Chapter 8
Costs and Funding

8.1 Introduction

This chapter describes the methods the Yolo Habitat Conservancy (Conservancy) used to estimate the costs and funding needed to implement the Yolo HCP/NCCP over the 50-year duration of the Permits. This chapter also identifies fees and other funding sources that support implementation of the Yolo HCP/NCCP, the funding needed to support ongoing management of the reserve system after the permit term ends, and funding adequacy. As described in Section 8.4.5, *Funding Adequacy*, if any funding source delivers less than expected revenue over the duration of the permits, the Permittees and wildlife agencies will meet and discuss modifications to the Plan, up to and including a major amendment.

8.2 Cost to Implement the Yolo HCP/NCCP

The Conservancy estimated the full cost of Yolo HCP/NCCP implementation to demonstrate that adequate funding is available to meet regulatory standards. The process to estimate costs involved many assumptions about how the reserve system would be assembled, how working landscapes would be integrated in the reserve system, and how conservation measures would be implemented over time and maintained in perpetuity. The assumptions are consistent with the specifics of the conservation strategy outlined in Chapter 6, *Conservation Strategy*. The costs are identified for planning purposes only. The Conservancy will prepare and approve a budget for Plan implementation annually, based on current information and projections regarding Yolo HCP/NCCP assets, revenues, and expenses. Major cost categories are listed below and summarized in this chapter.

- Establish reserve system;
- Restore natural communities;
- Manage and enhance easement and pre-permit reserve system lands;
- Monitoring, research, and scientific review;
- Plan administration;
- Local partner activities in riparian corridors;
- Contingency;
- Costs in perpetuity; and
- Plan preparation costs.

Table 8-1, *Yolo HCP/NCCP Cost Summary by Cost Category, 50-year Permit Term*, shows the anticipated cost of each category for the Yolo HCP/NCCP by five-year period and cumulatively for the 50-year permit term. Cost estimates summarized by five-year period are generalized predictions of the timing of funding needs. Annual costs will vary over the 50-year permit term because of the

increase in the size of the reserve system over time and the schedule of restoration activity. All costs are in 2017 dollars. Cost factors were originally developed in 2014 and were updated to reflect mid-2017 values based on changes in the Consumer Price Index (as identified in Table 8-10, *HCP/NCCP Fee Adjustment Indices)* and, for some land cost factors, analysis of updated data on trends in agricultural land values.[1] Limited management, monitoring, and administrative responsibilities will continue in perpetuity beyond the permit term. Those costs are estimated as an average annual cost.

8.3 Cost Estimate Methodology

To estimate the costs of the Yolo HCP/NCCP, the Conservancy developed a cost model to identify the specific costs in the major cost categories (listed above) (Appendix H, *Cost Supporting Materials*, provides the assumptions and output of the model). The Conservancy designed the cost model to demonstrate that the Conservancy has reasonably estimated the implementation costs of the Yolo HCP/NCCP. The Conservancy refined the model structure from cost models developed for other regional HCPs and NCCPs.[2] The cost model generates conservative estimates of the expenses of the Conservancy over the permit term and in perpetuity to allow the Conservancy to determine funding needs and develop an appropriate fee structure. During Plan implementation, the Conservancy will update the cost model to assist with the HCP/NCCP planning process as the cost assumptions are refined, based on actual experience.

The sections that follow describe the cost categories and unit cost factor assumptions and sources. The Conservancy developed cost assumptions by using local comparable cost data from land managers in the Plan Area, when available, and other sources when data from local agencies were unavailable. Examples of local sources of cost data include the Yolo Land Trust, Yolo County, and Yolo County mitigation banks.

Details regarding each cost category and the key assumptions the Conservancy used to develop the Yolo HCP/NCCP's cost estimate are provided below. Section 8.3.8, *Costs in Perpetuity*, describes the costs in perpetuity. See the cost model in Appendix H, *Cost Supporting Materials*, for an accounting of all assumptions.

8.3.1 Establish Reserve System

Reserve system assembly is the largest single component of the Yolo HCP/NCCP's costs, totaling about $218 million over the permit term, or about 54 percent of Plan costs (Table 8-1, *Yolo HCP/NCCP Implementation Cost Summary by Cost Category, 50-year Permit Term*). The reserve system assembly cost category includes acquisition costs (i.e., the price of the land or conservation easement or related enrollment costs for pre-permit reserve lands), the cost to conduct pre-acquisition assessments, and transaction costs. The cost to acquire cultivated lands and grassland in fee title for wetland restoration is not included in this section but, rather, is included as a cost in Section 8.3.2, *Restore Natural Communities*.

[1] Specifically, the agricultural land cost factors were originally based on analysis of *2014 Trends in Agricultural Land and Lease Values* published by the California Chapter of the American Society of Farm Managers and Rural Appraisers (ASFMRA). The updated 2017 cost factors are based on analysis of *2017 Trends in Agricultural Land and Lease Values*.

[2] The Santa Clara Valley Habitat Plan (an approved HCP/NCCP), the East Contra Costa County HCP/NCCP (an approved HCP/NCCP), and the Placer County Conservation Plan (an in-process HCP/NCCP).

The Conservancy based the reserve system assembly cost estimates on the land protection mechanisms specified in Chapter 6, *Conservation Strategy,* for Conservation Measure 1: Establish Reserve System. The proposed reserve system has two integrated land elements that, together, meet the conservation strategy requirements described in Chapter 6, *Conservation Strategy*.

1. Newly protected land acquired in fee title or by conservation easement, and
2. Pre-permit reserve lands enrolled in the Plan.

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Table 8-1. Yolo HCP/NCCP Implementation Cost Summary by Cost Category, 50-year Permit Term (rounded to the nearest thousand)

	Permit Period (years)												
Cost Category[a]	**Start up**	**1 - 5**	**6 - 10**	**11 - 15**	**16 - 20**	**21 - 25**	**26 - 30**	**31 - 35**	**36 - 40**	**41 - 45**	**46 - 50**	**50 Year Total**	**Average Annual Cost**
Establish Reserve System, except restored lands[b]	$0	$24,531,000	$24,270,000	$24,270,000	$24,270,000	$24,270,000	$24,270,000	$24,270,000	$24,099,000	$24,126,000	$0	$218,376,000	$4,367,520
Restore Natural Communities[c]	$0	$7,738,000	$7,944,000	$8,086,000	$8,204,000	$8,292,000	$8,398,000	$8,552,000	$8,693,000	$1,073,000	$1,169,000	$68,150,000	$1,363,000
Manage and Enhance Easement & Pre-Permit Reserve Lands[d]	$0	$1,405,000	$1,478,000	$1,352,000	$1,417,000	$1,365,000	$1,431,000	$1,497,000	$1,563,000	$1,634,000	$1,327,000	$14,468,000	$289,360
Monitoring, Research & Scientific Review, except restored lands[d]	$0	$1,240,000	$1,415,000	$1,642,000	$1,689,000	$1,917,000	$1,953,000	$2,181,000	$2,408,000	$2,375,000	$1,982,000	$18,802,000	$376,040
Plan Administration	$0	$3,590,000	$3,598,000	$3,454,000	$3,462,000	$3,567,000	$3,429,000	$3,437,000	$3,347,000	$3,209,000	$3,053,000	$34,145,000	$682,900
Local Partner Activities in Riparian Corridors	$0	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$2,152,000	$21,520,000	$430,400
Contingency	$0	$3,267,000	$3,287,000	$3,297,000	$3,321,000	$3,358,000	$3,365,000	$3,410,000	$3,445,000	$3,225,000	$753,000	$30,727,000	$614,540
Total	$0	$43,922,000	$44,144,000	$44,253,000	$44,514,000	$44,921,000	$44,997,000	$45,498,000	$45,707,000	$37,794,000	$10,436,000	$406,187,000	$8,124,000

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Table 8-2, *Yolo HCP/NCCP Newly Protected Lands by Means of Acquisition*, shows the cost model assumptions for acquiring newly protected lands (see also Table 6-1(b), *Reserve System Land Types)*. The conservation strategy commits to acquisition of 24,406 acres of a variety of land cover types. For the purposes of Plan cost estimates, the Conservancy assumes acquisition of an additional 135 acres of "non-target" land (about five percent more than the commitment) to satisfy Plan commitments for targeted wetland land cover types.[3] These 135 acres are not a commitment under the HCP/NCCP, but their acquisition was assumed for costing purposes. In addition, the Conservancy will acquire 956 acres of cultivated lands and grassland to meet mitigation and conservation requirements to restore wetland, riparian, lacustrine, and riverine natural communities (see Section 8.3.2, *Restore Natural Communities*). Plan costs are therefore based on acquisition of 25,497 acres (24,406 + 135 + 956 acres = 25,497 acres) of newly protected lands. Consistent with the conservation strategy, the Conservancy will generally acquire conservation easements on all but the cultivated lands and grassland acquired for restoration.[4]

The balance of the reserve (8,000 acres) will come from pre-permit reserve lands, defined as lands that are already in public ownership or protected under existing conservation easements that contribute to the biological goals and objectives of the Yolo HCP/NCCP (Table 6.1(b), *Reserve System Land Types*).[5] The Conservancy has conducted a detailed inventory and evaluation of almost 50 sites in the Plan Area that, in whole or in part, could qualify for enrollment. The combined acreage of all of the sites evaluated is about 9,400 acres, 1,400 acres more than the pre-permit reserve target; therefore, not all sites will be enrolled. See Appendix H *Cost Supporting Materials*, Table 6 for a list of the likely inventory from which pre-permit reserve lands would be enrolled. (Furthermore, other sites not in the current list may be considered or enrolled if they qualify.) The Conservancy evaluation of management plans and easement terms for the pre-permit reserve lands, with which the wildlife agencies preliminarily concurred, indicates that about 4,900 acres of pre-permit reserve lands on 23 sites will qualify for enrollment in the Yolo HCP/NCCP without additional acquisition costs. Table 8-3, *Yolo HCP/NCCP Pre-Permit Reserve Lands,* lists these 23 sites by number, identifies the managing agency, and provides the size of each site in acres. The balance of the enrolled pre-permit reserve lands (about 3,100 acres) will come from sites that will require some modifications to the terms of the easement or the establishment of new conservation easements, consistent with the Yolo HCP/NCCP requirements. The wildlife agencies will review and approve acquisitions for the reserve system as described in Section 7.5.2, *Acquisition Process*. Such modifications or new easements will generate acquisition costs for the Conservancy, as discussed below.

[3] Land acquisition to meet small targets will most likely exceed those targets because of parcel boundaries and the limitations of available acquisition from willing sellers.

[4] As part of the Cache Creek Area Plan, Yolo County has committed to enrolling in the reserve 276 acres of reclaimed off-channel mining land. The Conservancy will add habitat conservation easements on these properties and the acres will count towards the newly protected lands commitment. These sites are identified in Appendix H, *Cost Supporting Materials*, Table 3: Fee Title and Easement Acquisition Input. Also see Yolo Habitat Conservancy. June 26, 2015. *Local Cost Share Sources and Potential Approaches.* Memorandum to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife from Petrea Marchand, Executive Director, and Chris Alford, Alford Environmental, regarding Yolo HCP/NCCP Local Cost Share Source Assessment.

[5] The 8,000 acres of pre-permit reserve lands does not include the 276 acres of reclaimed off-channel mining land described in footnote 4, above.

8.3.1.1 Acquisition Costs

As indicated in Table 8-2, *Yolo HCP/NCCP Newly Protected Reserve Lands by Means of Acquisition,* 70 percent of the newly protected lands will come from cultivated lands. The cost model and funding plan require reasonable planning-level estimates of this important component of Plan implementation. The cost model uses per-acre averages, based on the best available current information. Actual land costs and easement values will vary significantly around these averages, depending on numerous parcel-specific factors. Qualified appraisals of each potential acquisition site will establish actual fee title and easement costs.

Table 8-2. Yolo HCP/NCCP Newly Protected Lands by Means of Acquisition

	A	B	C	D = A + B	E = C + D	
Natural Community	**Newly Protected Lands Commitment**	**Additional Acquisition to Ensure Commitment of Sensitive Habitats[a]**	**Additional Fee Title Acquisition for Restoration**	**New Easement Acquisition**	**Total Acres Acquired**	**Percent**
Cultivated Lands						
Agriculture – Rice	2,800	—	—	2,800	2,800	11.0%
Agriculture – Non-rice	14,362	—	741	14,362	15,103	59.2%
Grassland[b]	4,364	—	215	4,364	4,579	18.0%
Blue Oak Woodland	10	—	—	10	10	0.0%
Valley Oak Woodland	20	—	—	20	20	0.1%
Alkali Prairie and upland grassland[b]	100	—	—	100	100	0.4%
Fresh Emergent Wetland	500	25	—	525	525	2.1%
Valley Foothill Riparian	1,600	80	—	1,680	1,680	6.6%
Lacustrine and Riverine	600	30	—	630	630	2.5%
Other – Barren						
Bank Swallow Habitat	50	—	—	50	50	0.2%
Total Newly Protected Lands[c]	**24,406**	**135**	**956**	**24,541**	**25,497**	**100.0%**

Assumptions/Notes:

[a] Because of parcel size boundaries and limitations regarding available acquisitions from willing sellers, land acquisition to meet the small acreage targets for sensitive habitats will most likely be greater than the underlying newly protected lands commitment. For the purpose of the cost analysis, the Conservancy assumes that 5 percent more acreage for sensitive habitats will be acquired to meet the sensitive habitat targets exactly, in case parcels are larger than the acre commitments.

[b] The amount of newly protected grassland to be acquired is reduced from the 4,430 acres commitment for the purposes of this table because 66 acres of upland grassland at Woodland Regional Park is acquired and managed as part of the alkali prairie reserve lands. The 66 acres of upland grassland are added to the 34 acres of alkali prairie for a total of 100 acres of alkali prairie and upland grassland natural community for the purposes of the acquisition cost and management cost analysis.

[c] This total includes 276 acres of reclaimed mining land held in fee title by Yolo County and committed to the reserve, with the addition of habitat conservation easements, as newly protected lands. The sites are part of the Cache Creek Area Plan. See. Appendix H *Cost Supporting Materials* Table 3 for a list of the parcels.

Table 8-3. Yolo HCP/NCCP Pre-Permit Reserve Land Sites Expected to be Enrolled "As-Is" without Additional Acquisition Cost

Number	Site	Managing Agency	Size (acres)
Type 1: Public and Easement Lands			
1	River Ranch – VELB Conservation Bank Phase 2	Wildlands/Wildlife Heritage Foundation	35.5
2	River Ranch – VELB Conservation Bank Phase 3	Wildlands/Wildlife Heritage Foundation	99.7
3	Ridge Cut Farms Conservation Bank	Wildlands	185.9
4	Pope Ranch – Giant Garter Snake	Wildlands	391.0
5	River Ranch – VELB Conservation Bank Phase 1	Wildlands/Wildlife Heritage Foundation	76.0
6	River Ranch – Wetlands Mitigation Bank	Wildlands/Wildlife Heritage Foundation	113.4
7	Grasslands Regional Park – Burrowing Owl Mitigation	County of Yolo/City of Davis	33.0
8	Conaway – Giant Garter Snake	American West Conservation	1,000.0
9	Conaway – Swainson's Hawk	American West Conservation	1,000.0
10	Conaway – Tri-colored Blackbird	American West Conservation	224.2
11	SWHA Mitigation – Bogle	Yolo Land Trust	76.0
12	SWHA Mitigation – Chickahominy Creek 1	Yolo Habitat Conservancy	148.9
13	SWHA Mitigation – Lara West	Yolo Land Trust	83.1
14	SWHA Mitigation – Lara East	Yolo Land Trust	41.0
15	SWHA Mitigation – Los Rios	Yolo Land Trust	80.2
16	SWHA Mitigation – Schmid	Yolo Land Trust	80.2
17	SWHA Mitigation – Tule Ranch	Yolo Land Trust	143.4
18	SWHA Mitigation – Virgin	Yolo Habitat Conservancy	347.0
19	SWHA – Kerr	Yolo Land Trust	87.3
20	SWHA Mitigation – Chickahominy Creek 4		160.7
21	SWHA Mitigation – Chickahominy Creek 5		161.1
22	SWHA Mitigation – Tule Ranch Area II		289.6
23	Yolo Bypass Wildlife Area	CDFW	TBD
		Subtotal acres Sites 1–10	3,158.7
		Subtotal acres Sites 11-23	1,698.5
		Grand Total Sites 1-23	4,857.21
	Net remaining acres to reach 8,000 acre pre-permit reserve land commitment	[8,000 – 4,857.2]	3,142.8
	Total additional acres in potential inventory of 46 sites	[9,426.9 – 4,857.2]	**4,569.7**

Source: Yolo Habitat Conservancy. June 26, 2015. *Local Cost Share and Potential Approaches.* Memorandum to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife from Petrea Marchand, executive director, and Chris Alford, Alford Environmental, regarding Yolo HCP/NCCP Local Cost Share Source Assessment, as updated January 2018.

VELB = valley elderberry longhorn beetle

SWHA = Swainson's hawk

WWTP = wastewater treatment plant

For this cost model, the Conservancy based fee title land value assumptions on an analysis of trends in agricultural land values, as documented in *2017 Trends in Agricultural Land and Lease Values: California and Nevada*, published by the California Chapter of the American Society of Farm Managers and Rural Appraisers (ASFMRA) in Yolo County and interviews with appraisers, real estate brokers, and land management agencies that are active in the region. The ASFMRA gathers data from its members and prepares an annual trends report that estimates values for several categories of agricultural land, including land for vegetable row crops, irrigated field crops, rice, and rangeland in south Sutter County, western Placer County, north Sacramento County, and Yolo County. As noted above, it is anticipated that the Conservancy will acquire fewer than 1,000 acres of the reserve system in fee title.

For the purposes of the cost analysis, it is anticipated that the Conservancy will acquire fee title for non-rice cultivated agricultural land and grassland needed for restoration projects (see Section 8.3.2, *Restore Natural Communities*).

Fee title land value factors are another component of the formula that is used to calculate the cost of acquiring Yolo HCP/NCCP conservation easements. The cost model assumes the Conservancy can acquire easements at about 60 percent of fee title values in all cases, except for non-rice cultivated agricultural land (in current market conditions). As detailed below, that easement cost is estimated as the difference in value between orchard land and irrigated cropland.

The fee title and easement cost factors used in the model to estimate the cost to acquire easements on newly protected lands are listed below.

- $14,000 per-acre fee title for cultivated agricultural land (rice). The range of ASFMRA 2017 values for rice is $9,500 per acre to $15,500 per acre with a mid-point of $12,500 per acre. Values at the high end of the range are justified in the area served by Reclamation District (RD) 108 (the Colusa Basin). The model cost factors assume a mix of values across this range. For the purposes of this cost analysis, the Conservancy will acquire only voluntary easements on newly protected rice land. The cost model estimates those easement acquisition costs as a percentage of the fee title cost;
- $2,648 per-acre fee title for grassland in the Dunnigan Hills planning unit, assuming large parcels (greater than 160 acres). The conservation strategy identifies 3,000 acres of the grassland commitment in the Dunnigan Hills planning unit. The Conservancy will acquire grassland in the Dunnigan Hills planning unit through voluntary conservation easements. The cost model estimates those easement acquisition costs as a percentage of the fee title cost;
- $4,237 per-acre fee title for grassland and alkali prairie habitat in the valley, assuming smaller parcels in the range of 50–160 acres. The higher per-acre cost of land in the valley than in the Dunnigan Hills reflects the possible construction of farm dwelling(s) on these smaller parcels in the valley. This factor applies to the grassland acres acquired in fee title for the purpose of restoration (see Section 8.3.2, *Restore Natural Communities*). The Conservancy will acquire other newly protected grassland and alkali prairie habitat in the valley as conservation easements. The cost model estimates those easement acquisition costs as a percentage of the fee title cost;
- $1,059 per-acre fee title for the other natural communities in the newly protected lands commitment (blue oak woodland, valley oak woodland, fresh emergent wetland, valley foothill riparian, lacustrine and riverine, and bank swallow habitat). These natural

communities represent less than 15 percent of the commitment regarding newly protected lands and have a lower economic value than parcels on the valley floor, which are suitable for residential development. They are likely to be acquired as part of a predominantly cultivated land- or grassland-dominated parcel. The cost estimate assumes acquisition of these natural communities as conservation easements, and that cost is estimated as a percentage of the fee title cost; and

- $10,200 per acre for a conservation easement that restricts the conversion of cultivated non-rice land to orchards or vineyards. This HCP/NCCP conservation easement, similar to the existing Swainson's hawk easements in Yolo County, restricts the conversion to orchards and vineyards. Orchard and vineyard values are the driving force in the current agricultural land market in Yolo County, as described above. Therefore, the Conservancy assumes the conservation easement cost of cultivated non-rice land is the difference in value between orchard land ($24,250 per acre) and irrigated cropland ($17,600 per acre) or field cropland ($10,500 per acre), instead of a percentage of the fee title value, as used for other land cover types.[6] For planning purposes at this time, it is reasonable to use this differential as an estimate of the price the Conservancy will have to offer to attract willing sellers of conservation easements with such restrictions. The cost model adds another five percent to this per-acre value to reflect the additional cost for easement encumbrances on the landowner, such as providing Conservancy access for monitoring, and various prohibitions. These assumptions apply to most (about 60 percent) of the conservation easements for newly protected lands.[7]

The land acquisition assumptions in the cost model assume an approximately even pace of acquisition over the five-year acquisition periods. The Conservancy will complete all land acquisition for protection by Year 45 and all land acquisition for restoration by Year 40 of the 50-year permit term. Land acquisition prices over such a long period will vary considerably. During this period, higher-than-average prices, such as those experienced now,[8] are expected to be offset by lower-than-average prices, similar to what was experienced during the recession of 2009–2012.

The Conservancy assumes the per-acre costs to enroll pre-permit reserve lands to be substantially less than the costs of acquiring newly protected lands. As noted above, sites that represent more than half of the 8,000 acres are currently protected by permanent conservation easements and have endowments or agricultural income to support ongoing management and monitoring. The cost

[6] Calculation of the midpoint value for an easement restricting conversion to orchards or vineyards is as follows: [$24,250 - $17,600 = $6,650; $24,250 - $10,500 = $13,750; the midpoint of $6,650 and $13,750 is $10,200]

[7] As described in Section 7.5.12, *Mineral Rights*, the Conservancy may acquire a limited number of conservation easements on land in which the mineral right is severed from the surface rights of the real property, and which the Conservancy cannot acquire. In those instances, the Conservancy should negotiate an acquisition price for the conservation easement that reflects the risk of the severed mineral right being exercised later and forcing the Conservancy to replace the biological values lost as a result with easement acquisition or habitat restoration elsewhere. See Section 7.5.12 for details of the acquisition process required in those circumstances.

[8] Appraisers, brokers, and land managers that are active in Yolo County agree that current market conditions for agricultural land are unprecedented. High commodity prices, with particularly strong growth in demand that fuels increased prices for orchard acreage, and new entrants in the form of investors who seek diversification are among the factors behind what might be considered "bubble" conditions in California's current agricultural land market. This means prices are trending high relative to underlying longer-term agricultural values. There are no current comparable transactions for habitat conservation easements, and past examples are not representative of current market conditions.

model assumes no additional reserve system assembly cost to enroll these pre-permit reserve lands; the legal or other staff costs for negotiating any necessary easement updates are covered in the Plan's administration staff and legal services costs, described below (Section 8.3.5, *Plan Administration*). In this sub-set of pre-permit reserve lands, not all sites have existing management plans; therefore, the Conservancy assumes a modest cost for preparing those plans, based on reserve unit management plan guidelines.

The Conservancy assumes some additional cost to enroll the balance of the pre-permit reserve lands. Some sites will require new HCP/NCCP easements; others will require easement modifications to satisfy the enrollment criteria. The costs will vary significantly, depending on the characteristics of the property. The Conservancy will balance these costs against the biological value of the site to the reserve system and will strive to cost-effectively enroll these sites. The cost model assumes an average cost of $2,648 per acre to enroll this sub-group of pre-permit reserve lands.

Mechanisms to account for expected changes in land costs over time are described in Section 8.4, *Funding Sources and Assurances*.

8.3.1.2 Transaction Costs

Transaction costs include costs for appraisals, title reports, boundary surveys, legal descriptions, negotiation of easement terms, and Phase 1 Environmental Site Assessments for hazardous materials.[9] These costs can vary significantly, depending on the size and complexity of the site. The Conservancy assumes an average of $45,000 per transaction in this cost model and the same level of transaction costs for easement and fee title acquisitions for newly protected lands. In addition, newly protected lands will require site-specific management plans. The site-specific plans are based on reserve unit management plan guidelines; the costs are estimated to be $30,000 per transaction (or site) for the purposes of this analysis. The number of transactions throughout the permit term is based roughly on the minimum patch sizes by natural community type, as specified in Section 6.4.1.4, *Reserve System Assembly*. Transaction costs for parcels acquired for restoration appear as a line item in the Restore Natural Communities cost category.

Transaction costs for enrolling pre-permit reserve lands are likely to vary more than transaction costs for newly protected lands. Costs will be substantially lower in most cases, consisting of research of existing documents and preparation of modifications to easements or other documents as needed. Some sites already have management plans, but others will require the development of site-specific management plans based on reserve unit management plan guidelines. Some sites will require the Conservancy to conduct more intensive easement acquisition services.

To represent this range of potential costs, the Conservancy makes the following assumptions:

- Five percent of the per-transaction cost for newly protected lands required to enroll pre-permit reserve lands in Sites 1–23,
- 15 percent of the per-transaction cost for newly protected lands required to enroll all other pre-permit reserve lands,

[9] A Phase 1 Environmental Site Assessment is a preliminary investigation to determine if a site might contain hazardous materials. The Conservancy will evaluate sites with hazardous materials to determine the cost-benefit of acquiring the site (e.g., if agricultural pesticides are likely to be found or suspected on many sites).

- 50 percent of the pre-permit reserve lands from among other sites that will require easement acquisition/modification services, and
- $24,365 per site for easement acquisition/modification services.

8.3.1.3 Pre-acquisition Assessments

As described in Chapter 6, the Conservancy will undertake pre-acquisition assessments to determine the biological value of any land considered for inclusion in the Yolo HCP/NCCP's reserve system. The pre-acquisition assessments will also assess physical characteristics of each site, including infrastructure. Pre-acquisition assessments include surveys for the following characteristics:

- Land cover type, including assessment of infrastructure and other site conditions;
- Covered species habitat;
- Wetlands and streams (i.e., wetland delineations);
- Covered wildlife population; and
- Landscape linkages and ecosystem functions.

The model estimates the cost of pre-acquisition assessments based on the estimated number of hours required for each type of survey and associated report writing for a typical 160-acre parcel and the cost per hour, including travel costs, for consulting qualified biologists to conduct the surveys. To account for due diligence investigation of sites that were investigated but not acquired, the model assumes a 25 percent premium on these costs. The cost of pre-acquisition assessments on lands that are acquired for restoration appears as a line item in the Restore Natural Communities cost category.

8.3.2 Restore Natural Communities

The Conservancy estimates natural community and covered species habitat restoration costs at approximately $68 million over the permit period, or, on average, $1.4 million annually during the permit term (Table 8-1*, Yolo HCP/NCCP Cost Summary by Cost Category, 50-year Permit Term*). The budget covers the activities listed below.

- Identifying and prioritizing potential restoration sites;
- Fee title acquisition of restoration sites, including transactions costs and site improvements;
- Design of restoration projects;
- Development of plans, specifications, and engineering documents;
- Bid assistance;
- Preconstruction surveys for projects within the reserve system;
- Environmental compliance (covers permitting for effects on federal and state jurisdictional waters and streambed alteration agreements as well as National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and National Historic Preservation Act (NHPA) documentation, as necessary);
- Construction within the reserve system;
- Construction oversight and monitoring within the reserve system;
- Post-construction monitoring and maintenance;

- Restoration repair necessary to meet success criteria specified in each reserve unit management plan (monitoring component) and site restoration plans;
- Costs associated with using contractors to assist with or complete any of the restoration components identified in the items above or make payments to partner agencies for restoration activities consistent with the Yolo HCP/NCCP on behalf of the Conservancy;
- Costs associated with Conservancy staff management and oversight of the work of contractors or partner agencies;
- Monitoring and management of restored habitat during and after the permit term (monitoring and management of lands that are not restored are included in the cost categories *Manage and Enhance Easement and Pre-Permit Reserve Lands* and *Monitoring, Research, and Scientific Review*, below); and
- Contingency of 10 percent to account for the uncertainty in these costs (contingency costs for restoration actions are independent of costs assumed for the general contingency fund described below in Section 8.3.7, *Contingency*).

Land acquisition in fee title represents 16 percent of the total cost associated with restoring natural communities. The Conservancy will acquire appropriate agriculture parcels and grassland parcels for wetland restoration. The Conservancy assumes a $13,500-per-acre *fee title* value for non-rice cultivated agriculture. The mid-point of the range for Class I and II irrigated vegetable crops soils in ASFMRA's *2017 Trends* is $17,600 per acre; the mid-point for Class II and III field crop soils is $10,500 per acre. Weighting these two values by the percentage of Yolo County cropland in irrigated vegetable crops vs. field crops (according to the *2016 Yolo County Crop Report*) results in a weighted average value of $13,200 per acre, rounded up to $13,500 per acre. The greater likelihood of finding willing sellers among those who own land with lower-value soil types and more constraints on use or properties that are subject to flooding justifies the weighted average approach to these cost estimates. Fee title value for grassland parcels is $4,237 per acre, assuming smaller parcels with farm dwelling values, as described in Section 8.3.1, *Establish Reserve System*).

The Conservancy assumes all land management responsibilities for land acquired in fee title and may need to stabilize newly protected lands before undertaking restoration activities. Site improvements may include demolition or repair of unsafe facilities, repair of boundary fences, repair and replacement of gates, installation of signs (e.g., boundary and landmark signs), and road repair and/or removal. Cost estimates are based on a per-acquired-parcel cost factor.

The Yolo HCP/NCCP calls for restoration of valley foothill riparian, fresh emergent wetland, and lacustrine and riverine land cover types. The Conservancy based the cost for each five-year period on the area of each land cover type estimated to be restored during that period. Actual restoration will depend on the acres of each natural community lost as a result of covered activities. For planning purposes, the Conservancy assumes that all restoration will be complete by Year 40 and that the pace of restoration will be constant during the permit term. The actual pace of restoration of the land cover types listed above will comply with the stay-ahead provision described in Chapter 7, *Plan Implementation*. Separately, Section 8.3.3, *Manage and Enhance Easement and Pre-Permit Reserve Lands*, accounts for enhancement costs on other newly protected cultivated lands that were acquired by means of conservation easements.

Table 8-4, *Yolo HCP/NCCP Cost per Acre to Restore Natural Communities, by Natural Community Type,* presents the restoration cost factor assumptions for the three wetland types the Conservancy will restore. The Conservancy expects the contractors will complete the restoration projects with use of

rented vehicles and equipment. Alternatively, partner agencies that have access to the necessary labor, vehicles, and equipment may complete projects. The Conservancy does not expect to maintain in-house the types of labor resources and specialized equipment needed for habitat restoration projects. For large-scale projects, a great deal of labor is typically required (e.g., for planting seedlings, cuttings, or container stock for riparian restoration projects), which only a contractor can provide. In addition, the Conservancy expects to hire contractors or work with local partners to design restoration projects, create restoration plans and specifications, assist with construction bids, conduct preconstruction surveys, oversee the construction of habitat restoration projects, and conduct post-construction monitoring and maintenance. Conservancy staff time is included in this cost category to account for the time needed to hire and oversee the contractor/partner designs, specifications, and construction.

Costs for restoration repair include the costs to monitor and replant restoration sites in the event that plantings fail because of site conditions, human error, animal browsing, or other factors. The Conservancy calculated these costs as 15 percent of the cost to restore an acre of each land cover type.[10] The Conservancy assumes restoration repair costs will be unnecessary once the performance standards are met. Restoration repair costs do not include costs associated with remedial measures for changed circumstances, which apply to the destruction of restoration sites from foreseeable natural disasters such as flooding and drought (see Chapter 7, *Plan Implementation*).

Section 8.3.3.3, *Remedial Measures for Changed Circumstances*, describes costs associated with remedial measures that deal with changed circumstances. The Restore Natural Communities cost category includes a budget for remedial measures on restored lands. For planning purposes, the cost model assumes acquisition and restoration occurs evenly over the course of the permit term. The Conservancy will complete all fee title acquisitions for restoration, which will occur evenly over eight five-year periods, by Year 40. Although the Conservancy will complete construction of habitat restoration projects by Year 45, ongoing management and monitoring of restoration sites will continue throughout the permit term. The cost model includes these costs in the Restore Natural Communities cost category.

[10] This percentage is based on the assumptions that restoration repairs will be needed on a minority of restoration projects, and these repairs will be substantially less expensive than the original construction costs. Restoration contingency funds or general contingency funds (see Section 8.3.6) could also be used to repair restoration projects, if necessary.

Table 8-4. Yolo HCP/NCCP Cost per Acre to Restore Natural Communities, by Natural Community Type

Restoration Cost Element	Fresh Emergent Wetland (wetlands only)	Valley Foothill Riparian	Lacustrine and Riverine
Preconstruction Restoration Planning Surveys	$426	$426	$237
Bid Assistance	191	169	127
Plans, Specifications, and Engineering	4,767	4,237	3,178
Construction Activity	19,068	16,949	12,712
Construction Biological Monitoring	379	379	379
Construction Oversight	953	847	636
Post-construction Restoration Monitoring and Maintenance	14,301	25,424	9,534
Total per Acre, before Contingency	**$40,085**	**$48,432**	**$26,802**
Restoration Contingency	4,009	4,843	2,680
Total per Acre, including Contingency	**$44,094**	**$53,275**	**$29,482**

Notes:
In 2017 dollars.
Plan, specification, and engineering work; bid assistance; and restoration oversight will be conducted in the five-year period in which restoration takes place. The estimate of restoration costs is a planning tool for assessing the level of effort required to perform the work. Actual restoration costs will vary from the above estimates because of competitive bidding, negotiations with the client, or fluctuations in market prices.
The per-acre costs for each restoration cost element are based on a number of assumptions, some of which vary by land cover. See Appendix H for details on these assumptions.

8.3.2.1 Environmental Compliance

Restoration projects may trigger environmental compliance documents and permitting costs, including fees. This includes compliance with NEPA and CEQA, Sections 401 and 404 of the Clean Water Act (CWA), Section 106 of the NHPA, Sections 1600–1607 of the California Fish and Game Code, and other miscellaneous requirements (e.g., county grading permits, road encroachment permits, stormwater pollution prevention plans). The environmental impact statement/environmental impact report (EIS/EIR) for the Yolo HCP/NCCP is expected to address the NEPA and CEQA compliance issues for most or all restoration projects, but individual restoration projects may require a NEPA or CEQA review to verify this compliance at the time the projects are designed. Restoration activities involving effects on state or federal jurisdictional waters will require Section 404 CWA, Section 401 CWA, and Section 1602 California Fish and Game Code permits. Projects with a federal nexus (e.g., CWA Section 404 permits), including cultural resource inventories, will trigger NHPA compliance. If the Conservancy finds significant cultural resources at a location that would be disturbed by the HCP/NCCP's restoration activities, the Conservancy may opt to relocate these activities to avoid disturbing the cultural resources.

For the purposes of cost modeling and estimating if the funding is adequate, the Conservancy assumes that an allowance of 3 percent of the restoration project's budget will cover environmental compliance reporting, documentation, and fees for HCP/NCCP restoration activities. Actual costs will vary, depending on the location and scale of the project as well as the

nature of the resources at the project site. Some projects will be covered by general permits. These will trigger minimal additional compliance costs.

The Conservancy expects to incur all environmental compliance costs during the permit term, through Year 40, because such costs are associated with habitat restoration projects. The Conservancy assumes completion of those projects by Year 40. Covered activity sponsors will bear the environmental compliance costs of their covered activities that are unrelated to conservation actions; this cost estimate does not include those compliance costs.

8.3.3 Manage and Enhance Easement and Pre-Permit Reserve System Lands

Once lands have been acquired, the Yolo HCP/NCCP describes a program to ensure that the Conservancy manages reserve lands and achieves the biological goals and objectives identified in Chapter 6, *Conservation Strategy*. This cost category includes costs for management planning and management activities related to the overall reserve system. Also included are habitat enhancements on cultivated lands that are added to the reserve system (newly protected and pre-permit reserve lands) to improve foraging and nesting habitat values. For the purposes of estimating reserve management and enhancement costs, there are four categories of reserve lands, as described below.

- Most of the newly protected lands in the reserve system (about two-thirds of the newly protected lands) will remain as working agricultural landscapes where the private landowner retains responsibility for land management. The Conservancy will hold a conservation easement that specifies the terms related to habitat conservation, consistent with the Yolo HCP/NCCP's biological goals and objectives. Costs on these lands include enhancements to improve foraging and nesting values. The responsibilities of the Conservancy staff (or contractor) include the costs to monitor reserve lands annually, thereby ensuring that the landowner's management is in compliance with the terms of the conservation easements; these are included in Section 8.3.5, *Plan Administration*.
- The Conservancy will acquire up to 956 acres of newly protected lands in fee title for the purpose of habitat restoration activities under the Plan and ensuring no net loss of wetlands (biological objective L1.1). The Conservancy will actively manage these reserve lands. Active reserve management activities include fencing, gate, and signage installation and repair; trash/debris removal; vegetation and pest management; and water supply management on restored giant garter snake habitat. Costs for these ongoing activities are included in Section 8.3.2, *Restore Natural Communities*.
- Pre-permit reserve lands will contribute another 8,000 acres to the reserve system. About 4,900 acres of pre-permit lands enrolled in the reserve system have existing endowments or agricultural income to support management activities, consistent with the HCP/NCCP, for the duration of the permit term and in perpetuity. The Conservancy assumes no additional ongoing land management costs for this sub-set of pre-permit reserve lands. The cost model includes costs for enhancements to improve foraging and nesting values on cultivated lands in this category of pre-permit reserve lands.
- About 3,100 acres of the 8,000 acres of pre-permit reserve lands do not have existing management endowments or agricultural income. Reserve unit management plans and, if necessary, site-specific management assessments of these properties will identify reserve management strategies, consistent with the Yolo HCP/NCCP's biological goals and objectives.

The conservation easements negotiated prior to enrolling these lands in the Yolo HCP/NCCP's reserve will specify management costs and funding responsibilities for these pre-permit reserve properties. For the purposes of this cost estimate, the Conservancy assumes a modest per-acre management cost on these working landscapes and publicly owned properties The cost model also includes costs for enhancements to improve foraging and nesting values on cultivated lands in this category of pre-permit reserve lands.

As indicated above, this cost category includes a variety of types of expenses, and not all expenses would apply to all reserve lands, most notably because landowners will retain primary management responsibility for newly protected lands and pre-permit reserve lands that are protected by means of the Yolo HCP/NCCP's conservation easements. Given these assumptions, the model generates costs of $14.5 million over the term of the permit, or an average of about $300,000 annually (Table 8-1, *Yolo HCP/NCCP Cost Summary by Cost Category, 50-year Permit Term*). Costs are fairly uniform throughout the permit term, varying by the pace of habitat enhancement efforts.

Cost estimates related to management and enhancement activities include those listed below.

- Conservancy staff oversight of management and enhancement activities and any contractors;
- Reserve unit management plans for seven reserve units, including initial plans and periodic updates, which are most likely a contractor cost. The plans will cover newly protected lands and pre-permit lands that are added to the reserve system. The Conservancy assumes that the common characteristics of many of these properties will support planning documents that have been developed around natural communities and species. Site-specific management plans may be necessary to address particular site conditions or other extraordinary circumstances. These costs are estimated as part of reserve system assembly transaction costs in Section 8.3.1.2, *Transaction Costs*;
- Developing an invasive species control program for the reserve system (e.g., use of herbicides or grazing);
- Coordination by Conservancy staff with other Yolo County land management entities on a pollinator strategy (a Plan administration staff responsibility and included in that cost category). The Conservancy's cost responsibility for the pollinator strategy is limited to coordination, assistance with securing funding, and public outreach;
- Managing alkali prairie habitat and associated uplands for covered and other native species by improving hydrologic conditions and reducing adverse effects of nonnative plants and human activities;
- Habitat enhancement of natural communities within the reserve system, focused on improving conditions for the covered species in cultivated lands and grassland preserves (described below);
- Adaptive management, including staff time to evaluate the results of monitoring and research to determine the effectiveness of reserve management (described below); and
- Remedial measures for changed circumstances (described below).

Management activities may be implemented by the Conservancy, contractors, landowners, or other third parties. Notably, the Conservancy assumes no staff costs for field labor and no specific cost to own or maintain the vehicles or equipment needed to conduct active management or enhancement activities. The cost model estimates represent costs for contracted labor and rented

vehicles/equipment or, alternatively, payments to partner entities such as the Yolo County Resource Conservation District to implement projects on behalf of the Conservancy. The Yolo HCP/NCCP requires reserve land management in perpetuity, although at a lower level after the permit term than during the permit term.

8.3.3.1 Habitat Enhancements

As outlined in Chapter 6, the Conservancy will manage cultivated lands to increase the habitat functions they support. The Conservancy has identified two types of habitat enhancements that would have beneficial effects for Swainson's hawk and white-tailed kite: hedgerows, consisting of uncultivated habitat strips adjacent to cultivated lands that provide important foraging habitat, and increased density for trees in cultivated lands to provide more opportunities for nesting. The Conservancy will also install nesting burrows and create debris piles in grassland preserves to enhance the function of grassland preserves for the western burrowing owl.

As with other restoration and management cost components, the cost estimates in the model represent planning-level estimates of the costs to complete these types of projects, regardless of who actually implements the project. The Conservancy might incur the cost directly by contracting out the labor, equipment, and supplies or might pay partner entities or landowners to implement the enhancement projects. Sources for the unit costs in these enhancement cost estimates include the Yolo County Resource Conservation District, Yolo Audubon, University of California Cooperative Extension, Hedgerow Farms and Estep Environmental Consulting.

Hedgerows would be established in cultivated lands at parcel edges along existing agricultural roads, canals, or drainage ditches. The model assumes a hedgerow planted with native grasses, forbs, shrubs, or trees for the purposes of demarcation as well as nesting habitat. The cost factor includes site analysis, design, site preparation, installation, and three years of maintenance to ensure establishment as well as less intensive costs for perpetual maintenance. Hedgerows are assumed for all of the newly protected cultivated lands and for the half of the pre-permit reserve lands that are assumed to be cultivated lands.[11]

A target density of one tree per 10 acres is the basis for the cost estimate for nest tree enhancement. The density factor is applied to all newly protected cultivated lands and to the approximately 4,500 acres of pre-permit reserve lands that are cultivated lands. The cost per tree includes labor, materials, and equipment and covers seedlings/saplings, planting, fertilizer, and irrigation. The cost includes a 10 percent replacement allowance to ensure success. Associated surveying and monitoring costs are included in Section 8.3.4, *Monitoring, Research, and Scientific Review.*

Target densities of two nesting burrows per 100 acres of grassland habitat and one debris pile per 200 acres of grassland habitat are the basis for the cost estimate for burrowing owl enhancements. These factors are applied to 3,000 acres of newly protected grassland preserves. Cost estimates include materials, labor and equipment for initial installation and periodic replacement as needed over the permit term.

[11] A less intensive hedgerow of largely native perennial grasses with a limited number of trees would be less costly than what the cost model assumes.

8.3.3.2 Adaptive Management

Adaptive management activities within the reserve system include any change in the management of the reserve system necessary to meet the biological goals and objectives described in Chapter 6, *Conservation Strategy*. Monitoring described in Section 6.5, *Monitoring and Adaptive Management,* informs these changes. Adaptive management could include, but is not limited to, enhancement of the reserve system through planting of trees and hedgerows and providing on-site assistance to and oversight of landowner management.

As currently designed, the adaptive management decision-making process is part of the regular duties of Conservancy staff members who are in the position of restoration/reserve project manager or senior environmental scientist. Therefore, the assumed costs associated with adaptive management decision-making, except for external scientific review, are allocated between management and enhancement of easement and pre-permit reserve system lands and Plan administration.

8.3.3.3 Remedial Measures for Changed Circumstances

The Conservancy estimated remedial measure costs to address the response to changed circumstances (see Section 7.7, *Plan Assurances*, for a description of all changed circumstances and remedial measures). The Conservancy assumes the cost estimate for remedial measures is an additional 10 percent of the cost of management activities on reserve lands. In addition, the Conservancy has budgeted for remedial measures to address the potential regional loss of Swainson's hawk foraging habitat below specific thresholds. The budget could fund a range of potential activities, such as additional habitat enhancements, easement acquisition, or development and implementation of a farmer incentives program to promote crops that also support Swainson's hawk.

As described in Chapter 7, *Plan Implementation*, the Conservancy is required to implement remedial actions if any of the changed circumstances occur. The Conservancy will maintain sufficient financial reserves to fund the remedial actions described in Chapter 7 when they arise. Starting in Year 5 of implementation, the Conservancy will annually assess its funding reserves and supplement the reserves to fund implementation of remedial actions in the coming year, based on historic events and frequency. Funds used to supplement these financial reserves could come from outside the Conservancy or from within the Conservancy budget (i.e., funds shifted from other HCP/NCCP uses). This approach will ensure that adequate funds are available immediately in the event of a changed circumstance occurring.

Annual funding for remedial measures will grow each year in proportion to the size of the reserve system, with substantial funding for remedial reserves generated later in the permit term. The changed circumstances described in Chapter 7, *Plan Implementation,* are more likely to occur on a larger scale later in the permit term because of the greater size of the reserve system and the expected effects of climate change.

The cost assumptions are made for planning purposes and will not limit the Conservancy's obligation to respond to these changed circumstances. Remedial measures for the reserve system are not required after the permit term; therefore, these costs are assumed to apply only during the permit term.

8.3.4 Monitoring, Research, and Scientific Review

Monitoring and directed research costs are estimated to be $18.8 million over the permit term and, on average, $376,000 annually (Table 8-1). The Conservancy based the monitoring cost estimates on the monitoring and adaptive management program outlined in Section 6.5. Contractors will complete most of the fieldwork, data collection, analysis, and reporting. Conservancy staff members will manage the contractors, provide oversight for the fieldwork and targeted studies, and coordinate input from the Science and Technical Advisory Committee (STAC). Compliance monitoring to track and document the status of Yolo HCP/NCCP implementation is covered as a staff cost in Section 8.3.5, *Plan Administration*.

The cost model and funding plan account for the cost of monitoring restoration projects in the Restore Natural Communities cost category. This ensures that all restoration costs are reflected in one cost category and aids in the calculation of fees for wetland effects.

Chapter 6 fully describes monitoring and directed research activities. Monitoring and directed research costs cover the following items:

- Costs associated with Conservancy staff oversight of monitoring contractors and directed research grants;
- Planning, conducting, analyzing, and reporting for baseline surveys conducted within three years of reserve site acquisition for natural communities and covered species within the Plan Area;
- Planning, conducting, analyzing, and reporting for periodic status and trends surveys of natural communities and covered species within the Plan Area, including evaluating the effectiveness of conservation measures (the cost of monitoring habitat restoration projects is included in the habitat restoration category);
- Research directed at management and monitoring needs of the reserve system; and
- Stipends for STAC for scientific review and meetings.

Species monitoring on newly protected lands is the largest contributor to monitoring costs. The Conservancy based these cost estimates on reserve land parcel size assumptions, the pace of reserve land acquisition, the number of qualified biologists required to conduct each survey, the hours required for surveying as well as the hours required for data analysis and reporting, the number of years required to establish baseline data, and the frequency of survey updates. These assumptions vary by natural community and species. Some efficiencies are taken into account when monitoring can be conducted for multiple species in the same natural community (e.g., surveys for Swainson's hawk and white-tailed kite in the same cultivated lands survey).

There are different categories of pre-permit reserve lands for the purposes of monitoring cost estimates. The Conservancy assumes no additional natural community monitoring costs for the pre-permit reserve lands that are covered by existing endowments or agricultural income (about 3,150 acres of the 8,000 acres of pre-permit reserve lands). There will be costs, however, for natural community and species biological monitoring on the rest of the pre-permit reserve lands. All pre-permit reserve acres except the approximately 900 acres in existing mitigation banks will require species biological monitoring. The Conservancy estimated the natural communities and species monitoring costs for these pre-permit reserve lands based on the mix of natural communities and species habitats in the balance of potential enrolled pre-permit reserve land sites.

The Conservancy expects most monitoring and research to occur on the reserve system, including monitoring on pre-permit reserve lands incorporated into the reserve system. Some monitoring and research, however, will occur outside the reserve system to achieve the goals of the monitoring program described in Chapter 6, *Conservation Strategy*. Monitoring costs include a limited amount of monitoring that would occur off the reserves (e.g., along streams and on other public lands to support status and trend monitoring). The Conservancy will fund targeted research studies to resolve management uncertainties that may include pilot projects investigating management and monitoring techniques or adaptive management experiments. Conservancy staff members, in consultation with the wildlife agencies, will define and manage the studies that graduate students, university researchers, or other scientists will conduct. The Conservancy will complete the targeted studies phase by Year 25 of the permit term. Reserve management costs include the cost of implementing the adaptive management recommendations of these studies.

Scientific review costs include costs for scientists to provide advice to the Conservancy throughout the permit term (see Section 6.5, *Monitoring and Adaptive Management*) through the STAC. A minimum of four biologists will compose the STAC, with one member serving as chair of the committee. Compensation for each member is assumed to be $106 per meeting, based on actual in-person attendance. The chair is assumed to receive a travel cost compensation of $159 per meeting. The cost estimate assumes five members, with an average of two meetings per month through Year 40. Meeting frequency is assumed to be an average of one meeting per month in Years 41–50. The Conservancy caps the number of meetings that can occur in any month.

The Conservancy assumes all research costs and most monitoring costs occur during the permit term. Some monitoring tasks will be required in perpetuity (see Section 8.3.8, *Costs in Perpetuity*).

8.3.5 Plan Administration

Plan administration costs are expenses for Conservancy staff, office space, supplies, and professional services. Plan administration costs to carry out the Yolo HCP/NCCP's requirements are estimated to average $683,000 annually during the permit term (Table 8-1*, Yolo HCP/NCCP Implementation Cost Summary by Cost Category, 50-year Permit Term*). Some Plan administration costs will be necessary beyond the permit term.

For the purpose of estimating administration costs, the Conservancy assumes that it will administer the Plan by hiring and managing its own staff in its own facilities. This assumption ensures the model does not understate potential costs of staffing and Plan administration. The Conservancy may realize cost savings in Plan administration by partnering with existing land management agencies that already have a staff with the required qualifications and the infrastructure to hire and manage such a staff.

Administrative costs incurred by Permittees, other than the Conservancy, to fulfill their own responsibilities under the Yolo HCP/NCCP are not included in the cost estimates. For example, each participating jurisdiction will incur costs when reviewing applications for take authorization from project proponents. The participating cities and the county may recover these costs from applicants according to the fee policies in place at each local jurisdiction. The fee amounts specified in the Yolo HCP/NCCP do not reflect the costs of application review by the local jurisdictions, and revenues from the Yolo HCP/NCCP's fees will not be used to cover these costs. Similarly, the cost of all conditions on covered activities described in Chapter 4, *Application Process and Conditions on Covered Activities,* will be borne by the project proponents, either public agencies, or private developers.

8.3.5.1 Staffing

Most of the costs of Plan administration are related to staff salaries and benefits. The cost model identifies up to 5.0 staff positions annually at the peak for Plan implementation in Years 11–25. Staffing levels are highest during the first years of implementation to meet the targets for reserve system assembly, restoration (as needed), reserve management planning, and assessing resources and developing monitoring plans. By the end of the permit term, the staffing level is down to 3.25 full-time employees. Other staffing mixes could fulfill the obligations of the Yolo HCP/NCCP; the staffing mix presented here is conservative and satisfies the purposes of the cost analysis.

For the purposes of the cost estimate, the Conservancy assumes the following staff positions to carry out the Yolo HCP/NCCP's implementation, as described in Chapter 7, *Plan Implementation*: executive director, senior environmental scientist, restoration/reserve project manager, data analyst/GIS specialist, real estate specialist, planner/grant specialist, accountant/budget analyst, and administrative support. Some positions are part-time. These positions are proposed for the type of role required to support implementation of the Yolo HCP/NCCP, but the actual staff hired may be different.

The cost estimate assumes the Conservancy will hire its own staff to administer the Plan. To reduce costs, the Conservancy may instead contract with Permittees or non-profit agencies, such as local agricultural or conservation groups, to accomplish some of the work identified for staff positions, especially in the early phase of Plan implementation. The Conservancy may also leverage existing resources of local jurisdictions and agencies that are already working in the Plan Area to use funding as efficiently as possible. At a minimum, the Conservancy will have an executive director who functions as both an organizational leader and someone to oversee the implementation effort.

Most of the estimated costs for implementation staff are covered in the Plan Administration cost category. Some staff and associated overhead costs are allocated to other cost categories. All of the real estate specialist staff costs are allocated to *Establish Reserve System*. Half of the staff costs for the senior environmental scientist/specialist are accounted for under *Monitoring, Research, and Scientific Review* and 25 percent are accounted for in *Manage and Enhance Easement and Pre-Permit Reserve Lands*, with the remaining 25 percent accounted for in *Plan Administration*. The staff costs for restoration/reserve project manager are allocated one-third to *Restore Natural Communities* and two-thirds to *Manage and Enhance Easement and Pre-Permit Reserve Lands* through Year 40, and then 100 percent to *Reserve Management* when restoration projects are complete in Year 40.

8.3.5.2 Staff and Associated Overhead Costs

Staff costs include employee salaries and benefits. Staff benefits are defined by a salary multiplier of 60 percent to include the cost of health insurance, payroll taxes, a retirement plan, workers' compensation, disability, and life insurance. Annual salaries are based on posted salary rates for comparable Yolo County or state of California positions.

The Plan administration category also includes all overhead costs associated with general office operations. This includes office space and utilities, office equipment and supplies, printing, publications, postage, fees and subscriptions, training, travel, and information technology. The cost model uses an estimating factor that reflects the current Conservancy budget allocation for these cost categories as well as assumptions about current office rents in Woodland. The Plan administration cost estimate also includes a cost for insurance (i.e., professional insurance for the Board of Directors [often known as "directors and officers insurance"], general liability and automobile insurance, and professional liability insurance for Conservancy staff members).

8.3.5.3 Legal and Financial Analysis Services

The Conservancy will require legal and financial analysis services during implementation. The Conservancy will need legal resources to draft and review conservation easements, finalize land purchases, assist with negotiations, and assist with resolving easement violations if they occur. The Conservancy assumes limited use of outside counsel, relying instead on legal services that can be provided by the Permittees from their in-house legal staff (i.e., outside the Conservancy but within Permittee agencies). Legal costs are based on respective billing rates for in-house and outside counsel and the estimated amount of time needed per five-year period. The Conservancy will require financial analysis assistance for annual financial review and periodic evaluation of the program's cost/revenue balance, thereby ensuring the Yolo HCP/NCCP's fees are in line with changing land costs and inflation. The cost model estimates the cost for contracted financial analysis services per five-year period. The Conservancy also expects attorneys and financial analysts with each local jurisdiction to provide some support during the permit term.

8.3.5.4 State Agency Staff Support

The Conservancy will fund a partial State agency staff position to ensure appropriate support for implementing this HCP/NCCP. Specifically, the Conservancy will fund a one quarter-time position at the California Department of Fish and Wildlife (assumed to be $50,000 per year including overhead and benefits). Although staff funding is assumed to continue for the duration of the permit term, the agreement will be re-evaluated periodically.

8.3.5.5 Advocacy and Public Outreach

The Conservancy assumes a cost of $42,000 per year for advocacy and public outreach services and/or materials. This provides for specialized services to assist with fundraising, building relationships with landowners and other interested parties, and raising awareness of Plan benefits and needs.

8.3.5.6 Neighboring Landowner Protection Program

Neighboring landowners who agree to participate will receive assurances through certificates of inclusion from the Conservancy that allow for incremental increases in the number of individuals or populations of covered species, above baseline conditions, on properties adjacent to the reserve system. If requested by the landowner, the Conservancy will partially fund the baseline surveys (up to half of the cost) that are required for landowners to enroll in this assurance program.

8.3.5.7 Risk Management and Conservation Easement Defense

Easement defense involves response to easement violations by subsequent property owners, neighboring landowners, and third party trespassers as well as defense against claims by affected parties such as subsequent property owners and neighboring landowners. To address the risk of easement challenges, the Conservancy intends to become a member of the Land Trust Alliance and participate in their land trust accreditation and risk management training programs. The Conservancy also intends to enroll in Terrafirma, a conservation defense liability insurance pool. These programs add about $500,000 to Yolo HCP/NCCP implementation cost over the permit term.

8.3.6 Local Partner Activities in Riparian Corridors

Activities in the Cache Creek and Putah Creek riparian corridors will contribute to the conservation of habitat for species that are protected by the Yolo HCP/NCCP. The Cache Creek Resources Management Plan (CCRMP) defines a number of activities within the Cache Creek Area Plan that are consistent with the HCP/NCCP conservation strategy. Activities budgeted on an annual basis include tracking and monitoring for invasive species control, elderberry surveys, creek walk monitoring, aerial surveys and riparian vegetation mapping and analysis, riparian and wetlands restoration, off-highway vehicle (OHV) enforcement, and remediation. In total, Yolo County, through the Cache Creek Area Plan, spends about $221,000 annually to fund these activities that contribute to the conservation of habitat for HCP/NCCP covered species.

The Lower Putah Creek Coordinating Committee (LPCCC) also conducts activities throughout the Putah Creek corridor that are consistent with the HCP/NCCP conservation strategy. The activities are budgeted annually and paid for with local funding from the Solano County Water Agency (SCWA) and in-kind services from the LPCCC and SCWA. Activities that contribute to the conservation of habitat for the Yolo HCP/NCCP's covered species include invasive species monitoring and management, wildlife monitoring and assessment, riparian and wetlands restoration (including engineering and permitting support), and native plant propagation. The annual budget for these activities in the Putah Creek riparian corridor is about $209,000.

These ongoing riparian corridor activities contribute to achieving the biological goals and objectives of the Yolo HCP/NCCP; therefore, the Conservancy has added these local partner costs to total HCP/NCCP costs for the 50-year permit term. At about $430,000 per year, these activities, in total, account for about $22 million of Plan costs.

8.3.7 Contingency

To account for uncertainties in costs, the model includes a contingency cost line item of 10 percent for acquisition and all other program costs except restoration costs and local partner activity costs. (The contingency budget for restoration activity—also 10 percent—is included in the Restore Natural Communities cost category. The budgets for local partner activities are set and do not require a contingency factor.) The contingency will be used on a short-term basis to offset any program costs that are higher than predicted. The Conservancy will use contingency funds only when needed to address costs beyond those predicted in this cost estimate and in annual budgets. Contingency funds could be used for the following:

- Acquiring materials and or data that were not forecast in the budgets,
- Adding temporary staff members or consulting services to address new issues,
- Acquiring land that is more expensive than planned or property that generates extraordinary transaction costs,
- Applying more expensive management techniques in response to adaptive management needs and conducting additional monitoring, and
- Addressing unforeseen administrative or management costs.

Adaptive management needs may arise throughout the permit term in response to monitoring results or external data that dictate shifts in management techniques and protocols. Costs for routine adaptive management needs are included in the Reserve Management cost category.

Contingency funds could address other management needs, such as expected actions that simply cost more than budgeted or minor adjustments in management that result in higher costs. This contingency budget will accrue over time; therefore, it is expected to be adequate for supplementing the adaptive management budget described above, if necessary. The Conservancy could also use the contingency to fund other HCP/NCCP needs.

Contingency funds are assumed to be needed only during the permit term because most Plan costs will be complete, (e.g., reserve assembly, directed research), and other annual costs will not only be well understood by then but will also drop substantially after the permit term.

8.3.8 Costs in Perpetuity

The Conservancy expects some costs to be incurred only during the permit term (reserve system assembly, restoration, environmental compliance, remedial measures, and contingency), while other responsibilities and costs will continue in perpetuity. Many of the conservation actions must be implemented permanently because most of the effects of the covered activities are permanent (see Chapter 5, *Effects on Covered Species and Natural Communities*). For example, management must continue beyond the permit term to ensure that the reserve system retains the biological values maintained and enhanced during the permit term. Similarly, limited species biological monitoring must continue beyond the permit term to ensure that management actions are effective.

Overall, annual costs beyond the permit term are estimated to be about 21 percent of average annual costs in the final years of the permit term (Table 8-5, *Yolo HCP/NCCP Post-permit Costs, Annual Average Costs in Perpetuity*). Many reserve system management activities continue beyond the permit term, but enhancement actions will be discontinued and management planning will be reduced. The costs for directed research, scientific review, monitoring plans, and natural communities monitoring will be discontinued, and ongoing species biological monitoring costs will be at about 25 percent of the level in place at the end of the permit term. Staffing and other plan administration costs will be at about 25 percent of the level in effect during the last five years of the permit term. Estimated annual costs in perpetuity are shown in Table 8-5, *Yolo HCP/NCCP Post-permit Costs, Annual Average Costs in Perpetuity*. Appendix H describes the assumptions used to estimate these costs.

Table 8-5. Yolo HCP/NCCP Post-Permit Costs, Annual Average Costs in Perpetuity

Cost Category	Annual Average Cost	Assumptions
Assemble Reserve (except restored lands)	$0	Reserve assembly complete in Year 45
Restored Lands (ongoing management)	$50,250	75% of annual average level of effort in Year 50 is maintained on average in perpetuity
Restored Lands (ongoing species monitoring)	$48,000	30% of annual average level of effort in Year 50 is maintained on average in perpetuity
Conservancy Reserve Management Staff and Overhead	$30,500	50% of annual average level of effort in Year 50 is maintained on average in perpetuity
Reserve Unit Management Plans (development and updates)	$37,077	Seven new reserve unit management plans, then each updated every 20 years; annualized cost
Other Management Costs	$64,000	50% of annual average level of effort in Year 50 is maintained on average in perpetuity
Natural Communities Monitoring (rest of reserve)	$0	Not required after permit term
Species Monitoring (rest of reserve)	$61,5000	25% of annual average level of effort in Year 50 is maintained on average in perpetuity
Plan Administration	$152,750	25% of annual average level of effort in Year 50 is maintained on average in perpetuity
Local partner activities in riparian corridors	$0	Not required
Contingency Fund	$0	Not required
Total	**$444,077**	
Percent of Average Annual Cost, Years 46–50	**21%**	

Notes:
In 2017 dollars.
Detail may not add to total because of independent rounding.

Based on the endowment model, an endowment fund of approximately $13.7 million in 2017 dollars would be needed at the end of the permit term to generate average real returns (i.e., inflation adjusted) that would be adequate for funding $444,000 (Table 8-5) in post-permit term reserve system management and monitoring, including accounting for inflation after the permit term. Annual real returns on endowment fund balances were assumed to equal 3.25 percent. This key assumption was based on a current habitat endowment management program operated by the National Fish and Wildlife Foundation (NFWF) under agreement with the California Department of Fish and Wildlife (CDFW). The 3.25 percent annual real rate of return is net of NFWF administrative fees.

The endowment will be built over the entire permit term through allocation of a percentage of HCP/NCCP fee revenue (see Section, 8.4.1*, HCP/NCCP Fees*). Nominal rates of return on endowments routinely exceed inflation. Consequently, of the total endowment fund balance required at the end of the permit term, only about 40 percent will come directly from HCP/NCCP fee revenue, or about $5.6 million (2017 dollars; see Table 3 in Appendix I). The remainder of the funding will come from endowment capital gains, interest, and dividend income on endowment investments. Fee levels will

be adjusted as needed to ensure sufficient endowment funding by the end of the permit term (see Section 8.4.1.6, *Adjustment of HCP/NCCP Fees*, below).

8.3.9 Plan Preparation Costs

From fiscal year (FY) 2012–2013 through estimated completion and adoption of the Yolo HCP/NCCP in FY 2017–2018, the Conservancy estimates that member agencies will spend approximately $1.5 million on preparation of the Plan. The Conservancy has also spent $3.58 million from the Conservancy's Swainson's hawk Mitigation Trust Account (MTA) on plan preparation. These amounts exclude all grants and other outside funding, and they will be reimbursed to the Conservancy and the MTA from HCP/NCCP fees during the permit term (see Section, 8.4.1, *HCP/NCCP Fees*). Total costs for plan preparation to be reimbursed are estimated to be $5.1 million.

8.4 Funding Sources and Assurances

Methods for assembling and equitably distributing the costs associated with the Yolo HCP/NCCP have been the subject of extensive discussion and consideration by members of the public, officials from local, state, and federal agencies, and elected officials. The Yolo HCP/NCCP, which incorporates the input from this diverse group, offers a balanced approach to conserving species and habitats while equitably distributing the costs.

The Yolo HCP/NCCP establishes a framework for compliance with state and federal endangered species laws and regulations that accommodates future growth in the Plan Area. Without the Yolo HCP/NCCP, public and private entities whose activities would affect threatened or endangered species and their habitats would be required to obtain permits and approvals from the U.S. Fish and Wildlife Service (USFWS) and CDFW before undertaking those activities to mitigate the effects of their activities on the affected species. To comply with the Natural Community Conservation Planning Act (NCCPA) and thereby obtain necessary permits under the California Endangered Species Act (CESA), the Yolo HCP/NCCP also provides for the conservation of the covered species in the Plan Area. Proponents of private and public development activities will benefit from this comprehensive approach in several ways: They will be assured of state and federal take coverage, they will avoid the time and expense of securing their own regulatory approvals, and they will have certainty and predictability with respect to their permit obligations and costs. Consequently, the HCP/NCCP fees imposed to implement the Yolo HCP/NCCP include some of the costs of providing for the conservation of covered species in the Plan Area that are necessary to meet the requirements of the NCCPA.

A variety of groups will directly benefit from the Yolo HCP/NCCP; therefore, those groups will also share in the responsibility for funding and implementing the Yolo HCP/NCCP. This shared responsibility includes all of the costs associated with Plan implementation described in Section 8.3, *Cost Estimate Methodology*.

Plan funding will come from several different sources, which fall into one of four categories:

- **HCP/NCCP Fees.** This source includes private and public sector development effect fees. Fees are also charged on specialized effects such as wetlands (wetland fee) and temporary effects (temporary effect fee). These HCP/NCCP fees are described in Section 8.4.1, *HCP/NCCP Fees*;

- **Local Funding.** Non-fee local funding will complement fee-based funding sources. Non-fee local funding will take many forms but consist primarily of activities funded and managed by local government agencies in cooperation with the Conservancy that will offset costs to implement the Yolo HCP/NCCP. Additional funding is expected from private foundations. These non-fee local funding sources cannot be used for mitigation purposes; they will be directed toward the NCCP portion of the Yolo HCP/NCCP (i.e., provide for the conservation of covered species in the Plan Area necessary to meet the requirements of the NCCPA). Local funding sources are described in Section 8.4.2, *Local Funding*;
- **Interest Income.** The Conservancy is expected to gain substantial revenue from interest on the Yolo HCP/NCCP endowment as it grows prior to its use to fund costs in perpetuity after the 50-year permit term. The Conservancy will also gain limited income from interest on revenue not yet spent. Interest income is described in Section 8.4.2.5, *Interest Income*; and
- **State and Federal Funding.** This source includes federal and state grant programs. Certain state and federal funding can be used only for portions of the Yolo HCP/NCCP that provide for the conservation of covered species in the Plan Area (i.e., not for mitigation).[12] State and federal funding sources are described in Section 8.4.3, *State and Federal Funding*.

Table 8-6, *Funding Plan*, summarizes the expected revenues and their sources over the 50-year permit term. The table includes total costs described in the preceding sections of this chapter, including endowment contributions and plan preparation costs. HCP/NCCP fee funding will contribute mostly to mitigation of effects, while non-fee funding from local, state, and federal sources will contribute mostly to the conservation needs of the Yolo HCP/NCCP. Each funding source is described below.

Table 8-6. Funding Plan

	Amount ($ 2017)	Percent of Total Funding[e]
Yolo HCP/NCCP Funding		
Mitigation Funding		
Land Cover Fee	$215,882,000	51%
Wetland Fee	$66,526,000	16%
Temporary Effect Fee[a]		0%
Subtotal Mitigation Funding	$282,408,000	66%
Conservation Funding		
Local Sources		
Davis Open Space Program[b]	$5,146,000	1%
Cache Creek Area Plan	$16,666,000	4%
Lower Putah Creek[c]	$10,437,000	2%
Local Foundations & Other Non-Profits	$10,000,000	2%
Subtotal Local Sources	$42,249,000	10%
State & Federal Sources[c]	$72,569,000	17%
Other Local, State & Federal Sources[d]	$18,287,000	4%

[12] The exception to this rule is if a state agency seeks Permit coverage for a public project under the HCP/NCCP as a Special Participating Entity (see Section 8.4.1.9, *Special Participating Entities*).

	Amount ($ 2017)	Percent of Total Funding[e]
Subtotal Conservation Funding	$133,105,000	31%
Other Funding		
Endowment Fund Investment Income	$8,149,000	2%
Operational Fund Interest Income	$1,300,000	<1%
Subtotal Other Funding	$9,449,000	2%
Total Yolo HCP/NCCP Funding	$424,962,000	100%
Yolo HCP/NCCP Costs		
Total Yolo HCP/NCCP Costs		
Plan Implementation (50-Yr. Permit Term)	$406,187,000	96%
Endowment Fund Balance, Yr. 50	$13,699,000	3%
Plan Preparation	$5,076,000	1%
Total Yolo HCP/NCCP Costs	$424,962,000	100%
Yolo HCP/NCCP Net Revenue		
Surplus / (Deficit)		0%

[a] Temporary effects and consequent fee revenue are likely to be quite small relative to permanent effects, and any estimates likely to be speculative, so temporary effects fee revenue is not estimated for purposes of the funding plan. Any such revenue will be credited to the development fee obligation at each five-year adjustment of the funding plan and fee levels adjusted accordingly (see section 8.4.1.6 *Adjustment of Development Fees*).

[b] The City of Davis funding objective is $10 million over 50 years in nominal dollars (not adjusted for inflation). The amount shown here is based on $200,000 per year, discounted for inflation over the permit term. The actual amount of funding adjusted for inflation will vary, depending on the timing of acquisitions and inflation rates.

[c] Estimate of state and federal funding is based on current funding sources, which are generally limited to land acquisition and wetland restoration/creation costs. Assumes state and federal funds pay for acquisition of 8,231 acres of conservation land and acquisition and restoration of an additional 44 acres of lands. See Section 8.4.3, *State and Federal Funding*, for details.

[d] Estimate of new sources of funding for the conservation share of the HCP/NCCP from a combination of local, state, and federal sources reasonably anticipated during the 50-year permit term.

[e] Percentages do not sum due to rounding.

8.4.1 HCP/NCCP Fees

The Yolo HCP/NCCP utilizes a variety of private and public development-based fees to fund mitigation that will offset losses of land cover types, covered species habitat, and other biological values. These one-time fees pay for the full cost of mitigating project effects on the covered species and natural communities. In addition, these fees are expected to satisfy all or most of the CEQA mitigation needs for biological resources, as discussed in Chapter 1, *Introduction*. Participating jurisdictions may assess their own fee to HCP/NCCP applicants to cover their processing costs.

Fees are based on the maximum allowable permanent and temporary effects on the land cover types shown in Table 6-3. The Conservancy used land cover effects because land cover is the best predictor of potential species habitat and is applicable to all of the covered species (see the species accounts in Appendix A). Effects on land cover are also used, in part, as the basis of the conservation strategy (see Chapter 6 for details). The following Yolo HCP/NCCP fees will apply in the Plan Area (summarized in Table 8-7, *HCP/NCCP Development Fee Schedule*):

- Land cover fee,

- Wetland fee, and
- Temporary effect fee.

The following subsections describe the Yolo HCP/NCCP fees, the areas within the Plan Area to which they are applied, and how they are calculated. These sections also describe the process and timing for collecting fees and how fees are adjusted over time. The Conservancy will comply with all applicable provisions of the Mitigation Fee Act[13] as to the deposit, accounting, expenditure, and reporting of such fee revenues and any other applicable legal requirements.

Fees must meet the following criteria:

- Fees will assist in meeting Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and NCCPA requirements;
- Fees generate sufficient funding to offset a proportionate share of the Yolo HCP/NCCP's costs, including endowment contributions to fund all post-permit activities in perpetuity (see Section 8.3.8, *Costs in Perpetuity*) and reimbursement of the local share of plan preparation costs (see Section 8.3.9, *Plan Preparation Costs*);
- Fees are consistent with the general level of costs that would be associated with comparable project-by-project mitigation of biological effects in the Plan Area; and
- Fees compare favorably with the actual or expected future cost of FESA and CESA permitting on a project-by-project basis, including the costs of regulatory uncertainty and project delays associated with a typical permitting process.

The underlying analysis for the HCP/NCCP fee calculations is provided in Appendix I, *Funding Plan*.

Table 8-7. HCP/NCCP Development Fee Schedule

	Fee per Acre of Land Conversion
Land Cover Fee per Acre [a, b]	$12,952
Wetland Fee per Acre [b]	
Fresh Emergent Wetland	$71,651
Valley Foothill Riparian	$79,353
Lacustrine and Riverine	$57,464

Note:
In 2017 dollars.

[a] Applied to effects on all land cover types, including other land cover types (see Chapter 5, Sec. 5.6.7, *Other Land Cover Types*), except those other land cover types that are (1) developed areas or (2) vegetated corridors that do not overlap with giant garter snake habitat, or (3) barren except gravel and sand bars.

[b] The temporary effect fee is calculated based on the land cover fee or wetland fee. See Sec. 8.4.1.4, *Temporary Effect Fee*, explanation.

8.4.1.1 Exemptions from HCP/NCCP Fees

Activities or projects not covered by the Yolo HCP/NCCP are not required to pay HCP/NCCP fees.[14] The Conservancy has determined that some covered activities should be exempt from HCP/NCCP

[13] California Government Code Sections 66000–66025.

[14] See Chapter 3 *Covered Activities*, for what is covered and what is not covered by the Yolo HCP/NCCP.

fees because they will have minimal or negligible adverse effects on the covered species, have primarily or entirely beneficial effects, will be difficult and expensive to track and report, or a combination of these factors. For these reasons, the following covered activities are *exempt* from HCP/NCCP fees and will not be tracked or reported by the Conservancy:

- All covered activities that occur on the following land cover types (see Chapter 2, *Existing Ecological Conditions*, for land cover type descriptions): developed except vegetated corridors that overlap with giant garter snake modeled habitat, and barren except where it overlaps with covered species modeled habitat. [15] The Conservancy will use a verified land cover map provided by the project proponent (see Section 4.2.2, *HCP/NCCP Application Package*) in comparison to the land cover map in the final Yolo HCP/NCCP to determine which areas are developed and therefore exempt from HCP/NCCP fees[16].

The following covered activities are also exempt from the Yolo HCP/NCCP fees but are tracked as effects, count against the Stay-Ahead Provision, and are reported by the Conservancy:

- CCRMP activities that are covered by the HCP/NCCP;
- Additions to existing structures or new structures within 50 feet of an existing structure (e.g., a new garage) that result in less than 5,000 square feet of impervious surface as long as no fresh emergent wetland, riparian, lacustrine, or riverine land cover types are affected. Expansion measurements are based on the existing structure's footprint at the time of Plan commencement. Subsequent additions must be added to the original amount to determine whether this threshold has been crossed;
- Activities on a parcel that is less than 2.0 acres, unless the project proponent's site survey[17] shows that the project will adversely affect suitable habitat for a covered species;
- Recreational facilities such as trails, signs, and other improvements within the HCP/NCCP reserve system; and
- Implementation of the conservation actions described in Chapter 6 (or otherwise consistent with the Yolo HCP/NCCP's conservation strategy) inside or outside the reserve system.

These exemptions overlap with the exemptions from conditions on covered activities described in Section 4.4, *Exemptions from Avoidance and Minimization Measures*.

8.4.1.2 Land Cover Fee

The primary component of the Yolo HCP/NCCP fees is a land cover fee. This fee is based on the mitigation of a new development's effects on land cover types at the project site that support the covered species. The basis for the land cover fee is that the primary effect on covered species is through the direct and indirect loss or degradation of habitat (see Chapter 5, *Effects on Covered*

[15] CCRMP activities affecting barren lands will not pay fees, as all CCRMP activities are exempt.

[16] If the extent of developed land cover mapped by the project proponent is substantially greater than what is mapped in the final Yolo HCP/NCCP, the local jurisdiction or the Conservancy will require the project proponent to apply the mapped extent of developed land cover in the Yolo HCP/NCCP to the fee calculation. Project proponents may contest the mapped extent of the developed land cover type on a project site by documenting the land cover type on the site prior to adoption of the Yolo HCP/NCCP (i.e., historic aerial photos, survey reports). Evidence provided by project proponents is subject to review by the local jurisdiction and the Conservancy, in accordance with the mapping methods described in Chapter 2. Any substantial increase in developed land cover from the Yolo HCP/NCCP's land cover map (i.e., a substantial reduction in fees) must be approved by the local jurisdiction and the Conservancy.

[17] See Section 4.2.2, *Item 3: Land Cover Mapping and Planning-Level Surveys,* for details.

Species and Natural Communities, for effects on each covered species). The primary determinant of the HCP/NCCP fee is the amount of effects by land cover type because habitats for covered species are so closely tied to land cover types (see Chapter 2, *Existing Ecological Conditions*, and Appendix A, *Covered Species Accounts,* for details). Land cover fees on private and public projects will be based on the *area of impact*. The area of impact for the purposes of assessing the land cover fee is defined as the area where permanent impact occurs, plus an area 50 feet from these effects, but not extending beyond the boundary of the parcel. The 50-foot buffer accounts for indirect effects of construction and operation (or occupancy) of the project. (Temporary effects are subject to the temporary effect fee described below.)

Linear public projects (e.g., in-stream and utility and road corridors) will always be assessed a land cover fee that is based on the area of effect plus a 10-foot buffer, regardless of parcel size. The fee will not be paid on any land that has been set aside for the reserve system (i.e., conservation easement).

The land cover fee is based on the fair share of the total HCP/NCCP costs associated with mitigating effects of covered activities. Land cover fee revenues may fund any type of Plan cost, including costs associated with the conservation of covered species, as long as other revenue sources directly offset this funding by funding an equivalent amount of the mitigation share of Plan costs.

Reserve system assembly costs allocated to the land cover fee are based on the per-acre cost of conservation easements on newly protected lands and exclude the per-acre cost of enrolling pre-permit reserve lands. Pre-permit reserve lands already provide some level of ecological protection and therefore cannot mitigate the effects of future covered activities under the HCP/NCCP (see Section 6.1, *Introduction*, in Chapter 6, *Conservation Strategy*, including Table 6-1(b), *Reserve System Land Types*). Table 8-8, *Land Cover Fee,* shows the calculation of the land cover fee and total fee revenue based on the average cost per acre for newly protected lands, the share of the reserve allocated to mitigation, and maximum allowable permanent effects.

The NCCP permit provides projects and activities covered by the Yolo HCP/NCCP a unique economic benefit—state regulatory assurances for all covered species. As described in Section 7.7.4, *State NCCP Assurances*, the state provides assurance that if there are unforeseen circumstances[18], no additional financial obligations or restrictions on the use of resources will be required of the Permittees without their consent. The state provides these strong regulatory assurances for all of the covered species, whether they are currently listed by the state or not. Such state regulatory assurances are only available through an NCCP. The Yolo HCP/NCCP covers 13 species, including four species not currently state listed: valley elderberry longhorn beetle, western pond turtle, western burrowing owl, and tricolored blackbird. The regulatory assurances provided by the NCCP permit ensure that even if the state lists any of these species, the state will not require the proponent of a covered activity using the Yolo HCP/NCCP to pay more in fees or apply additional avoidance or minimization measures than the Yolo HCP/NCCP currently requires. In addition, an NCCP is the only mechanism available that allows the state to provide take authorization for fully protected species. The Yolo HCP/NCCP covers one fully protected species, white-tailed kite, and provides limited take authorization as described in Section 5.7.7, *White-Tailed Kite*. The Conservancy believes these unique state regulatory assurances, unique only to an NCCP, confer real economic benefit to covered activities in the form of:

- clear and fixed project obligations for 50 years (see Chapter 4, Application Process and Conditions on Covered Activities);

[18] Changed and unforeseen circumstances are defined in Section 7.7.1, *Changed and Unforeseen Circumstances*.

- predictable fees;
- take authorization for projects with impacts to white-tailed kite; and
- no risk of additional burdens or cost when additional species are listed by the state.

The economic value of these NCCP benefits to covered activities is included in the mitigation share of the Plan.

Table 8-8. Land Cover Fee

Category	Amount
Mitigation Cost Share in Acres[a]	17,619
Cost per Acre[b]	$12,687
Mitigation Cost Share	$215,881,992
Land Conversion (acres)	16,668
Land Cover Fee per Acre of Land Conversion	**$12,952**

Notes:
In 2017 dollars.
[a] Excludes acquisition of restored lands that are funded separately by wetland fees.
[b] Cost per acre based on total costs and total acres for newly acquired lands.

8.4.1.3 Wetland Fee

Public and private project proponents are required to map all land cover types, including all fresh emergent wetland, valley foothill riparian, and lacustrine and riverine types, as part of the Yolo HCP/NCCP's application package (Section 4.2.1, *Authorization Process*). Public and private project proponents that affect these wetland land cover types will be required to pay a *wetland fee* in addition to the land cover fee. The Conservancy may waive the wetland fee if the applicant conducts wetland mitigation through restoration at a ratio of at least 1:1, and if the Conservancy and wildlife agencies agree that this restoration can be counted toward the restoration commitments in the HCP/NCCP.

Table 8-9, *Wetland Fee*, shows the calculation of the wetland fee and total fee revenue based on the natural community affected. The wetland fee is intended to pay the full cost of restoration of these land cover types off-site, including design, implementation, post-construction monitoring, management, and remediation throughout the permit term.

The wetland fee will cover the cost of wetland preservation and restoration. Wetland fees vary by wetland type to account for the different costs of restoration at a 1:1 mitigation ratio. Table 8-9 shows the calculation of the wetland fees, which are based on the average cost per acre for restoration costs by natural community and the mitigation ratio.

Table 8-9. Wetland Fee

	Fresh Emergent Wetland	Valley Foothill Riparian	Lacustrine and Riverine	Total
Costs Allocated to Restoration[a]	$6,305,320	$48,246,605	$14,940,719	$69,492,644
Restored Amount (acres)	88	608	260	956
Restoration Cost per Acre	$71,651	$79,353	$57,464	
Mitigation Ratio[b]	1.00	1.00	1.00	
Wetland Fee per Acre of Land Conversion	**$71,651**	**$79,353**	**$57,464**	

Notes:
In 2017 dollars.

a. Includes land acquisition for restoration, management, monitoring, and a share of endowment contribution and plan preparation costs. See Section 8.3.2, *Restore Natural Communities*, for details.

b. The conservation strategy requires that all wetland loss be restored at a ratio of 1:1. Wetland preservation is also a component of wetland mitigation and is included in the land cover fee.

8.4.1.3.1 Calculating Fees for Wetland Effects

The fees for effects on fresh emergent wetland and lacustrine and riverine communities are calculated by multiplying the applicable wetland fee (Table 8-9) by the amount of effect (in acres) on the wetland, water body, or stream. Covered activities that do not completely avoid indirect effects on wetlands, as described in Chapter 4, Section 4.3.3, *Sensitive Natural Communities*, will be considered permanently affected. The area of indirect effects, as determined by the local jurisdiction or Conservancy, will be added to the area of direct effects when calculating fees for wetland effects. Exceptions to this are described further in AMM9 and AMM10.

The fee for effects on valley foothill riparian is based on the amount of direct effects on woodland or scrub vegetation, in acres, as measured from the outer limit (the side away from the stream) of the tree or shrub canopy (drip line). Effects on valley foothill riparian that also affect the stream channel will incur the lacustrine and riverine fee, which will be based on direct and indirect effects on each wetland.

8.4.1.3.2 Aquatic Restoration Provided in Lieu of Wetland Fee

Unlike other HCP/NCCP fees, wetland fees cannot be waived in lieu of land dedication (see Section 8.4.1.8, *Land Provided in Lieu of* HCP/NCCP *Fees*). Project proponents, however, have the option of restoring, managing, and monitoring their own wetland, stream, or riparian mitigation site (on- or off-site) in lieu of paying all or part of the wetland fee. Construction of wetland restoration will be initiated prior to or concurrent with construction of the covered activity, the mitigation will be consistent with the requirements of Chapter 6, the site will be protected by a conservation easement, and management and monitoring will be funded in perpetuity. Applicants may propose paying the Conservancy to manage and monitor the site after construction is completed. Construction of all aquatic restoration projects must comply with the stay-ahead provision of the Yolo HCP/NCCP and must be completed by Year 40, consistent with the requirement for the Conservancy to do the same (see Chapter 6).

The Conservancy must approve requests to perform aquatic restoration in lieu of paying the wetland fee. The Conservancy's evaluation of proposals to perform restoration in lieu of wetland fees will be based, in part, on the history of the applicant with respect to performing successful wetland restoration elsewhere and whether the restoration project is consistent with the conservation strategy and requirements of the Yolo HCP/NCCP. Restored aquatic features must also meet the reserve design and assembly criteria in Chapter 6. For the Conservancy to approve aquatic restoration in lieu of fees, the local jurisdiction that approves the project must secure a guarantee through conditions of approval, ensuring that the restoration or creation will be implemented and remediated if the success criteria are not met. In the case of a Permittee that proposes restoration in lieu of wetland fees, the Permittee must sign an agreement with the Conservancy to provide this guarantee. After the success criteria are met and the applicant assures funding, the Conservancy will assume all management and monitoring responsibility of the restoration site as part of the reserve system.

Alternatively, applicants may purchase appropriate wetland restoration credits in a private mitigation bank in the Plan Area that has been approved separately by USFWS and CDFW and designed to service the Yolo HCP/NCCP (see Section 7.5.9, *Use of Mitigation Banks*, for more details).

8.4.1.4 Temporary Effect Fee

As described in Chapter 3, *Covered Activities*, there are many covered activities that are ongoing and that result in small, localized, temporary effects on natural land cover types. As described in Chapter 2, the majority of these activities, particularly those within urban areas, will support little or no covered species or their habitats. Some ongoing activities, however, are expected to have substantial temporary effects on covered species because of their large footprint, location in natural land cover types, local soils or hydrology, or a combination of these factors. Temporary effects are defined in Chapter 5 as direct effects that alter land cover for less than one year and that allow the disturbed area to recover to pre-project or ecologically improved conditions within one year of completing construction (see Section 5.3, *Terminology*).

Temporary effects that meet this definition are subject to a *temporary effect fee*, unless specifically excluded by the section below. Projects that are subject to the temporary effect fee will pay the fee on the portion of the site in which the temporary effects occur, in one of two ways, as selected by the applicant.

- If the frequency of the effect over the permit term can be predicted, the applicant may pay the fee for infrequent treatments up front to address all effects during the permit term. This discounted fee is calculated as a fraction of the full land cover fee. The total fee will be calculated using the formula below. (F = the number of calendar years in the remainder of the permit term in which the activity occurs.)

  $$\text{Temporary Effect Fee} = \text{Land cover fee} \times \text{area of temporary effect in acres} \times (F/50)$$

  To qualify for the temporary effect fee, the maximum time allowed for a site to return to pre-project conditions will be one year from the end of construction. With the denominator held at 50 years, the formula discounts the fee for temporary effects that occur less frequently or that occur later in the permit term. The project proponent must document to the satisfaction of the Conservancy that the disturbance and site recovery occurred at or better than the predicted timeline.

  or

- The applicant may pay the full land cover fee (see Table 8-7, *HCP/NCCP Development Fee Schedule*) and retain the ability to disturb the area as often as necessary during the permit term.

For example, if a project proponent has a temporary effect that occurs in one year of the 50-year permit term on a total of 3.0 acres and the land cover fee per acre is $10,000 (in the example only; the actual land cover fee will vary annually), the project proponent would pay $600 (= $10,000 × 3.0 × [1/50]). In another example, if a project proponent has a temporary effect that occurs every other year from Year 10 to Year 50 of the permit term (i.e., for 40 years) and affects 10.0 acres total, the project proponent would pay $40,000 (= $10,000 × 10.0 × [20/50]).

Temporary effects that occur in the same location repeatedly during the permit term and that pay the full land cover fee will be counted and tracked as a permanent effect. Temporary effect fees paid on a site can be credited toward any permanent effect fees that may be required on the same site in the future.

As described above, all or a portion of the temporary effect fee can be waived in exchange for land dedication or wetland restoration, based on the nature of the effect. The amount waived will be determined by the Conservancy on a case-by-case basis, according to the rules and principles described above.

Temporary effects that occur within fresh emergent wetland, valley foothill riparian, or lacustrine and riverine land cover types will be assessed a temporary effect fee, according to the formula shown above, but based on the applicable wetland fee (see Table 8-9, *Wetland Fee*).

Applicants have the option of developing and implementing their own wetland restoration project in lieu of the temporary wetland fee. If the Conservancy approves the applicant's restoration plan, then no temporary wetland effect fee is required. The Conservancy will verify that the applicant's wetland restoration project is constructed according to specifications and that the project meets its pre-defined success criteria, based on the Plan's conservation strategy.

Temporary effects and consequent fee revenue are likely to be quite small relative to permanent effects and are highly uncertain. Therefore, temporary effects fee revenue is not estimated for purposes of the funding plan. Any such revenue will be credited to the HCP/NCCP fee obligation at each five-year adjustment of the funding plan and land cover fee adjusted accordingly (see Section 8.4.1.6, *Adjustment of HCP/NCCP Fees*).

8.4.1.4.1 Activities Not Subject to the Temporary Effect Fee

To reduce administrative costs, temporary effect fees will not be assessed on any covered project with effects of less than 0.10 acre, except for wetlands (fresh emergent wetlands, valley foothill riparian, and lacustrine and riverine land cover types). All covered activities that result in temporary effects on wetlands of any size will be charged a temporary effect fee.

The conservation and monitoring actions described in Chapter 6, *Conservation Strategy,* will not be assessed a temporary effect fee. For example, wetland, stream, and riparian restoration projects conducted for the Yolo HCP/NCCP may result in temporary effects; however, because these actions support the conservation strategy, they will not be assessed a temporary effect fee.

Sediment removal in artificial off-channel detention basins or groundwater recharge ponds, when free of vegetation, is not subject to temporary effect fees.

Covered activities such as mowing, tree trimming, and other activities that result in temporary effects that occur in areas with "urban ruderal" or "urban or built-up" land cover types (see Chapter 2, *Existing Ecological Conditions,* for definitions) are subject to the conditions described in Chapter 4, *Application Process and Conditions on Covered Activities,* but will not be charged a temporary effect fee because the effect analysis assumed these land uses have little or no value for the covered species.

8.4.1.5 Collection of HCP/NCCP Fees

Permittees will collect all fees paid by private applicants to their jurisdictions. Permittees will transfer these fees to the Conservancy on a regular basis but quarterly or more frequently if needed. The Conservancy will determine the transfer schedule and process early in Plan implementation.

All fees paid by public agencies (i.e., the Permittees) will be similarly collected and transferred to the Conservancy, according to the same process and schedule developed by the Conservancy for fees from private applicants. Permittees may pre-pay fees if desirable to assist with ensuring the Conservancy has a reliable source of revenue for ongoing costs.

8.4.1.6 Adjustment of HCP/NCCP Fees

The dynamic nature of the costs associated with HCP and NCCP implementation, including land acquisition costs and operating, maintenance, and management costs, requires a flexible approach to funding through time. Many existing HCPs have not incorporated sufficient flexibility into their funding mechanisms and, as a result, have found that funding lags behind increasing costs, compromising Plan implementation. The Yolo HCP/NCCP includes two mechanisms for adjusting fee levels: automatic adjustments and periodic assessments. The Conservancy will perform both adjustments and will provide the results to all Permittees.

8.4.1.6.1 Automatic Adjustment of Fees

The two primary costs of the Yolo HCP/NCCP—land acquisition and operations/maintenance—will most likely change at different rates over time. Conservation easement costs for cultivated agriculture, which will make up the majority of the reserve system, can fluctuate on an annual basis and at rates that are significantly different from the general inflation rate. In Yolo County, for example, the annual change in the median value of vegetable and irrigated field crops since 2000 has ranged from a decrease of 18 percent to an increase of 31 percent. The annual inflation rate during that period rarely fluctuated by more than a percentage point from the prior year. Other HCP/NCCP costs, including the cost of personnel, supplies, and equipment involved in managing, operating, restoring, and maintaining the reserve system, will more closely follow the general rate of inflation. To account for these differing rates of inflation, the Conservancy will update the HCP/NCCP fee automatically on an annual basis and by a date determined by the Conservancy's Board of Directors. The Board will determine the date within the first six months of Plan implementation, based on the indices and procedures described in Table 8-10, *HCP/NCCP Fee Adjustment Indices*.

The variation in the cost of land due to site-specific factors means that it is difficult to develop land cost indices; consequently, no such indices are available. Annual changes in agricultural land value can be estimated from published sources, such as the ASFMRA values, however. The Conservancy will construct an annual index from the data by calculating the year-to-year change in the median value, weighted by the types of agricultural lands that will compose the reserve system. The index may be a rolling average of the change over prior years (e.g., three or five years) to smooth out the large fluctuations in agricultural land values mentioned above and avoid similar fluctuations in the

HCP/NCCP fees. An index that is based on agricultural values is superior to one that is based on housing values as a surrogate for land values because the Yolo HCP/NCCP's reserve system will be assembled from lands that are largely beyond the spheres of urban development in Yolo County.

Table 8-10. HCP/NCCP Fee Adjustment Indices

		Annual Adjustment Index			
			2003–2016 Annual Change		2003–2016 Compounded Annual Growth Rate
Fee/Cost Component	Initial Index Weight[a]	Index Description	Low	High	
Land Cover Fee					
Reserve System Assembly[b]	56%	Five-year rolling average annual compounded change in agricultural land values for the most-recent year-to-year period, weighted by remaining reserve lands to be acquired.[c]	-7.4%	20.6%	5.7%
All Other Plan Costs	44%	Annual change in the Consumer Price Index – All Urban Consumers (all times, not seasonally adjusted) for the West region during the most-recent year-to-year period.[d]	-0.4%	3.5%	1.9%
Wetland Fee					
Reserve System Assembly	16%	Same index as land cover fee for Reserve System Assembly component.	-7.4%	20.6%	5.7%
All Other Plan Costs	84%	Same as land cover fee for All Other Plan Costs component.	-0.4%	3.5%	1.9%

a. Index weight based on estimated sources and uses of funds over entire permit term. As the reserve system is assembled, these ratios may change and should be recalculated as part of the 5-year periodic adjustment (see Section 8.4.1.6.2, *Periodic Assessment and Adjustment of Fees*).

b. Fee title and conservation easement costs only. Excludes all other costs associated with reserve assembly transactions such as staff costs, pre-acquisition assessments, due diligence, and legal costs.

c. See ASFMRA annual reports, *Trends in Agricultural Land and Lease Values.*

d. U.S. Department of Labor, Bureau of Labor Statistics. 2016. *Databases, Tables & Calculators by Subject.* Available: http://www.bls.gov/data/. Accessed: November 2017.

The Conservancy will use the Consumer Price Index (CPI) from the U.S. Bureau of Labor Statistics for the West Region to adjust the non–land cost portion of fees. The Conservancy may decide to use other indices during Plan implementation if other indices are developed that better predict the costs of the Yolo HCP/NCCP.

8.4.1.6.2 Periodic Assessment and Adjustment of Fees

Every 5 years, the Conservancy will complete a fee assessment to review the costs and the underlying assumptions the Conservancy developed as part of the original funding plan as well as estimate the remaining costs to implement the Yolo HCP/NCCP. The review could include comparing appropriate land sales in the study area transacted after the start of the Yolo HCP/NCCP with the original land cost assumptions (see Appendix H). The Conservancy can also compare the actual costs of operating, maintaining, and managing the reserve system to the original estimates of these costs to determine the actual change in non-land costs. The Conservancy will adjust fees based on this

analysis to ensure full funding of the mitigation share of remaining HCP/NCCP costs, including endowment contribution and plan preparation. Automatic annual fee increases will resume after the periodic fee assessment and will continue until the next periodic assessment.

8.4.1.7 Timing of HCP/NCCP Fee Payment

For private projects, the Conservancy will require the payment of HCP/NCCP fees by the time the grading permit for the project is issued. If a grading permit is not required, fees must be paid before or at the time the first construction permit is issued.

For public projects, the Conservancy will require payment of HCP/NCCP fees prior to implementing the covered activity. For public projects conducted by outside contractors, the timing of fee payment may coincide with the award of the construction contract because this represents the time at which the public agency commits to implementing the project.

8.4.1.8 Land Provided in Lieu of HCP/NCCP Fees

If a landowner or Permittee conveys a portion of the development site (either in fee simple or through a conservation easement) for inclusion in the Yolo HCP/NCCP's reserve system and the Conservancy and the wildlife agencies approve the inclusion, the Conservancy will not assess the land cover and/or land cover temporary effect fees on the portion of the property included in the reserve system. Landowners may also provide land separate from development sites for the reserve system, if approved by the Conservancy and the wildlife agencies. In both cases, for land provided on or off the covered activity site, landowners and Permittees that convey land to the Conservancy may receive credit for the dollar value of these acquisitions against select HCP/NCCP fees that might be owed by the landowner or Permittee because of the effects of their covered activities. Land to be conveyed by a landowner or Permittee will be eligible for HCP/NCCP fee credit if the land satisfies the criteria described below.

The Conservancy will determine the value of the conveyance of land to the Conservancy and any credit against HCP/NCCP fees on a case-by-case basis. Landowners or Permittees that convey land may be required to still pay a portion of the land cover fee to pay for HCP/NCCP costs related to land management, monitoring, and other operational costs. Any land provided in lieu of HCP/NCCP fees must contribute toward the implementation objectives and requirements of the Yolo HCP/NCCP. The Conservancy will consider all of the following as part of quantifying the credit:

- The extent to which the land would contribute toward the implementation objectives and requirements of the Yolo HCP/NCCP,
- The fair market value of the land based on an appraisal,
- Actual land transactions costs, and
- Actual costs of biological survey work performed to provide baseline data for the Yolo HCP/NCCP, if applicable.

The Conservancy will award any credits against HCP/NCCP fees from land conveyed after the conveyance has been completed.

Fee waivers and credits in exchange for land conveyed will be allowed only when the Conservancy determines that acceptance of land in lieu of funds is consistent with the conservation strategy and

funding plan. One of the factors the Conservancy will consider, for example, is whether the Conservancy has sufficient funds available or funding commitments to manage and monitor the conveyed land during the permit term and whether it will require an endowment contribution. The project proponent will provide funding to ensure management and monitoring of the conveyed land. The Conservancy will credit any funds provided by the landowner or Permittee to ensure management and monitoring against any land cover fee otherwise due. Land cannot be dedicated in lieu of wetland fees (only wetland restoration projects can be provided in lieu of wetland fees).

The Conservancy or local jurisdiction that processes the development application may charge additional administrative fees to account for the cost of reviewing and processing HCP/NCCP applications for the use of mitigation banks or mitigation receiving sites in lieu of the land cover fee.

8.4.1.9 Special Participating Entities

Special Participating Entities are described in Section 7.2.5, *Special Participating Entities*. For activities performed by a Special Participating Entity, the Special Participating Entity will pay any applicable development or wetland fees to receive take authorization. The Conservancy will also require an additional fee to cover the direct and indirect costs of extending permit coverage under the Yolo HCP/NCCP, including the cost of Conservancy staff time to assist with permit coverage and a portion of the cost of conservation measures that support species conservation.

8.4.1.10 Voluntary Participation in HCP/NCCP

Some private projects that are exempt from the Yolo HCP/NCCP's fees and ordinance may wish to pay Plan fees or comply with other Plan conditions to facilitate compliance with environmental laws other than the FESA or CESA. For example, projects that are otherwise exempt from the Yolo HCP/NCCP's fees may wish to pay Yolo HCP/NCCP fees and apply applicable conditions on covered activities, as described in Chapter 4, *Application Process and Conditions on Covered Activities,* through their local development approval process to enhance their project for other purposes (e.g., CEQA). These private projects would still be subject to the regulatory requirements of the FESA and CESA, if applicable.

8.4.2 Local Funding

Some funds for Plan implementation will come from local sources other than the Yolo HCP/NCCP's fees (Table 8-6, *Funding Plan*, and Appendix I). As described in Chapter 6, *Conservation Strategy,* for example, the CCRMP and LPCCC will perform activities directly in support of the Yolo HCP/NCCP's goals and objectives. In addition, the City of Davis has an Open Space Program that will acquire conservation easements that may be credited to the reserve system. The Conservancy can count such activities and actions conducted by local organizations toward the Yolo HCP/NCCP as long as those conservation actions meet the terms of the Yolo HCP/NCCP. (See Chapter 7, Section 7.2.4, *Other Land and Water Management Agencies,* for a description of Conservancy coordination with Solano County prior to establishing conservation easements in Solano County that would count toward the Yolo HCP/NCCP conservation strategy.)

The following local agencies and foundations have committed to provide funding that will support the Yolo HCP/NCCP or conduct activities that offset the costs described in Section 8.2, *Cost to Implement the Yolo HCP/NCCP*. The City Council for the City of Davis, the Yolo County Board of Supervisors, and the governing bodies of both the SCWA and the LPCCC passed resolutions in 2015 that support a partnership with the Conservancy, consistent with the Yolo HCP/NCCP. The City of Davis and the Conservancy will also enter into a memorandum of understanding to provide more

detail about the terms of the partnership. Yolo County, the SCWA, and LPCCC may also decide to enter into similar agreements with the Conservancy.

The Conservancy may identify and use other funding sources during Plan implementation. There may be future ballot measures, for example, that include a funding component for specific elements of the Yolo HCP/NCCP's implementation. The Yolo HCP/NCCP assumes a modest amount of funding from these other sources over the 50-year permit term, as described in Section 8.4.4, *Other Local, State and Federal Sources*. The participating agencies, however, are not expected or required to utilize local general funds for the Yolo HCP/NCCP's implementation. Funding shortfalls, and the options available if they occur, are discussed below in Section 8.4.5, *Funding Adequacy*.

8.4.2.1 City of Davis

The citizens of Davis have long understood that the character of the community is directly connected to lands within which the community resides. The City of Davis has demonstrated a long-term commitment to the protection of natural resources, sensitive habitat, and agricultural lands in and surrounding the community for the past several decades. By 2000, the City had protected more than 2,400 acres of open space lands, in both fee title ownership and easements. These achievements relied on sporadic funding from grant funds and environmental mitigation, however.

To provide a stable source of funding for open space protection, the City Council passed Ordinance 2033 in 2000, establishing a parcel tax to fund the Open Space Protection Special Tax Fund. This ordinance was approved as Measure O in November 2000. Section 15.16.070 of Ordinance 2033 describes eligible types of expenditures for the parcel tax, including "acquisition in fee or easement of open space lands within the Davis Planning Area." By itself, Measure O does not generate enough money to purchase significant tracts of land. Its greatest value is its leveraging potential. Because it is a stable and reliable revenue source, Measure O gives the City of Davis an advantage in the competition for state and federal land acquisition grants. As a result, this fund has enabled the City to make remarkable progress toward achieving its long-term vision for land conservation in the Davis Planning Area. As of 2015, the City was able to purchase approximately $20 million worth of conservation easements, permanently protecting an additional 2,833 acres of farmland and habitat areas, using only approximately $3.3 million in Measure O funds.

The parcel tax generates approximately $635,000 annually through a flat tax per parcel. The tax rate is $24 per market-rate single-family home, with other rates depending on land use type. This annual amount has fluctuated by only one to two percent because the number of parcels and land use types changes only slightly year to year. The adopting ordinance does not allow for any adjustments to these tax rates, including any adjustments for inflation. The tax expires in 2030. Based on the high level of support the residents of Davis have exhibited for open space, it is reasonable to assume that the voters will re-authorize the parcel tax through at least to the 50-year permit term of the Yolo HCP/NCCP.

On July 7, 2015, the City Council agreed in principle to help finance the implementation of the Yolo HCP/NCCP with up to $10 million in nominal dollars (not adjusted for inflation) over 50 years, but asked staff to return to the City Council with the details of the partnership with the Conservancy. On December 15, 2015, the City Council adopted a resolution whereby the City of Davis agreed to a non-binding commitment (i.e., a goal) to spend up to $10 million in City open space acquisition dollars (not just Measure O dollars) over 50 years, if funding is available, for land acquisitions. The City will acquire and/or permanently protect habitat lands within the Davis Planning Area that are consistent with the Yolo HCP/NCCP under certain conditions, including consistency with local open space

policies and priorities. During the first 15 years, the City will make a good faith effort to spend up to $3.0 million (in nominal dollars, not adjusted for inflation) in City open space acquisition dollars before June 30, 2031, if funding is available. This will be to acquire and/or permanently protect lands within the Davis Planning Area that are consistent with the Yolo HCP/NCCP, assuming adoption of the Plan during FY 2017–18 (a 15-year period, representing 30 percent of the 50-year permit term and therefore 30 percent of the funding goal). Adoption of the Plan at a later date would adjust this interim funding objective accordingly. During the final 35 years, the City will make a good-faith effort to spend up to $7.0 million (in nominal dollars, not adjusted for inflation) in City open space acquisition dollars before June 30, 2066, if funding is available. This will be to acquire and/or permanently protect habitat lands within the Davis Planning Area that are consistent with the Yolo HCP/NCCP, assuming the City's Open Space Protection Special Tax (i.e., Measure O) is reauthorized by the voters at the same or higher rate. If voters reauthorize the tax at a lower rate, the City and the Conservancy will meet and confer to determine how future parcel tax revenues may support achieving the overall $10 million funding objective. If, at that time, the City does not anticipate that it will achieve the funding objective, then the Conservancy will have to adjust land cover fees and/or identify other revenue to replace this loss of funds.

This commitment will help ensure that the City of Davis' ongoing efforts to protect open space and other natural resources are partially focused on areas that have been identified in a community planning process as priorities for the protection of sensitive species. This commitment of funds will also allow the City to maximize revenue from other sources, utilizing the ability of the Yolo HCP/NCCP to bring additional state and federal conservation funds to Yolo County. The Conservancy, of which the City of Davis is a member, will administer the Yolo HCP/NCCP and propose potential easements or other conservation projects to the City consistent with the City's open space policies and priorities. City open space funding will only be used to support achievement of the conservation portion of the Yolo HCP/NCCP that is beyond mitigation, and will not be used to mitigate the effects of activities covered under the Yolo HCP/NCCP. The City may, at any time, decline to partner with the Yolo HCP/NCCP or decide not to invest in land acquisition or other projects proposed by the Conservancy. The City recognizes that a partnership with the Conservancy has the potential to help fulfill the City's open space priorities as well as contribute to the conservation of important habitat.

Consistent with implementation of the Open Space Program to date, funding to offset the Yolo HCP/NCCP's costs would be primarily for the acquisition of conservation easements, associated City staff time to support the acquisition program, and related transaction costs. The Davis City Council adopted an acquisition priorities map in January 2004; the City updated the map in 2007.[19] Many of the priority areas include lands that would be eligible for inclusion in the Yolo HCP/NCCP's reserve system. Funding outside the Open Space Program used by the City of Davis for habitat restoration or enhancement activities may also offset the Yolo HCP/NCCP's costs.

8.4.2.2 Cache Creek Resources Management Plan

The County of Yolo adopted the CCRMP in 1996 and amended it in 2002. The CCRMP is part of the Cache Creek Area Plan (CCAP), a focused planning policy document that is part of the Yolo County General Plan. The CCRMP eliminated in-channel commercial mining (i.e., mining inside of the Cache Creek channel) and established a program for implementing ongoing projects to improve channel

[19] City of Davis Open Space and Habitat Commission. 2013. *City of Davis Measure O, the Open Space Protection Special Tax Fund: Progress in Protecting Open Space (draft)*. December 2. Figure 5, page 29.

stability and restore riparian habitat along Cache Creek. The CCRMP provides a policy framework for restoration of 14.5 miles of lower Cache Creek and includes specific implementation standards. The Cache Creek Improvement Program (CCIP), the implementation plan for the CCRMP, identifies specific categories of projects, including bank stabilization, channel maintenance, revegetation, and habitat restoration. The CCRMP is implemented with the assistance of a Technical Advisory Committee (TAC), which is composed of scientists with expertise in geomorphology, biology, and hydraulic engineering. See Section 6.5.8.1.1, *Cache Creek Resources Management Plan*, for a more detailed description of how activities that are funded by the program would support achievement of the Yolo HCP/NCCP's goals and objectives.

The CCAP is funded by a specified share of the total revenue from a fee applied per ton of gravel (aggregate) extracted from Cache Creek in the Yolo County unincorporated area. The fee for calendar year 2017 is $0.550 per ton, increasing by 4 percent annually per the county's Gravel Mining Fee Ordinance.[20] For long-range budget planning, the county uses the 16-year average annual level of extraction through 2012 of 3,250,000 tons.[21] The Gravel Mining Fee Ordinance allocates 55.56 percent to the CCRMP, or approximately $993,000 in 2017 dollars (3,250,000 x $0.550 x 55.56 percent). Based on an analysis of CCAP activities that support the Plan's objectives (Section 6.5.8, *Conservation and Monitoring and Adaptive Management Actions Conducted by Local Partners*), the Yolo HCP/NCCP assumes that $221,663 of this funding on average (about 22 percent) would offset the Yolo HCP/NCCP's costs. This funding would total $11.1 million in 2017 dollars (Appendix I, Table 9).

Based on Yolo County Board of Supervisors Resolution No. 14-126, approved on December 2, 2014, Yolo County intends to place easements on between 250 and 660 acres of "net gains" or other lands within the CCAP area, consistent with the Yolo HCP/NCCP, as long as: 1) the easements are also consistent with the CCAP and future Cache Creek Parkway Plan development, 2) the Yolo HCP/NCCP pays for transaction costs associated with placement of the easements (not for the value of the easements), and 3) the Yolo HCP/NCCP pays for habitat related maintenance of these properties in perpetuity. This Plan assumes the county will provide 276 acres of easements as a result of this commitment. The County of Yolo may also contribute CCAP funding toward acquisition of conservation easements, if funding is available and the acquisition is consistent with the policies and objectives described in the CCAP program documents. The County of Yolo intends to continue to implement activities prescribed in the CCIP (e.g., monitoring and invasive species removal) that are funded with CCAP revenue and consistent with the Yolo HCP/NCCP. The county may at any time decline to partner with the Conservancy or decide not to provide easements or dedicate revenue to activities, consistent with the Yolo HCP/NCCP. The Conservancy will work with the county to bring in revenue for Cache Creek Resources Management Plan and CCIP implementation that would not otherwise be available to the county.

The CCAP also will result in approximately 865 acres of land that is utilized for off-channel mining operations to be reclaimed to agricultural lands and have agricultural easements placed on them. The Conservancy and county will work with the aggregate companies that own the land to add an additional layer of protection for covered species habitat on these reclaimed lands. This is a voluntary process; therefore, the gravel companies must agree to add this protection for habitat. In return, the gravel companies would receive a per-acre incentive payment from the Conservancy. The Conservancy would be responsible for all associated costs of securing the endowment to enroll these lands in the

[20] Yolo County Code, Chapter 8, Title 11.

[21] Cache Creek Technical Advisory Committee. 2014. *2013 Cache Creek Annual Status Report*. January 14. Pages 43–44.

reserve system. The Conservancy would ensure that the initial agricultural easements would be consistent with the Yolo HCP/NCCP to the extent feasible. The Conservancy would further work with the county and the gravel companies to add the additional layer of protection for habitat based on the Yolo HCP/NCCP-approved conservation easement template and associated management plan template. This effort will benefit the Yolo HCP/NCCP by conserving lands along the Cache Creek corridor for habitat, a priority conservation area of the reserve system. Additionally, this incentive program is expected to provide a cost savings for the Yolo HCP/NCCP by providing an opportunity to enroll lands through conservation easements at a reduced cost. Aggregate companies will benefit from receiving the per-acre incentive payment that would not otherwise have been available to them.

The Gravel Mining Fee Ordinance sunsets on January 1, 2027. Based on confirmed aggregate reserves in the area and interest expressed by current mining enterprises to extend their permits beyond 2026, it is reasonable to assume that the county will extend mining permits and re-authorize the Gravel Mining Fee Ordinance through at least to the 50-year permit term of the Yolo HCP/NCCP.

In addition to the CCRMP share of 55.56 percent, CCAP revenue is allocated, as follows:

- 22.22 percent to the Cache Creek Conservancy (CCC), an independent nonprofit organization, for purposes of habitat restoration and enhancement along Cache Creek and revegetation projects consistent with CCRMP creek stabilization objectives;
- 17.78 percent to the Off-Channel Mining Plan (OCMP) to administer the mining permits and development agreements and inspect mining and reclamation operations; and
- 4.44 percent to the Maintenance and Remediation Fund (MRF), which will be placed in an interest-bearing account and not accessed until 2027—and then only for the purposes of environmental remediation and monitoring and maintenance of public lakes in the CCAP.

Current activities funded by the CCAP and conducted by the CCC, as well as future activities funded by the MRF after 2027, could support the goals and objectives of the Yolo HCP/NCCP. However, there is a limit to the overlap between CCAP activities and the Yolo HCP/NCCP's implementation costs; therefore, as a conservative assumption, the Yolo HCP/NCCP does not apply any funding from these activities against the costs of the Plan.

8.4.2.3 Solano County Water Agency/Lower Putah Creek Coordinating Committee

The LPCCC was created through a settlement to resolve a civil action brought by the Putah Creek Council, a nonprofit environmental organization, against the SCWA and the Solano Irrigation District (Settlement).[22] The LPCCC is composed of representatives of the Putah Creek Council; several water districts, including the SCWA; several cities, including the City of Davis; and the campus of the University of California, Davis. The Settlement requires annual expenditures by the SCWA for specified activities to protect and enhance the in-stream values associated with lower Putah Creek, including funding for a streamkeeper position. The LPCCC has a number of duties, including monitoring conditions in lower Putah Creek; conducting restoration, enhancement, and maintenance measures; seeking grant funds; and overseeing the streamkeeper. See Section 6.5.8.1.2, *Lower Putah Creek Coordinating Committee*, for a more detailed description of how activities funded by the SCWA and implemented by the LPCCC would support achievement of the Yolo HCP/NCCP's

[22] *Putah Creek Council v. Solano Irrigation District and Solano County Water Agency*, Sacramento County Superior Court No. 515766, Second Amended Judgment, October 30, 2002.

goals and objectives. On February 12, 2015, the SCWA took action (Action Item No. 2015-10) to approve a partnership with the Conservancy to work toward mutually beneficial goals. The LPCCC unanimously recommended this action to the SCWA on January 8, 2015.

The SCWA spends about $210,000 annually to implement the Settlement's provisions related to restoration along lower Putah Creek. This amount is based on $160,000 of expenditures, as specified in the Settlement, inflated to current levels according to an inflation index, also specified in the Settlement. In addition to this required funding, the SCWA currently provides $22,000 of miscellaneous funding for vehicle fuel and other small expenses. The $210,000 amount does not include in-kind services provided by the SCWA, such as grants management and project engineering. Between 2001 and 2013, the SCWA has leveraged approximately $12 million in grant funding to support restoration along lower Putah Creek, or about $1 million annually.

The components of the SCWA annual commitment of $160,000 are stated in Section III(A)(6) of the Settlement:

- $10,000 per year for native vegetation preservation and enhancement, including the identification of areas along lower Putah Creek that are dominated by nonnative species and their removal and replacement with native trees and grasses. This work will be coordinated with efforts by individuals and entities that are involved in similar removal and replacement efforts;
- $55,000 per year for the monitoring of wildlife, including birds, mammals, reptiles, and amphibians that live in and around lower Putah Creek;
- $55,000 per year for the monitoring of native fish in lower Putah Creek; and
- $40,000 per year for a streamkeeper for lower Putah Creek.

This section of the Settlement also allows "funding, if any, to be determined by the SCWA for acquisition of easements from willing sellers for the maintenance and enhancement of the biological resources of lower Putah Creek." The SCWA does not anticipate any acquisitions under the Settlement.

For purposes of projecting future grant funding and the related level of conservation activities, the Conservancy suggests 50 percent of the historical amount, or $500,000, annually. Any such grant funding would count toward the state and federal commitment to the Yolo HCP/NCCP.

The Yolo HCP/NCCP assumes that approximately $209,000 (2017 dollars) in annual direct spending, as overseen by the LPCCC, would offset costs of the Plan. The Yolo HCP/NCCP assumes that this share of total SCWA funding would remain constant over the permit term when adjusted for inflation, as mandated by the Settlement. Total funding for the Yolo HCP/NCCP would be $10.4 million (Table 8-6, *Funding Plan*, and Appendix I, Table 9).

8.4.2.4 Foundations and Other Non-profit Organizations

Private foundations and non-profit organizations that support open space acquisition and biodiversity planning are expected to play an important role in supporting the Yolo HCP/NCCP. Foundations such as the Packard Foundation and organizations such as the National Audubon Society (California Chapter) have a history of supporting land conservation in Yolo County and are supportive of regional conservation planning in general. Combined private charitable expenditures on open space acquisition and biodiversity planning are estimated to have totaled $20 million to $25

million from about 2000 through 2013, or about $1.5 million to $2 million per year. This rate of funding is difficult to project over the long term, however, given the ability of these organizations to shift priorities. To be conservative, the Yolo HCP/NCCP assumes private charitable funding will provide an average of $200,000 per year in 2017 dollars, or $10 million over the permit term (again in 2017 dollars), to offsets Plan costs (Table 8-6, *Funding Plan*).

8.4.2.5 Interest Income

A small source of income to the Conservancy will come from interest and other earnings on fund balances generated by land cover fee revenues held prior to expenditure. The Conservancy expects a large amount of interest income from earnings on the endowment prior to the end of the permit term. The interest estimate for fee revenues held prior to expenditure assumes that the Yolo HCP/NCCP's fund balances will earn an average annual interest rate of 1.01 percent, the most-recent 10-year average rate on the Local Agency Investment Fund, a pooled money fund managed by the California State Treasurer. The Conservancy is estimated to have about half of the annual average HCP/NCCP fee revenue on hand at any one time, or about $2.5 million. This would generate an annual average of $26,000 in interest income, leading to a 50-year estimate of interest earnings of $1,300,000 (2017 dollars) (see Table 11 in Appendix I, *Funding Plan*). The Yolo HCP/NCCP assumes no interest generated from grant funds because of the typical requirement to spend grants immediately.

The assumed net rate of earnings on the HCP/NCCP endowment that would fund post-permit costs is estimated at 3.25 percent, as discussed in Section 8.3.8, *Costs in Perpetuity*. The rate of return for the endowment is higher than on operating fund balances because the endowment has the flexibility provided by a long-term investment horizon to invest in a wide range of investment vehicles at levels of risk and return that are appropriate for a fund that is managed in perpetuity. With a constant level of annual contributions, the endowment is estimated to generate $8.1 million (2017 dollars) over the permit term (Table 8-6, *Funding Plan,* and Table 3 in Appendix I, *Funding Plan*).

8.4.3 State and Federal Funding

The U.S. Congress and the California Legislature have determined that conserving species and their natural habitats is an issue of both national and state importance. The federal and state governments will strive to assist local governments and property owners to assemble, manage, and monitor the Yolo HCP/NCCP's reserve system. This assistance would provide for the conservation of covered species in the Plan Area, and reduce or avoid the need to list additional species as threatened or endangered.

Federal contributions to the Yolo HCP/NCCP are earmarked only for the portion of the Yolo HCP/NCCP that provides for the conservation of covered species in the Plan Area. Federal contributions cannot be used for the mitigation component of the Yolo HCP/NCCP.

State and federal funding is estimated to provide over $72.5 million to the Yolo HCP/NCCP in 2017 dollars (Table 8-6, *Funding Plan*) for up to 8,231 acres of land acquisition and 44 acres of restoration/creation of wetlands (see Table 10, Appendix I). If the Conservancy obtained maximum funding from the federal and state government, it would contribute up to 8,231 acres of land to the

reserve system (Table 6-1(b)) at an average cost of $8,467 per acre (Table 10, Appendix I) and 44 acres of restored/created conservation lands at a cost of $2.9 million (Table 10, Appendix I). The Conservancy based the estimate of state and federal funding on current sources, which are generally limited to land acquisition and wetland restoration/creation costs. Land acquisition costs paid for by state and federal funds can include pre-acquisition surveys and transaction costs. State and federal funding may also be able to pay for acquisition costs of pre-permit reserve lands, however, the funding estimate above assumes no state or federal funding for this purpose. As state and federal funding sources evolve over the 50-year permit term, the Conservancy expects funding sources to become more flexible in terms of the types of costs they can cover. For the time being, the Conservancy likely will incur the costs of administering, managing, and monitoring lands provided through state or federal funding, including endowment contributions.

State or federal funding for land acquisition could come from a variety of sources, including several sources administered by CDFW and USFWS (Table 8-11, *Likely Federal and State Funding Sources for HCPs and NCCPs in California*). Land contributions by USFWS and CDFW could be provided through contributions by the Wildlife Conservation Board. The Conservancy will assess progress toward the land acquisition and wetland restoration/creation goals stated in the prior paragraph every year and include a summary in the annual report submitted to CDFW and USFWS.

As stated above, the state and federal governments will strive to offer as many funding opportunities to this Plan as is possible. The record of state and federal funding for approved HCP/NCCPs in California suggests state and federal government will contribute the estimated funding. An analysis of the likelihood of the Yolo HCP/NCCP receiving available state and federal funds during the first 10 years of Plan implementation is provided in Appendix J, *State and Federal Funding Analysis*. This analysis concludes that, because of the competitive nature of this Plan and the available sources and history of funding, meeting the needs of the Plan from state and federal funding in the first 10 years is feasible. New funding sources are expected to arise, increasing the likelihood of achieving this goal even further. If, however, after the exercise of all available authority and utilization of all available resources, the CDFW and USFWS are unable to provide the estimated funding to the Yolo HCP/NCCP, the Conservancy, the Permittees, CDFW, and USFWS will re-evaluate the Yolo HCP/NCCP and work together to develop a mutually acceptable solution.

Implementation of the Yolo HCP/NCCP is subject to the federal Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Plan will require the obligation, appropriation, or expenditure of any money from the United States Treasury. USFWS will not be required to expend any federal agency's appropriated funds until an authorized official of that agency commits these funds in writing. Similarly, CDFW will not be required to expend any state agency's appropriated funds until an authorized official of that agency commits these funds in writing. The state and federal agencies will use their best effort to contribute the amount of land identified below.

Table 8-11. Likely Federal and State Funding Sources for HCPs and NCCPs in California

Program Name	Program Administrator	Funding Source	Funding Available in California	Year	Description	Eligibility	HCP/NCCP Potential
Endangered Species Act Cooperative Endangered Species (Section 6) Grants	U.S. Fish and Wildlife Service, California Department of Fish and Wildlife	Federal	$2,000,000 annual award cap per plan	2002–present (cap began 2014)	Grants for HCP land acquisition; current USFWS policy requires non-federal match of 25%.	Approved HCPs (see text for details)	Strong
				2001–present	Grants for recovery land acquisition; current USFWS policy requires non-federal match of 25%.	Draft and approved recovery plan for endangered or threatened species	
Land and Water Conservation Fund[a]	U.S. Fish and Wildlife Service, California Department of Parks and Recreation	Federal	$2,300,000 maximum grant request	1964–present	Dollar-for-dollar matching grants for planning, acquisition, and development of outdoor recreation areas and facilities.	Cities, counties, and districts with authority to acquire, develop, operate, and maintain public park and recreation areas	Moderate
North American Wetlands Conservation Act Grant Program[c]	U.S. Fish and Wildlife Service	Federal	$21.9 million awarded nationwide in 2017	1996–present	Program provides matching grants to aid wetland conservation projects, including land acquisition, restoration, and enhancement. Non-federal match must be at least 1:1.	Non-federal agencies, organizations, or individuals	Uncertain

Program Name	Program Administrator	Funding Source	Funding Available in California	Year	Description	Eligibility	HCP/NCCP Potential
Central Valley Project Improvement Act Habitat Restoration Program	U.S. Fish and Wildlife Service and U.S. Bureau of Reclamation	Federal	$3,200,000	2015	Provides funds for land acquisition, management, monitoring, research, and restoration for endangered/ threatened species affected by the CVP.	Federal and state government agencies, private non-profit or profit organizations, and individuals	Strong
Watershed Restoration and Delta Water Quality and Ecosystem Restoration Program[d]	California Department of Fish and Wildlife	State, Proposition 1	$372,500,000 over the life of the proposition	Expected 2015–2025	Provides $285 million for ecosystem restoration projects outside the Sacramento-San Joaquin Delta and $87.5 million for projects that benefit the Delta.	Public agencies, nonprofit organizations, public utilities, federally recognized Indian tribes, state Indian tribes listed on the Native American Heritage Commission's California Tribal Consultation List, and mutual water companies engaged in either watershed restoration projects of statewide importance outside the Delta or projects benefiting water quality, ecosystem restoration, and fish protection in the Delta	Strong

Program Name	Program Administrator	Funding Source	Funding Available in California	Year	Description	Eligibility	HCP/NCCP Potential
Water Quality, Supply, and Infrastructure Improvement Act of 2014	Wildlife Conservation Board	State, Proposition 1	$5,000,000	2015–present		Approved NCCPs in the Delta	Strong
Oak Woodlands Conservation Act of 2001 and Rangelands, Grazing Land, and Grassland Protection Program	Wildlife Conservation Board		$5,000,000		Grants for purchase of oak woodland easements, restoration or enhancement projects, long-term leases, or cost-sharing incentive payments.	Approved Oak Woodlands Management Plan	Moderate
Habitat Conservation Fund[e]	California Department of Parks and Recreation	State, Other[f]	$2,000,000 annually	1990–present	Program requires 50% match from grantees for nature interpretation programs that bring urban residents into park and wildlife areas, protection of various plant and animal species, and acquisition and development of wildlife corridors and trails.	Cities, counties, and districts	Moderate

Program Name	Program Administrator	Funding Source	Funding Available in California	Year	Description	Eligibility	HCP/NCCP Potential
Sustainable Agricultural Lands Conservation Program	California Strategic Growth Council	State, Other[g]	Up to $100,000,000 in FY 2014–15 for sustainable agricultural land strategy planning efforts; up to $4,000,000 in FY 2014–15 for grants for agricultural conservation easement acquisition		Supports the protection and management of California's agricultural lands with the goal of preventing increases in greenhouse gas (GHG) emissions by limiting opportunities for expansive, vehicle-dependent forms of development. The program accomplishes this through three major elements (sustainable agricultural land strategy plans, agricultural conservation easements, and financial incentives for adoption and use of land management practices), which emphasize planning, the permanent protection of farm and ranch lands through agricultural easements, and support for agricultural programs that reduce GHG emissions.	**Sustainable Agricultural Land Strategy Plans** – Counties and/or cities in collaboration with other partners that will inventory and evaluate agricultural lands and develop local strategies for long-term protection **Agricultural Conservation Easements** – Cities, counties, nonprofit organizations, resource conservation districts, regional park or open space districts, or regional park or open space authorities that have conservation of farmland among their stated purposes, as prescribed by statute or as expressed in the entity's locally adopted policies	Moderate

Notes:

a. California Department of Parks and Recreation 2014a.
b. Natural Resources Conservation Service 2014.
c. U.S. Fish and Wildlife Service 2017.
d. Water Quality, Supply, and Infrastructure Improvement Act of 2014.
e. California Department of Parks and Recreation 2014b.
f. Established by the California Wildlife Protection Act of 1990, Proposition 117.
g. Appropriations from the Budget Act of 2014 to the Greenhouse Gas Reduction Fund.

8.4.3.1 Federal Funding Sources

As described above and in Table 8-11, *Likely Federal and State Funding Sources for HCPs and NCCPs in California*, there are a variety of existing federal sources that could help to fund the conservation component of the Yolo HCP/NCCP. The federal source that is likely to provide one of the largest state and federal shares of funding for the Yolo HCP/NCCP is the USFWS's Cooperative Endangered Species Conservation Fund, authorized under Section 6 of the FESA. USFWS annually provides significant funds to local jurisdictions that develop and implement regional HCPs. The Section 6 grant program is divided into three funding categories: HCP Assistance (for planning), HCP Land Acquisition, and Recovery Land Acquisition Grants. CDFW applies for and administers these grants. The Yolo HCP/NCCP has already received six grants from the HCP Assistance Program, totaling more than $3.8 million. Once the FESA permit is issued, the Yolo HCP/NCCP will be eligible for HCP Land Acquisition grants.

HCP Land Acquisition grants can pay for land acquisition (conservation easement or fee title), transaction costs, and pre-acquisition surveys and inventories. These grants can also pay for management or monitoring costs after acquisition as long as those funds represent a minority of the cost of the project and they are spent within the three-year term of the grant award. It is possible these spending limitations could change during the 50-year permit term, in which case this funding source might be used to pay for more types of HCP/NCCP costs than those related strictly to land acquisition (or initial management or monitoring).

From 2002 to 2016, USFWS has made available, on average, $34.9 million per year in land acquisition funds nationally. Of this, an average of approximately 45 percent—nearly $20 million—was dedicated annually for land acquisition for HCPs and NCCPs in California. From 2002-2016, California has received more than $241 million in land acquisition funding for approved HCPs and NCCPs, by far the largest share of any state. Funding for the HCP Land Acquisition program has declined substantially since 2010. It appears to have stabilized at about $15 million every year since 2012, although competition for grants has increased as the federal government approves more regional HCPs. In FY 2014, USFWS instituted a cap on individual awards of $2.0 million, which has continued. It is unknown whether this funding cap will remain or if total funding amounts will change. This program has been in existence since 2002, however, and it remains the most important source of regional HCP land acquisition funding from the federal government. The program is assumed to continue and provide funding for the Yolo HCP/NCCP.

Other existing federal grant programs that could provide additional funding to the Yolo HCP/NCCP, particularly for wetland restoration, are the North American Wetlands Conservation Act Grant Program and the Central Valley Project Improvement Act Habitat Restoration Program (see Table 8-11). The Yolo HCP/NCCP also assumes additional funding over the 50-year permit term from new local, state, and federal sources not currently identified, as described in Section 8.4.4, *Other Local, State and Federal Sources*.

8.4.3.2 State Funding Sources

As described in Table 8-11, *Likely Federal and State Funding Sources for HCPs and NCCPs in California,* there are a variety of sources available for state funding, including existing California propositions (e.g., Proposition 1, passed by voters in 2014). Proposition funding for the Yolo HCP/NCCP can come from a variety of sources, including the Wildlife Conservation Board and the

California Department of Parks and Recreation. More state bond measures for open space preservation and management are expected to be issued as California propositions during the 50-year term of the Yolo HCP/NCCP. For example, Proposition 84 was passed by California voters in the November 2006 General Election by a margin of 53.7 percent. This bond provided funding for water, park, and natural projects, including $90 million for certain NCCPs. Additional open space bonds that provide funding for which HCP/NCCPs are eligible are expected to be placed on the statewide ballot several times during the 50-year permit term. A parks and open space bond is on the June 2018 ballot[23] that would provide $52 million for land acquisition to support approved NCCPs throughout California, administered by the Wildlife Conservation Board. Other existing state funding sources may include the Sustainable Agricultural Lands Conservation Program described in Table 8-11, *Likely Federal and State Funding Sources for HCPs and NCCPs in California*. The Yolo HCP/NCCP also assumes additional funding over the 50-year permit term from new local, state, and federal sources not currently identified, as described in Section 8.4.4, *Other Local, State and Federal Sources*.

8.4.3.3 Mitigation and Conservation Components

As discussed in Chapter 1, *Introduction,* NCCPs are required to provide for the conservation of covered species in the Plan Area. To achieve this standard, this conservation strategy exceeds typical project mitigation requirements. Although the Yolo HCP/NCCP provides a single conservation strategy to mitigate effects and provide for the conservation of covered species in the Plan Area, it is important to delineate the mitigation obligations of the Yolo HCP/NCCP from the conservation components because USFWS and CDFW can fund only land acquisition for the conservation component of the Yolo HCP/NCCP (i.e., they cannot subsidize mitigation). It is also important for purposes of demonstrating plan compliance with CEQA and with the state Mitigation Fee Act.

As described above, the Conservancy determined the land cover fee, in part, on the basis of mitigation requirements without the Yolo HCP/NCCP. The Conservancy estimated mitigation ratios for each land cover type that are reasonably applicable at a regional scale in the context of the Yolo HCP/NCCP to offset effects on habitat for the covered species. Based on these ratios, the overall mitigation component of the Yolo HCP/NCCP is estimated at approximately 17,016 acres of the total reserve system (see Table 1 in Appendix I); this includes the related share of all costs for management, monitoring, endowment, and plan administration, and a portion of the conservation components of the Plan described as NCCP benefits in Section 8.4.1.2, *Land Cover Fee*.

This analysis is provided to help delineate eligibility for state and federal grant funding for the conservation portion of the Yolo HCP/NCCP. The calculation above cannot be applied as a project mitigation ratio on a specific site because it was based on the substantial economies of scale provided by the Yolo HCP/NCCP (e.g., preserving large blocks of land that support many covered species). In addition, project mitigation ratios are typically based on the results of site-specific surveys and the likely presence of listed species. In contrast, the Yolo HCP/NCCP covers listed and non-listed species as well as occupied and unoccupied habitat. The Plan therefore provides substantially more regulatory assurances to Plan participants than are available on a project-by-project basis. For these reasons, it is inappropriate to compare the calculation above to a project mitigation ratio.

[23] State Senate Bill (SB) 5, The California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018. If passed, the total funding provided by SB 5 would be $4.0 billion.

The Yolo HCP/NCCP is a single plan that must be implemented as a whole. Permits will be issued on the basis of implementation of the entire Plan. The HCP/NCCP fees will cover the responsibilities and requirements of the Conservancy and Permittees to both mitigate their effects and help provide for the conservation of the covered species in the Plan Area. State and federal contributions; continuing local, state, and federal conservation efforts; and funding from private competitive grants can contribute to the conservation component of the Yolo HCP/NCCP.

8.4.4 Other Local, State and Federal Sources

The funding category *Other Local, State & Federal Sources* in Table 8-6 includes a modest assumption of $18.3 million of future funding from new local, state, or federal funding sources. The Conservancy makes no assumption regarding the share of this future funding from new local, state, or federal sources.

The local funding estimates described in previous sections are based on information about local funding sources available in 2018. During the 50-year term of the Yolo HCP/NCCP permit, local agencies are expected to generate new local sources of funding through a variety of mechanisms such as donations of land, surcharges on Special Participation Entities, or future open space taxes and fees. Although not expected to be substantial, these future new local funding sources could contribute to the conservation costs of the Yolo HCP/NCCP.

Like local sources, the Conservancy expects additional state and federal funding sources to arise during the 50-year term of the permit which could help to fund a variety of HCP/NCCP costs. New federal and state grant programs are expected to be created during the permit term that would add to the federal and state funding of the Yolo HCP/NCCP. These new grant programs may also be more flexible than existing federal or state grants in terms of what types of HCP/NCCP costs they can cover.

8.4.5 Funding Adequacy

The Conservancy conservatively estimated the funding sources described in this chapter. That is, actual funding from local, state, and federal sources may exceed these projections. For example, foundations that were not identified in this chapter may contribute more funds to the Plan than estimated. Alternatively, additional revenue may be secured from fees on Special Participating Entities. Temporary effect fees may also exceed projections if applicants choose to pay the HCP/NCCP fee in full rather than try to estimate the frequency of their activities during the permit term (thus resulting in greater up-front payments, which will also build the endowment faster). Despite these conservative assumptions and additional revenue sources, revenue may fall short of costs. This section further discusses the adequacy of the Yolo HCP/NCCP's funding in the event of funding shortfalls.

8.4.5.1 Additional Funds Needed for Management or Monitoring

The Conservancy will adjust HCP/NCCP fees annually to keep pace with increases in management and monitoring costs due to inflation (see Section 8.4.1.6, *Adjustment of HCP/NCCP Fees*). Every five years, the Conservancy will conduct a funding assessment to determine actual implementation costs. The purpose of this assessment will be to ensure that the annual adjustments have been adequate and that revenues track actual costs. If actual costs are found to be higher than the revenue provided by the HCP/NCCP fees, the Executive Director will ask the

Conservancy Board to increase the HCP/NCCP fee to compensate. These mechanisms are intended to ensure that reserve system management and monitoring costs will be paid for throughout Plan implementation.

A final safeguard is the contingency associated with management and monitoring costs (see Sections 8.3.3, *Manage and Enhance Easement and Pre-Permit Reserve Lands,* and 8.3.4, *Monitoring, Research, and Scientific Review*). The contingency fund is intended primarily to offset land management or monitoring costs that are higher than predicted by the Yolo HCP/NCCP on a short-term basis. If this fund is inadequate with respect to offsetting these costs, or if costs are predicted to exceed revenue on a long-term basis, then the Conservancy will consider whether to adjust management and monitoring requirements, without jeopardizing the Yolo HCP/NCCP's conservation requirements, or raise revenue from HCP/NCCP fees or other sources to offset the funding shortfall. When feasible, the Conservancy will make reasonable adjustments to revenue to meet the obligations of the Yolo HCP/NCCP. Some changes may require a minor or major amendment to the Yolo HCP/NCCP. See Chapter 7, *Plan Implementation,* for rules regarding changes to the Yolo HCP/NCCP.

8.4.5.2 Actions Required If Land Acquisitions Lag Behind Effects

The NCCPA requires that conservation keep pace with development in "rough proportionality." The stay-ahead provision of the Yolo HCP/NCCP (see Chapter 7, *Plan Implementation*) is intended to ensure that land acquisition and enhancement, restoration, and creation (i.e., both mitigation and conservation) keep pace with the loss of natural communities and covered species habitat. Meeting this requirement, however, depends on the steady acquisition of land from willing sellers.

The nature of land acquisition is such that assembly of the reserve system is not likely to be accomplished in a constant or predictable fashion. It is expected that large land acquisitions (500 acres or more) will be an important part of the total reserve system. Acquisition of large parcels (or combinations of parcels) is typically more complex and may take longer to accomplish than acquisition of small parcels. Therefore, many additions to the reserve system are expected to be episodic. As a result, the Conservancy may fall behind for short periods of time while the Conservancy negotiates and processes large land acquisition deals. Over the long term, large land acquisitions will save money because of their typically lower price per acre and lower per-acre land transaction costs.

The Conservancy will be responsible for performing the conservation actions necessary to comply with the stay-ahead provision, as described in Chapter 7, *Plan Implementation*. If the Conservancy determines it is at risk of non-compliance with the stay-ahead provision for land acquisition (e.g., more than 10 percent deviation from the requirements without reasonable land acquisitions being under way), the Conservancy may, after conferring with wildlife agencies, notify the other Permittees that it is necessary to temporarily require project proponents to provide land instead of paying a fee. If the Conservancy determines that it is at risk of non-compliance with the stay-ahead provision for other components of the conservation strategy besides land acquisition (e.g., habitat restoration), the Conservancy will confer with the wildlife agencies to determine the best course of action. Any requirements determined jointly by the Conservancy and the wildlife agencies to be necessary to return the Plan to compliance with the stay-ahead provision will be lifted as soon as the Conservancy demonstrates in writing to the reasonable satisfaction of the wildlife agencies that the Plan is in compliance with the stay-ahead provision.

8.4.5.3 Actions Required Should HCP/NCCP Fee Funding Fall Short of Expectations

This section describes the funding expected from HCP/NCCP fees from the implementation of covered activities by public agencies (the Permittees) and private developers. These estimates are based on long-term projections of development based on historic patterns and the approved planning documents of local jurisdictions.

The Conservancy estimated the revenue expected from public and private covered activities conservatively so as not to overestimate potential revenue sources. Despite these assumptions, however, the amount of covered activities and the revenue they generate could fall short of projections. If HCP/NCCP fees fall short of expectations, some elements of the Plan could be deferred, such as restoration that is linked to effects. Other elements of the Plan must continue regardless of the pace of HCP/NCCP fees, such as reserve management and monitoring and program administration. HCP/NCCP fees are essential to cover the costs of ongoing management and monitoring because many public funding sources cannot be used for such activities.

Revenue from non-fee funding sources could offset the shortfall in fee funding in the short term, especially for land acquisition. In the short term, if fee funding cannot keep pace with the operations and management needs of the reserve system, the Conservancy will consider the following options in consultation with the wildlife agencies:

- Continue to acquire land from willing sellers for the reserve system to take advantage of lower land costs but deferral of non-essential management and monitoring of these lands for up to five years or when HCP/NCCP fee revenue is adequate, whichever comes first (see below for additional details on this option);
- Identify new funding sources to cover the cost of operation and maintenance of the reserve system until fee revenue increases to offset these costs over the long term;
- With approval from the wildlife agencies, defer implementation tasks that are not critical for compliance with the Permits, Implementing Agreement, and the Plan; and
- Consider other options that meet the biological goals and objectives of the Yolo HCP/NCCP and are consistent with the Permits, Implementing Agreement, and the Yolo HCP/NCCP.

As described in Chapter 6, *Conservation Strategy,* if HCP/NCCP fee funding falls short of expectations but the reserve system is expanding as fast or faster than it should to meet or exceed the Stay-Ahead Provision, the Conservancy may defer most management of these lands until HCP/NCCP fee funding (or other sources) is available. Specifically, if needed, the Conservancy may limit management to essential management tasks and defer non-essential management tasks for up to five years from the purchase of the first parcel of each reserve unit or until HCP/NCCP fees become available, whichever comes first. Essential management tasks are defined as those tasks that are necessary to ensure that the condition of the reserve unit does not degrade below the existing condition at the time it was incorporated into the reserve system. This standard will be measured in terms of the amount and condition of natural land cover and habitat for covered species that are known on or expected to occupy the site. Existing conditions will be documented by the Conservancy through the pre-acquisition assessment and the site inventory, described in Chapters 5 and 7. Management in response to changed circumstances is considered essential management and therefore cannot be deferred.

Over the entire permit term, fee revenue may also fall short of expectations if fewer covered activities occur than assumed under the Yolo HCP/NCCP. Although unlikely, this shortfall will make it difficult for the Permittees to meet their conservation commitment. If it appears that take authorized under the Permits will fall short of expectations, substantially reducing fee revenue, the Conservancy and other Permittees will work with the wildlife agencies to apply for extensions to the Permits to allow the full use of the authorized take and full implementation of the Yolo HCP/NCCP. As described above, local entities are not expected to, nor are they required to, utilize local general funds for the Yolo HCP/NCCP's implementation in the event of funding shortfalls of any kind.

Alternatively, if revenues fall far short of expectations and it is unlikely that the Permittees will meet their permit obligations, they may apply to reduce the authorized take and reduce the permit obligations in line with reduced revenue forecasts. Any permit term extension or request for reductions in Plan obligations will follow the requirements for a major amendment, as described in Chapter 7.

8.4.5.4 Actions Required Should Non-Fee Funding Fall Short of Expectations

This section describes the non-fee funding sources that are being committed or are expected to be provided by local, state, and federal agencies (see Sections 8.4.2, *Local Funding*, and 8.4.3, *State and Federal Funding*). These commitments and expectations are based on conservative assumptions and a track record of providing similar funding locally or to other HCPs and NCCPs in California. Despite these assumptions, it is possible that these non-fee funding sources will fall short of expectations.

In the event of shortfalls in non-fee funding, the Conservancy will make reasonable adjustments to expenditures to reduce costs while still meeting the obligations of the Plan. If these adjustments are inadequate with respect to addressing the shortfall, the Conservancy will consult with the wildlife agencies regarding the best course of action. As described above, local entities are not expected to, nor are they required to, utilize local general funds for the Yolo HCP/NCCP's implementation in the event of funding shortfalls as a result of less non-fee revenue than expected. The actions that will be considered will include reducing take authorization and conservation obligations in proportion to the funding shortfall. Such reductions will need to follow the major amendment process described in Chapter 7, *Plan Implementation*.

8.4.5.5 Funding for Post-Permit Management and Monitoring

After the permit term, all of the Permittees are obligated to continue to protect, manage, and maintain the reserve system. This includes adaptive management and monitoring at a level that is adequate for determining whether management is effective. Other obligations, however, end after the permit term. For example, the Permittees are no longer obligated to report the status of the Yolo HCP/NCCP annually to the wildlife agencies. Preservation, enhancement, restoration, and creation obligations will also be completed prior to the end of the permit term and will not continue post-permit. Remedial measures and contingencies also no longer need to be funded after the permit term because the regulatory assurances associated with these obligations end with the permit. Detailed assumptions regarding post-permit costs are presented in Section 8.3.8, *Costs in Perpetuity*. Responsibility for funding long-term management and monitoring rests solely with the Conservancy.

As described in Section 8.3.8, funding provided by interest on the endowment that will be built during the permit term is expected to fully fund post-permit costs. Any shortfalls in the endowment during the permit term will be identified by the five-year funding assessments conducted by the Conservancy. If the endowment is not growing fast enough to reach its target size, then the endowment fee portion of the HCP/NCCP fees will be increased to make up the shortfall. With these built-in safeguards in the endowment, post-permit funding is expected to be adequate to fully offset necessary post-permit costs of management and monitoring.