, and similar editing errors that do not change the intended meaning or to maps or other exhibits to address insignificant errors.
- Adaptive management changes to conservation measures, including actions to avoid, minimize, and mitigate impacts and those that contribute to conservation, or modifications to habitat management strategies developed through and consistent with the Adaptive Management Plan described in Section 6.5, *Monitoring and Adaptive Management*.
- Variations in the day-to-day management of HCP/NCCP reserve system lands, such as adjusting habitat management techniques and timing on the basis of observed changes in conditions in response to prior management actions;
- Annual adjustments to HCP/NCCP fees consistent with Chapter 8, *Cost and Funding*.
- Adjustments to monitoring or research protocols to incorporate new protocols approved by USFWS and CDFW.
- Other changes requested by the JPA determined to be administrative by the wildlife agencies.

7.8.2 Minor Modification

As part of the process of HCP/NCCP implementation, the JPA will likely need to make minor modifications to the HCP/NCCP from time to time to respond appropriately to new information, scientific understanding, technological advances, and other such circumstances. Minor modifications will not involve changes that would adversely affect covered species, the level of take, or the obligations of Permittees; therefore, these modifications do not trigger a new NEPA or CEQA analysis.

Minor modifications may include, but are not limited to, the following circumstances:

- Minor corrections to land ownership descriptions;
- Changes to survey, monitoring, reporting and/or management protocols for HCP/NCCP effectiveness, beyond those in response to changes in standardized protocols;
- Transfers of targeted habitat acreages among HCP/NCCP planning areas, provided such change does not preclude meeting reserve assembly requirements, significantly increase the cost of land management or preclude achieving covered species and natural community goals and objectives;
- All project-level adaptive management actions.
- Plan-level adaptive management actions that do not involve major changes in HCP/NCCP commitments and require a formal amendment to implement.
- Modification of existing or adoption of additional conservation measures that improve the likelihood of achieving covered species objectives, as long as the effects of implementation are consistent with the effects analysis of this Plan;
- Discontinuation of ineffective conservation measures;
- Minor changes to the biological objectives in response to adaptive management;

- Updates/corrections to the land cover or other resource maps and/or species occurrence data;
- Minor changes to the reporting protocol; and,
- Other proposed changes to the HCP/NCCP determined to be insubstantial and appropriate for implementation as a minor modification.

7.8.2.1 Minor Modification Process

The JPA, USFWS, or CDFW may propose minor modifications to the HCP/NCCP (as applied to both the federal and state permit) by providing written notice to the JPA, Permittees, USFWS, and CDFW. Such notice will include a description of the proposed minor modifications, an explanation of the reason for the proposed minor modifications, an analysis of its environmental effects including any impacts to covered species, and an explanation of why that party believes the effects of the proposed minor modifications would not:

- Significantly differ from, and would be biologically equivalent to, the effects described in the Plan, as originally adopted;
- Conflict with the terms and conditions of the Plan, as originally adopted; and
- Significantly impair implementation of the HCP/NCCP Conservation Strategy.

USFWS, CDFW, and the JPA may submit comments on the proposed minor modification in writing within sixty (60) days of receipt of notice. If any party does not concur with the proposed minor modification for any reason, the Minor Modification will not be incorporated into the HCP/NCCP. If USFWS and CDFW do not concur that the proposed minor modification meets the requirements for a minor modification, the proposal must be approved according to the Amendment process (see Section 7.8.3, Amendments). The Permittees, JPA, USFWS, and CDFW may utilize the informal dispute resolution process set forth in the HCP/NCCP Implementing Agreement (Appendix F, Implementing Agreement) to resolve disagreements concerning proposed minor modifications.

If the JPA is in agreement regarding the proposed minor modification, and USFWS and CDFW concur that the requirements for a minor modification have been met and the modification should be incorporated into the HCP/NCCP, the HCP/NCCP will be modified accordingly.

7.8.3 Amendments

Under some circumstances, it may be necessary to make changes to the HCP/NCCP that are more significant than administrative actions or minor modifications described above. Any proposed changes to the HCP/NCCP that do not qualify for treatment as administrative actions or minor modification, as defined above, will require an Amendment to the HCP/NCCP. Amendment to the HCP/NCCP will also require corresponding amendment to the permits in accordance with applicable laws and regulations regarding permit amendments. The JPA will be responsible for submitting any proposed amendments to USFWS and CDFW.

Amendments to the HCP/NCCP will likely occur very infrequently, and may not occur at all. The process for amendments is described below for each permit. Amendments include, but are not limited to, the following:

- Substantive changes to the boundary of the Plan Area, permit area, or reserve area.
- Additions to or deletions from the covered species list.

- Increasing the allowable take limit of covered activities.
- Adding substantial new covered activities to the Plan.
- Modifications of any important action or component of the conservation strategy, including funding, that may substantially affect levels of authorized take, effects of the covered activities, or the nature or scope of the conservation program. This includes a reduction in the conservation strategy in the event that covered activities and fee funding do not occur as projected.
- A change in the permit duration.

7.8.3.1 Amendment Process for the ESA Permit

To amend the Section 10(a)(1)(B) permit, the JPA Board will submit a formal application to USFWS. This application must include a revised HCP/NCCP, a permit application form, any required fees, a revised Implementing Agreement, and the required compliance document under NEPA. The appropriate NEPA compliance process and document will depend on the nature of the amendment being proposed. A new scoping process may be required, dependent upon the nature of the amendment. If additional scoping is deemed appropriate and necessary, USFWS and/or NMFS will publish a Notice of Intent in the Federal Register to initiate the scoping process. Upon submission of a completed application package, USFWS and/or NMFS will publish a notice of the proposed application in the Federal Register, initiating the NEPA and HCP amendment review process. After public comment, USFWS or NMFS may approve or deny the permit amendment application.

7.8.3.2 Amendment Process for the NCCP Permit

Procedures for applying for an amendment to the NCCP permit are included in the Implementing Agreement and will be processed in accordance with applicable NCCPA requirements. The NCCP permit amendment will be subject to the requirements of CEQA. Following compliance with CEQA, CDFW will either approve or deny the permit amendment. To approve the permit amendment, CDFW must make appropriate NCCPA and CEQA findings.

7.9 Data Tracking and Reporting

7.9.1 Reporting

The JPA will prepare, on a regular basis (at least annually), planning documents and implementation reports to provide an accounting of compliance with the HCP/NCCP and its associated authorizations and to facilitate interagency coordination, scientific exchange, and public outreach. The ESA requires habitat conservation plans to establish monitoring programs to assess the effects of plan implementation on covered species. In addition, the USFWS Five-Point Policy recommends that such plans provide for annual reporting on matters related to compliance with permit terms and conditions. Similarly, the NCCPA requires that implementation agreements include "provisions for periodic reporting to USFWS and [CDFW] and the public for purposes of information and evaluation of plan progress." The JPA will, over the term of the HCP/NCCP, submit annual reports and plans to USFWS and CDFW that serve the following purposes:

- Provide the necessary data and information to demonstrate that the HCP/NCCP is being properly implemented;
- Identify the effect of plan implementation on covered species and on the effectiveness of the conservation strategy at advancing the HCP/NCCP's biological goals and objectives;
- Document actions taken under the adaptive management program (e.g., process, decisions, changes, results, corrective actions); and,
- Describe schedules and costs related to the implementation of actions over one-year timeframes.

Throughout the course of plan implementation, the JPA will prepare the following documents:

- Annual workplan and budget;
- Annual progress report; and
- Ten-year comprehensive review.

These documents will provide the information necessary to enable USFWS, CDFW, other state and federal agencies, local agencies, stakeholders, and the general public to assess on an ongoing basis the progress and performance of the Plan toward meeting its biological goals and objectives, and to make informed recommendations to the JPA regarding Plan implementation. To accommodate access to this information, these reports will be available to the public and posted on the JPA website.

7.9.2 Compliance Tracking

The JPA will track all aspects of compliance with the permits, Implementing Agreement, and HCP/NCCP. To track compliance, the JPA will maintain data as specified below.

- The JPA will track the amount of land cover, modeled habitat for covered species, and critical habitat temporarily and permanently removed as a result of covered activities regularly, but no less than annually by overlaying impacts that year (and cumulatively) with each species model in a GIS exercise to ensure that impact caps are not exceeded. Modeled habitat impacts and modeled habitat acquisition requirements will be tracked according to the most recently developed land cover maps and habitat models. Implementation of species surveys described in Chapter 5, *Effects on Covered Species and Natural Communities*, and the remaining conservation strategy will be directed by the most current land cover maps and habitat models updated and maintained by the JPA throughout the permit term.
- The location, extent, and timing of land acquisition and Plan reserve establishment.
- The status of implementation of each conservation action in Chapter 6, *Conservation Strategy*.
- The success of the conservations actions in meeting the biological objectives in Chapter 6, *Conservation Strategy*.
- Descriptions of recorded conservation easements, lands acquired in fee title, interagency memorandums of agreement, or any other agreements entered into for the purposes of protecting, enhancing, restoring, or creating covered species habitat.
- The location, extent, and timing of effects on land cover types, based on reports submitted by project proponents and Permittees for take authority under the HCP/NCCP.

- The location and extent of compliance with the species occupancy requirements.
- The location, extent, and timing of restoration or creation of applicable land cover types.
- The location, extent, timing, and progress of plant occurrence creation and enhancement.
- The location, extent, timing, and success rates of implementation of all other conservation actions described in Chapter 6, *Conservation Strategy* (e.g., preparation of reserve unit management plans, including recreation plans, construction of artificial perches, conducting monitoring).

The purpose of monitoring this information will be to track the JPA's progress toward successful implementation of the conservation strategy described in Chapter 6, *Conservation Strategy* of this HCP/NCCP. This tracking will help ensure that habitats for covered species and natural communities are conserved within the reserve system at a rate commensurate with the timing and magnitude of effects from covered activities.

The data will also be linked to supporting information documenting Plan compliance. These reports and other data will be stored and archived electronically whenever possible. Appropriate supporting information includes the following categories.

- Application material submitted for covered activities.
- Preconstruction survey reports.
- Reports and other documentation related to the screening, selection, and acquisition of reserve lands.

HabiTrak is a standardized database developed by CDFW and others to track NCCP implementation. The database developed for the Plan must be compatible with the HabiTrak system or its successor so that compliance tracking for this Plan can be compared with other NCCPs in California.

The monitoring and adaptive management program described in Chapter 6, *Conservation Strategy* will support compliance tracking. In addition, the monitoring program includes effectiveness monitoring, status and trends monitoring, and directed studies aimed at addressing key management or ecological questions. The data tracking system will be developed to assemble, store, and analyze all monitoring data in the program. The details of the monitoring program will not be developed until individual reserve unit management plans are prepared for each reserve. By necessity, therefore, the data tracking system for the monitoring and adaptive management program cannot be finalized until after this Plan is completed.

7.9.3 Annual Progress Reports

The JPA will prepare an annual progress report to provide a summary of the activities carried out during the previous implementation year. The JPA will complete annual progress reports within 3 months of the close of each reporting year to provide sufficient time to compile data and complete analyses of monitoring data. The JPA will develop a standardized format for annual progress reports. Final annual progress reports will be maintained in the HCP/NCCP implementation database (see Section 7.9.1, *Database Development and Maintenance*).

Each annual progress report will provide the following information.

- Documentation of the implementation of habitat conservation measures (protection/enhancement/restoration), including the following information:
  - A summary of the completed or in-progress habitat conservation actions, including information related to type, extent, and location of restored, enhanced, and existing protected habitats and natural communities. The report will document, on an annual and cumulative basis, the habitat conservation actions completed by the JPA and its partners.
  - A summary of all land management activities undertaken on HCP/NCCP reserve system lands and a discussion of overall and site-specific management issues encountered by the JPA.
  - Identification of habitat protection, restoration, or enhancement actions that have not been implemented in accordance with the implementation schedule (i.e., behind or ahead of schedule) and an explanation for the deviation from the schedule.

An assessment of the nature and extent of the impacts of covered activities on natural communities and covered species, including the following information:

- A description of each covered activity conducted, the entity responsible for the covered activity, and the location of habitat permanently or temporarily removed or disturbed by the covered activity;
- A cumulative summary of all impacts of HCP/NCCP covered activities on covered natural communities and covered species habitats, habitat mitigation implemented to address these impacts, and a description of how implementation of conservation measures is roughly proportional in time and extent to the impacts on covered species and their habitats;
- Amount of authorized take of species habitat and reporting of any observed harassment or mortality of covered species; and
- The status of the HCP/NCCP reserve system assembly with respect to authorized take/habitat loss.

An evaluation of the results of monitoring and directed studies, including the following:

- A description of monitoring activities undertaken during the reporting period and a summary of monitoring results, data analysis results, and the knowledge gained from monitoring that is valuable to adaptive management.
- A description of all HCP/NCCP directed studies conducted during the reporting period, a summary of study results to date, and a description of how these results were or will be integrated into implementation.

A description of adaptive management activities, including the following:

- A description of the adaptive management decisions made during the reporting period, including how existing information was used to guide these decisions and the rationale for the actions.
- A description of the use of independent scientists or other experts in the adaptive management decision-making processes.
- A description of adopted and recommended changes to the conservation measures, avoidance and minimization measures, and monitoring plan (e.g., monitoring protocols, variables,

analytical methods) through the adaptive management process based on interpretation of monitoring results and research findings.

A financial report describing the following:

- Funds provided to the JPA and the source of those funds.
- Annual and cumulative expenditures by major cost category.
- Deviations in expenditures from the annual budget and other relevant information as appropriate.

A description of implemented actions to respond to changed circumstances, including the following:

- A description of the changed circumstance and its effects on covered species and natural communities.
- A description of the actions taken to address the changed circumstance and the effectiveness of those actions, including the outcomes of actions to address changed circumstances from earlier years.
- A description of any unforeseen circumstances occurrences and the process taken to address them.
- A summary of any administrative changes, minor modifications and revisions, or formal amendments to the Plan proposed or approved during the reporting period.

7.9.4 Ten-Year Comprehensive Review

The HCP/NCCP adaptive management plan requires 10-year reviews of HCP/NCCP implementation to provide the JPA with a longer term and methodical process to periodically evaluate its progress toward achieving the biological goals and objectives and assessing its implementation procedures. The JPA will prepare a Ten-Year Comprehensive Review document and make it available to the USFWS, CDFW, and Advisory Committee within six months following the end of each HCP/NCCP 10-year implementation period.

The primary purpose of the Ten-Year Comprehensive Review is to provide a periodic, program-level assessment of the progress made under the HCP/NCCP toward achieving the biological goals and objectives. As such, the review will be focused on identifying and evaluating broad ecological trends within the Plan Area, including covered species abundance, distribution, and population growth rate; ecological processes and stressors; natural community distribution, function, and diversity; habitat restoration extent and functionality; and other relevant measures.

The objectives of the Ten-Year Comprehensive Review are:

- To provide an overview of the status of HCP/NCCP implementation, including implementation of conservation measures and the progress made toward achieving biological goals and objectives;
- To assess covered species trends and habitat conditions associated with HCP/NCCP implementation relative to overall trends and conditions for covered species and natural communities based on all relevant information (i.e., not limited to HCP/NCCP data and reports);
- To evaluate the relevance of the various monitoring actions, directed studies and outside research to the implementation of conservation measures; and

- To evaluate changes that have been made in the implementation of the HCP/NCCP and set out potential modifications that may be advisable in the future based on new information and lessons learned.

The Ten-Year Comprehensive Review will look back over the entire implementation period (not just the prior ten years since the last review) to build on cumulative data and knowledge. Ten-Year Comprehensive Reviews will include critical evaluations of the information and assumptions upon which the HCP/NCCP has been based and of the efficacy of the conservation measures in light of monitoring data and the analysis and synthesis of information through the adaptive management process.

The Ten-Year Comprehensive Review will also include an evaluation of the Plan's monitoring program, assessing such issues as the program's capacity to adequately measure the HCP/NCCP's progress toward achieving biological goals and objectives. The review will discuss the lessons that have been learned during the course of implementation and reach conclusions regarding how best to approach monitoring into the future. The review will also afford an opportunity to evaluate the HCP/NCCP biological goals and objectives and assess their continued relevance in light of new information that has become available.

The JPA will post the Ten-Year Comprehensive Review on the JPA website and include a summary of the review to assist stakeholders and the public in their understanding of the report.

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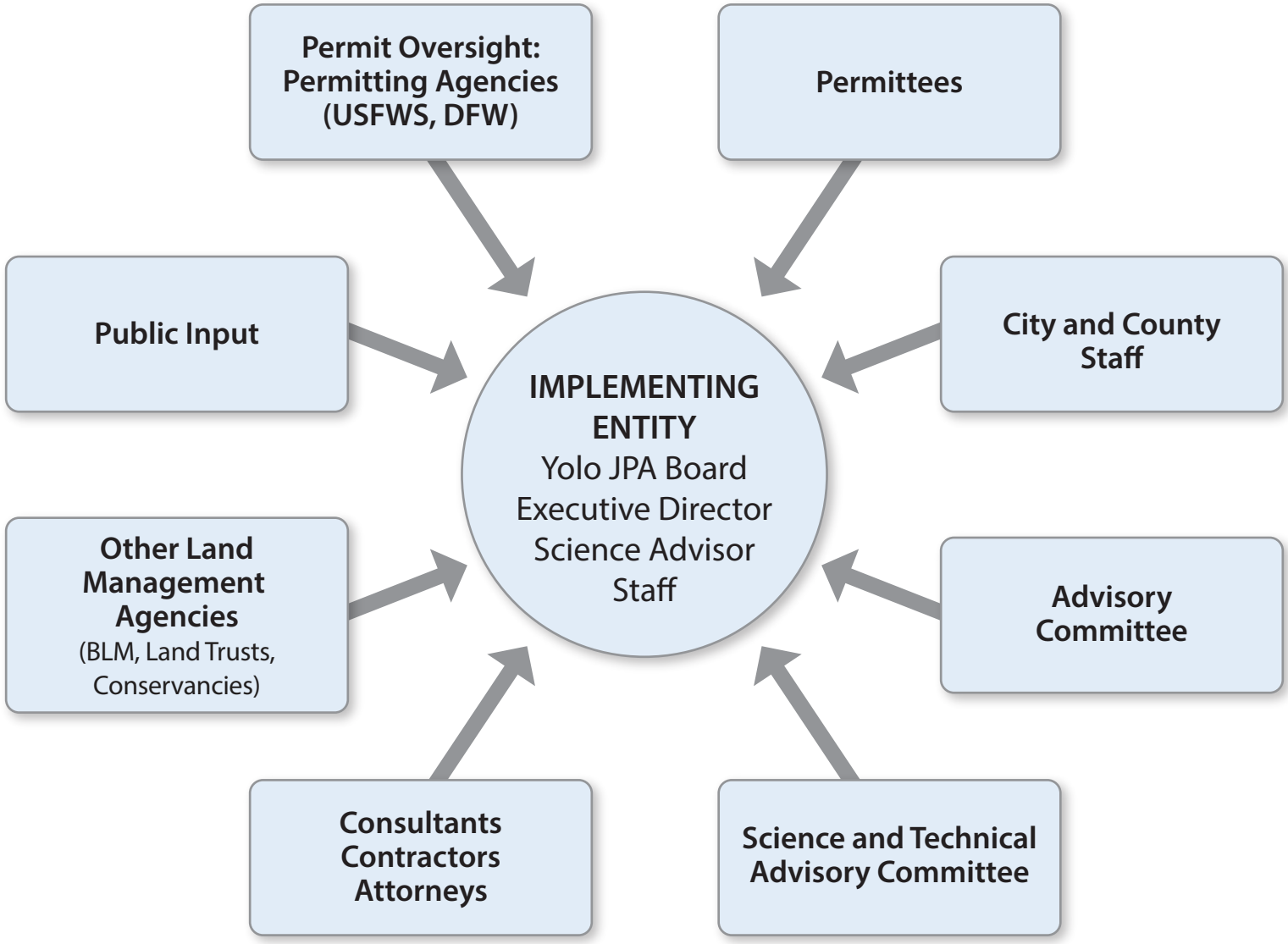

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Figure 7-1
Yolo NHP Organizational Structure

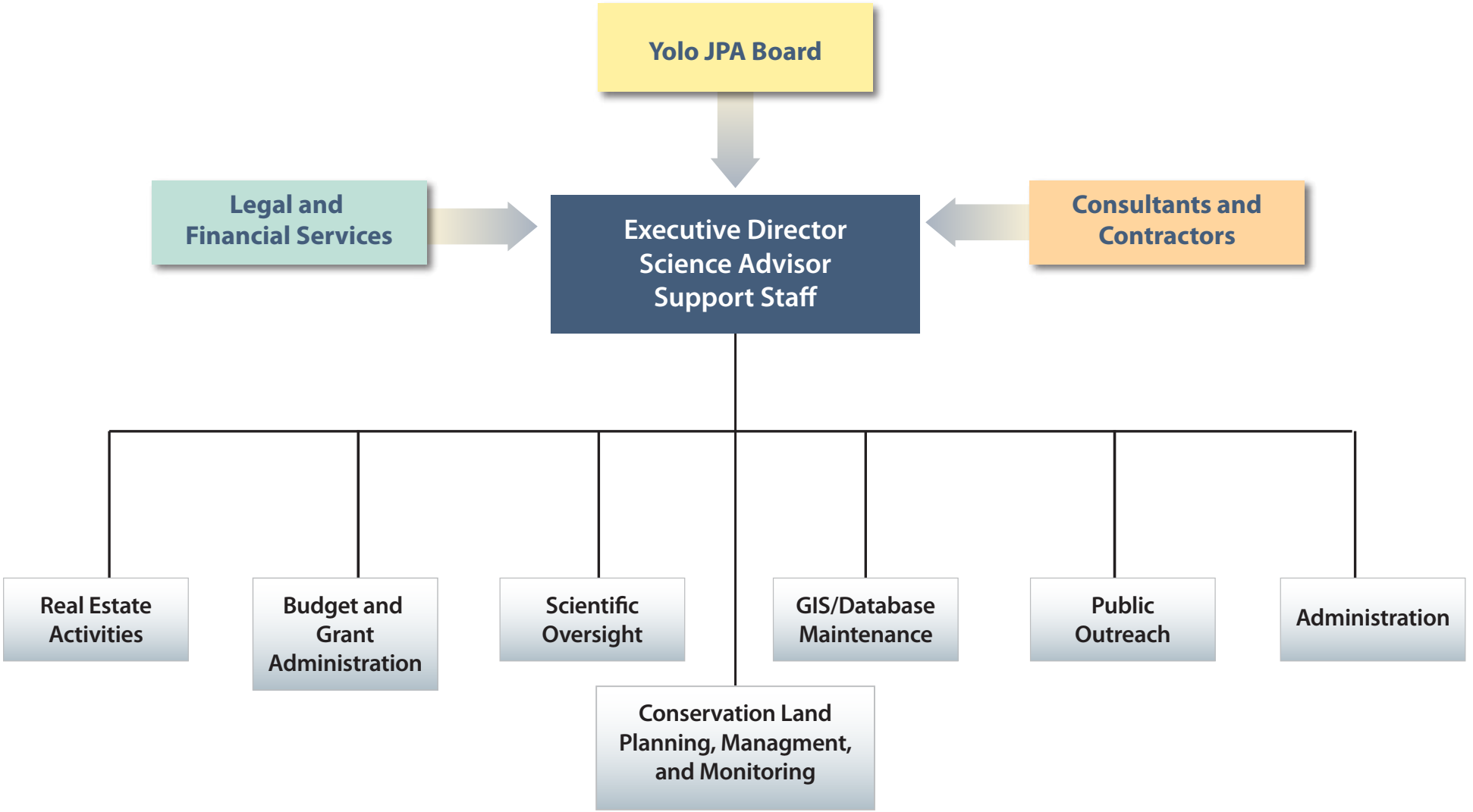

Figure 7-2. Organization and Functions of the Yolo NHP Implementing Entity

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The following steps must be taken by project proponents with each use of the Permits. *See text for description of each step.*

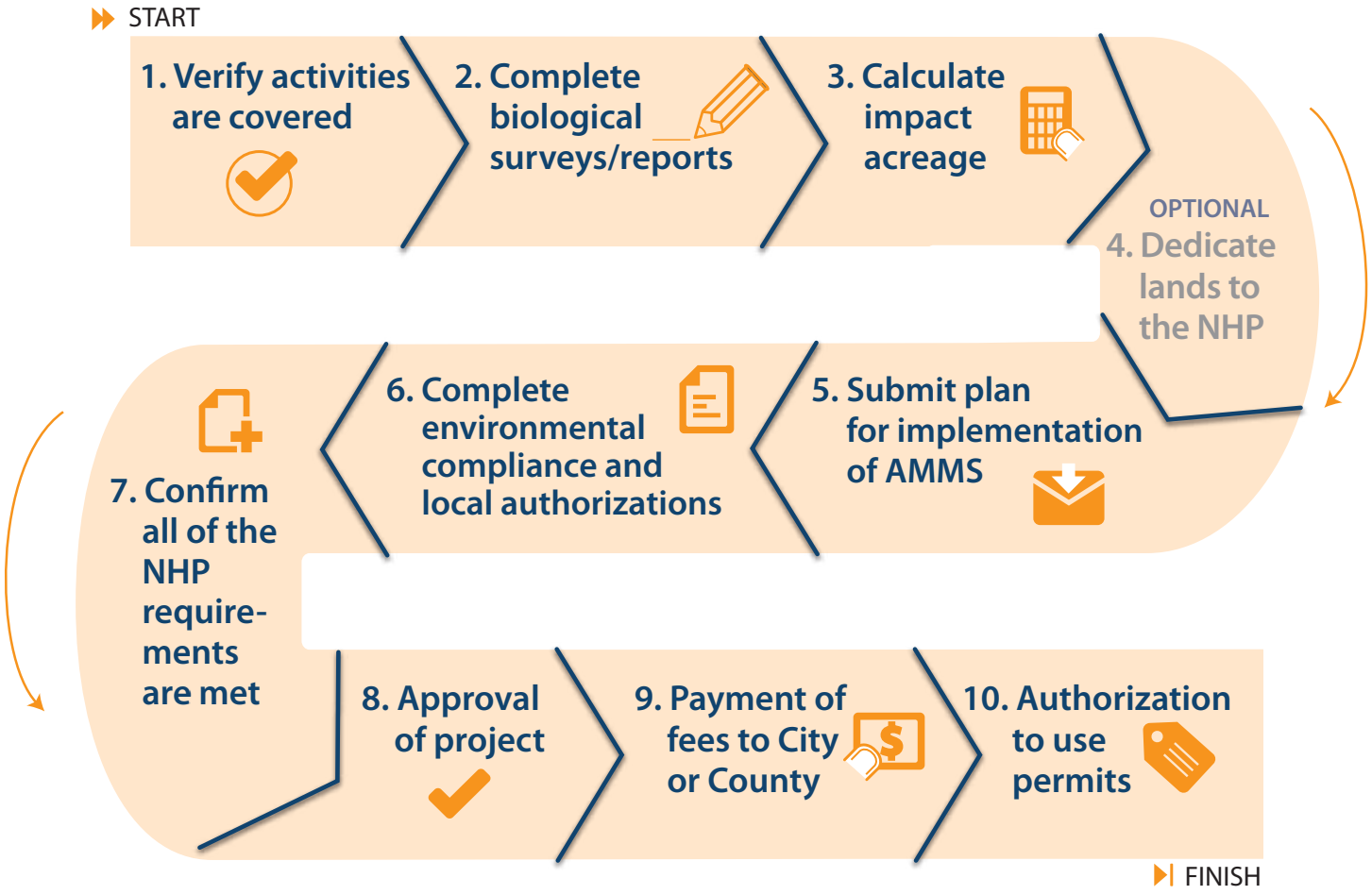

Figure 7.3 Process for Project Proponents' Use of Permits

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