

CHAPTER 10. IMPLEMENTATION COSTS AND FUNDING SOURCES

10.1 INTRODUCTION

The Endangered Species Act (ESA) requires that habitat conservation plans specify “the funding that will be available to implement” actions that minimize and mitigate impacts on covered species.¹ The Natural Community Conservation Planning Act (NCCPA) requires that natural community conservation plans (NCCPs) contain “provisions that ensure adequate funding to carry out the conservation actions identified in the plan.”² In compliance with ESA and NCCPA, this chapter identifies Butte Regional Conservation Plan (BRCP) costs and the sources of funding that will be relied upon for BRCP implementation, the mechanisms that will be used to secure such funds, and the basis for the assurances provided by the Permit Applicants that adequate funding will be available to support the implementation of the Plan. To comply with the NCCPA, the BRCP Permit Applicants are committed to the implementation of the BRCP in its entirety, including actions to mitigate impacts and actions to contribute to the conservation of natural communities and covered species. The BRCP includes considerably greater conservation for covered species than is required by the federal ESA requirement for mitigation. This chapter identifies the anticipated division of sources of funding between the Permittees and federal, state, and other sources. The BRCP Permittees are committed to acquiring the funding necessary to implement the BRCP.

This chapter provides a description of the costs and sources of funding to implement the BRCP. BRCP implementation costs are separated between the “mitigation component” and the “conservation component” of the BRCP.

- **Mitigation Component of Costs:** The mitigation component of costs includes the costs to implement mitigation measures that address the impacts of BRCP covered activities (see Chapter 2, *Covered Activities*). Covered activities include implementation of city/county general plans, Butte County Association of Governments (BCAG) and California Department of Transportation (Caltrans) District 3 transportation projects, and participating water/irrigation district maintenance activities. These costs include administration, land acquisition, habitat restoration, land and habitat maintenance and management, monitoring, changed circumstances responses, endowment building, and adaptive management necessary to implement the mitigation measures.
- **Conservation Component of Costs:** The conservation component of costs includes the costs of all actions under the Conservation Strategy that are implemented to conserve natural communities and contribute to the recovery of covered species above and beyond the mitigation measures. These costs include administration, land acquisition, habitat restoration, land and habitat maintenance and management, monitoring, changed

¹ United States Code (U.S.C.) §1539(a)(2)(A).

² California Fish and Game Code § 2820(a)(10).

circumstances responses, endowment building, and adaptive management necessary to implement the mitigation measures.

Funding sources are separated between the “local share” and the “federal/state share” of plan implementation (identified in Table 10–6, *BRCP Cost and Funding Overview* in Section 10.2.1.2, *Conservation Component of Local Share Funding* as “Fee Funding”, “Other Local Funding” and “Non-Fee Funding”).

- **Local Share of Funding:** The Local Share of implementation funding sources comprises all of the mitigation component of the BRCP and a portion of the conservation component of the BRCP. The Local Share funding will be derived from impact fees assessed on individual projects as those projects are implemented in the Plan Area and additional moneys sought from various sources to fund a portion of the conservation component (see “Fee Funding” and “Other Local Funding” in Table 10–6). Local Share funding sources are detailed in Section 10.2.1, *Local Share Funding Sources*.
- **Potential Federal/State Funding:** All remaining actions to implement the conservation component of the BRCP not addressed by the Local Share (see “Non-Fee Funding” in Table 10–6) will be derived from various federal, state, and private sources. Some specific funding components will be borne only by the State of California. Potential Federal/State funding sources are detailed in Section 10.2.2, *Federal/State Funding Sources*.

The Local Share funding ensures that the effects on biological resources of the Permittees’ actions and the actions the Permittees authorize others to conduct (i.e., the covered activities) are minimized and mitigated and also ensures a contribution to conservation of natural communities and species. Funding of additional contributions to the conservation of natural communities and the recovery of covered species under the BRCP will come from a variety of sources, including local, state and federal sources. For simplicity, this funding category is referred to in the BRCP as the Federal/State Share of funding. The Federal/State Share of funding derives from sources other than fees or in-lieu lands (i.e., generally not the Permittees, project proponents, or Participating Special Entities). BCAG as the Implementing Entity is responsible for securing both the Local Share (including the collection of impact fees) and Federal/State Share funding (see Section 10.2.3, *Funding Assurances*) through various public and private funding opportunities as described in Section 10.2.1 and Section 10.2.2.

Section 10.3, *Estimate of Implementation Costs*, outlines the approach used to estimate the costs associated with implementation of the BRCP over its proposed 50-year permit duration and ongoing costs beyond the permit term. Implementation costs are estimated for each of the BRCP’s primary components, such as conservation measures, monitoring, and administration. Implementation costs are divided into the mitigation and conservation components based on the primary purpose of BRCP conservation actions, i.e., mitigation of impacts resulting from covered activities or contribution to recovery of covered species in the Plan Area. The cost estimates are used as the basis for

determining the funding needs. Details on methods used and results for implementation cost calculations are provided in Appendix F, *Implementation Cost Supporting Materials*.

10.2 FUNDING SOURCES AND ASSURANCES

10.2.1 Local Share Funding Sources

This section describes the Local Share sources of funding. Local Share funding will be used to implement the entire mitigation component of the BRCP and a portion of the contribution to the conservation of natural communities and covered species. The Local Share funding will be derived from impact fees assessed on individual projects implemented in the Plan Area as described in Section 10.2.1.1, *Mitigation Component of Local Share Funding*; additional moneys sought from various sources to fund a portion of the BRCP conservation component described in Section 10.2.1.2; and Permittee-derived funds to support shortfalls, if any, in endowment returns to support post-permit implementation activities as describe in Section 10.2.1.3, *Funding Post-Permit Land Management*.

10.2.1.1 Mitigation Component of Local Share Funding

This section describes the Local Share sources of funding to implement the mitigation component of the BRCP that will serve to mitigate the impacts of covered activities (see Chapter 2, *Covered Activities*) on covered species and natural communities. These funds will be used by BCAG to protect existing natural communities and species habitat and to restore natural communities and species habitat as mitigation for impacts on natural communities and species habitat as described in Chapter 5, *Conservation Strategy* (see Tables 5–11, *Natural Community Mitigation Requirements for Permanent Direct Effects* and 5–12, *Covered Species Mitigation Requirements for Permanent Direct Effects*). The description of the implementation costs (Section 10.3 and Appendix F) provides the details and rationale for the breakdown of BRCP Conservation Strategy component costs between mitigation and conservation components of total costs.

The funding for mitigation relies on development-based mitigation fees. As individual projects are proposed and approved in the Plan Area, public and private land developers will be required to pay a mitigation fee for land that is developed and removes natural communities and covered species habitat (e.g., to construct residential, commercial, industrial, and other structures; construct, improve, and maintain transportation infrastructure; and to install and maintain other infrastructure such as sewer and utility lines).³ Mitigation fee funds will be used to acquire lands identified for habitat protection and restoration and to implement applicable conservation measures and monitoring for the purpose of mitigation.⁴ Under the BRCP, payment of the

³ Habitat removal is defined as habitat that is physically removed (e.g., graded, paved over) or is isolated by the project from other areas of habitat such that the remaining land no longer functions as habitat for covered and other native species. The process for determining the extent of habitat that will be removed by a proposed project for the purpose of determining mitigation fees is described in Section 6.7, *Process for BRCP Implementation*.

⁴ The Implementing Entity may opt to use mitigation fees to purchase credits at an existing private or public mitigation bank rather than implementing the mitigation actions directly – for more details, see Section 6.7, *Process for BRCP Implementation*.

mitigation fees by project applicants provides for part of their compliance with the BRCP and their authorization to use the Permits.⁵ The mitigation fees do not address the cost of implementing the applicable BRCP avoidance and minimization measures (including field surveys for specific habitats, covered species, and U.S. Army Corps of Engineers [USACE] jurisdictional wetlands and waters) described in Chapter 6, *Conditions on Covered Activities*, that are the responsibility of and the costs are borne by project applicants.

The BRCP includes a “Base Mitigation Fee (Base Fee),” a “Riparian Restoration Mitigation Fee” (Riparian Fee), a “Vernal Pool Restoration Mitigation Fee” (Vernal Pool Fee), an “Emergent Wetland Restoration Mitigation Fee” (Emergent Wetland Fee), a “Butte County Meadowfoam Habitat Fee (Meadowfoam Habitat Fee),” and a “Water and Irrigation District Channel Maintenance Fee” (Water District Fee). The Base Fee is applied to all natural community and species habitat acres removed by proposed projects (see Section 10.2.1.1.3, *Calculation of Fees for Individual Projects*). The Base Fee will be used to pay for land acquisition costs, administrative costs, monitoring costs, costs for implementation of responses to changed circumstances,⁶ and endowment-building costs necessary to satisfy the mitigation requirements of the BRCP.

The Riparian, Vernal Pool, and Emergent Wetland Fees apply to the specific amounts of riparian, vernal pool, and emergent wetland removed by covered activities. The Riparian Fee, Vernal Pool Fee, and Emergent Wetland Fee cover habitat restoration implementation costs, environmental compliance costs of restoration projects, restoration establishment-stage monitoring, and costs for responses to changed circumstances related to habitat restoration. The Riparian Fee, Vernal Pool Fee, and Emergent Wetland Fee are additive to the Base Fee (i.e., charged in addition to the Base fee on the overlapping areas of land) and are applied only to projects that will remove riparian, vernal pool (and other seasonal wetlands),⁷ and emergent wetland natural communities.

The Meadowfoam Habitat Fee was developed to address impacts on Butte County meadowfoam primary habitat within the Chico Urban Permit Area (UPA). This fee is needed because land values in Chico, where the central populations of Butte County meadowfoam occur and where this fee applies, are higher than elsewhere in the Plan Area. The Meadowfoam Habitat Fee is charged in addition to the Base Fee for each acre of primary habitat directly and permanently impacted within the Chico UPA. If vernal pools or other seasonal wetlands occur within Butte County meadowfoam primary habitat to be removed, the Vernal Pool Fee must be paid in addition to the Meadowfoam Habitat Fee and the Base Fee for each acre of delineated wetland.

⁵ Note, however, that avoidance and minimization measures apply in specific circumstances and to specific species and habitat survey requirements under the BRCP.

⁶ The Base Fee addresses only changed circumstances responses that are not related to habitat restoration (e.g., changes that result in the loss of existing habitat, including already established restored habitat, protected under the BRCP). Changed circumstances responses that are related to habitat restoration are paid for through the Vernal Pool, Emergent Wetland, and Riparian Fees.

⁷ Other seasonal wetlands are jurisdictional wetlands under section 404 under the CWA that are seasonally inundated or saturated but do not support plant species indicative of vernal pools. Funding of compensatory mitigation (restoration) of other seasonal wetlands is included in the Vernal Pool Fee. Impacts on other seasonal wetlands are charged the same fee (the Vernal Pool Fee) as impacts on vernal pools.

The Water District Fee will be paid annually by the four water and irrigation district Permittees to address impacts on emergent wetland habitat in water conveyance channels that result from regular channel maintenance activities.

All mitigation fees will be set and adjusted by BCAG.

10.2.1.1.1 Determination of Mitigation Fees

The primary BRCP mitigation fee is the Base Fee. This fee covers the costs of implementing required mitigation for habitat impacts attributable to new development in the Plan Area, except for habitat restoration-related mitigation actions (i.e., riparian, vernal pools, and emergent wetland) (Table 10–1, *Mitigation Fee Calculations*). The per acre Base Fee is calculated by dividing the total estimated non-habitat restoration-related mitigation costs (less additional costs for Butte County meadowfoam habitat supplemental costs for land acquisition and water/irrigation district administrative costs) by the allowable total number of acres of habitat removed as a result of implementation of all the covered activities. The initial amount for the BRCP Base Fee per acre of impact is provided in Table 10–1. The process for adjusting this fee is described in section 8.2.1.1.6 *Mitigation Fee Adjustment Process*. The process and assumptions used to develop the Base Fee mitigation cost estimate by cost category is described in Appendix F.

Table 10–1. Mitigation Fee Calculations

Mitigation Fee	Mitigation Cost ¹	Basis Acres ³	Fee Per Impact Acre ¹
Base Fee	\$108,716,886	24,624	\$4,415
Riparian Fee ²	\$10,522,575	189	\$55,675
Vernal Pool Fee ²	\$12,997,350	306	\$42,475
Emergent Wetland Fee ²	\$5,906,250	63	\$93,750
Butte County Meadowfoam Habitat Fee ⁴	\$705,000	282	\$2,500
Water/Irrigation District Fee ⁵	\$68,958		
Total	\$138,917,020		

¹ Note that these fee calculations use mitigation cost estimates calculated to the nearest dollar from the Microsoft Excel cost model, whereas cost estimates quoted in other parts of this chapter may use numbers rounded to the nearest thousand.

² Mitigation costs for Riparian, Vernal Pool, and Emergent Wetlands are based on the cost of restoration (CM4) and the cost of environmental compliance for all restoration projects over the entire 50-year term of the BRCP.

³ Base Fee basis acres are the sum total of all acres of impacts on natural communities and agricultural habitat allowable under the BRCP (Table 4-4). Riparian Fee basis acres are the total projected acres of riparian forest and riparian scrub restoration for mitigation (190 acres). Emergent Wetlands Fee basis acres are the total projected acres of emergent wetlands restoration for mitigation (126 acres) divided by 2 (126/2 = 63) to account for 2:1 mitigation ratio requirement. The Vernal Pool Fee basis acres are the total projected acres of vernal pool restoration for mitigation (306 acres). See Table 5-11 for details on mitigation requirements.

⁴ Butte County Meadowfoam Habitat Fee applies only to Chico UPA,

⁵ Water and irrigation district covered activities include channel maintenance in approximately 39 acres of giant garter snake habitat. Fee is based on mitigation administrative costs of BCAG and the proportionality of 39 acres of impacts to the total giant garter snake mitigation habitat area (6388 acres). Fee is \$1,379 per year for the four water/irrigation districts combined (total mitigation cost of \$68,957 divided by 50 year permit term).

The habitat restoration mitigation fees will be applied in addition to the Base Fee to projects that remove riparian, vernal pool (and other seasonal wetlands), and emergent wetland natural communities and other wetlands (e.g., agricultural wetlands, managed wetlands, managed seasonal wetlands) on a per-acre-removed basis. The restoration mitigation fees are applied to pay for costs that are incurred to restore riparian, vernal pool, and emergent wetland land cover types in addition to the protection of existing habitat for mitigation that is addressed through the Base Fee. The process and assumptions used to develop the restoration mitigation cost estimates is described in Appendix F in Section F.2.4, *CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans and CM8: Restore Giant Garter Snake Habitat*. The per acre restoration mitigation fee for riparian, vernal pool, and emergent wetland is calculated by dividing the total estimated habitat restoration-related mitigation costs for each of the land cover types by the total number of “basis acres” for mitigation of impacts on each of these land cover types and other wetland types removed by implementation of all the covered activities (Table 10–1). The basis acres in Table 10–1 are calculated based on the mitigation ratio for other wetland types of lower function (e.g., agricultural wetlands and managed seasonal wetlands) relative to the mitigation ratio for the vernal pools and emergent wetlands (see Table 10–1 footnote). The initial amounts for the Riparian Fee, Vernal Pool Fee, and Emergent Wetland Fee per acre of impact are provided in Table 10–1. The process for adjusting these fees is described in section 8.2.1.1.6 *Mitigation Fee Adjustment Process*.

10.2.1.1.2 Butte County Meadowfoam Habitat Fee

Due to the higher cost of land within and near the City of Chico relative to other parts of the Plan Area, an additional fee of \$2,500 will be charged for each acre of primary habitat of Butte County meadowfoam removed within the Butte County meadowfoam population groupings Chico A, Chico B, and Chico C (see Figure A.30–2, *Butte County Meadowfoam Population Groupings, Occurrences, Modeled Habitat, and Population Estimates* in Appendix A.30, *Butte County Meadowfoam*). This fee applies to impacts on mapped Butte County meadowfoam primary habitat in the Chico UPA (Table 4-9, *Maximum Extent of Permanent Direct Impacts on Modeled Covered Species Habitat Types and Known Occurrences by CAZ and UPA*). This fee is in addition to the Base Fee and Vernal Pool Fee (where applicable) that would be paid on the same acres of land for a given project. The determination of the presence of primary habitat for Butte County meadowfoam will be based on the definition of primary habitat provided in Appendix A.30. This fee does not apply to primary habitat for Butte County meadowfoam in other population groupings, as the Base Fee is sufficient to address the implementation of mitigation measures in those areas. The process for adjusting this fee is described in section 8.2.1.1.6 *Mitigation Fee Adjustment Process*.

10.2.1.1.3 Calculation of Fees for Individual Projects

The Base Fee must be paid for the entire area of the proposed project site that impacts BRCP natural communities and covered species habitat (including agricultural lands that support covered species habitat). Mapped BRCP land cover types that are not considered covered

species habitat and therefore not included in the Base Fee calculation are orchard/vineyard, non-native woodland, dredger tailings with herbaceous vegetation, urban, ranchettes-wooded, ranchettes-open, and disturbed ground.⁸ Table 10–2, *Mitigation Fees by Land Cover Type*, provides a summary of fees required for different land cover types, including jurisdictional wetlands. Figure 10–1, *Calculation of Fees – Examples* (see separate file) provides some hypothetical project examples for how the Base Fee and restoration mitigation fees will be calculated. The process for determining the acreage of impacts used in the calculation of fees is described in Section 8.7.5, *Tracking of Impacts and Conservation Targets*.

Table 10–2. Mitigation Fees by Land Cover Type

Land Cover Type/Wetland Type	Pay Base Fee (yes or no)	Additional Fees	Comments
Grassland	Yes	See comment	Vernal Pool Fee and Emergent Wetland Fee as additional fees for wetland acres present within this land cover type.
Grassland with Vernal Swale Complex	Yes	See comment	Vernal Pool Fee and Emergent Wetland Fee as additional fees for wetland acres present within this land cover type.
Vernal Pools and Other Seasonal Wetlands	See comment	Vernal Pool Fee	Base Fee paid for the overall lands in which the wetlands occur (including the delineated wetland area). Vernal Pool Fee based on delineated wetland area.
Stock Ponds	See comment	No	Base Fee paid for the overall lands in which the ponds occur.
Cottonwood-Willow Riparian Forest	Yes	Riparian Fee	
Valley Oak Riparian Forest	Yes	Riparian Fee	
Willow Scrub	Yes	Riparian Fee	
Herbaceous Riparian and River Bar	Yes	No	
Dredger Tailings with Riparian Forest and Scrub (stream associated)	Yes	Riparian Fee	
Dredger Tailings with Riparian Forest and Scrub (not stream associated)	Yes	No	
Dredger Tailings with Sparse Herbaceous Vegetation	No	No	
Emergent Wetland	Yes	Emergent Wetland Fee	Emergent Wetland Fee based on delineated wetland area.
Managed Wetland	Yes	½ Emergent Wetland Fee	Emergent Wetland Fee based on ½ delineated wetland area.
Managed Seasonal Wetland	Yes	½ Vernal Pool Fee	Vernal Pool Fee based on ½ delineated wetland area.
Open Water	Yes, but see comment	No	No impacts projected for mapped open water (e.g., Lake Oroville, Thermalito Forebay and Afterbay). Impacts not covered by BRCP.

⁸ Some amount of chaparral and conifer dominated forest communities may be affected by BRCP covered activities. These communities and any listed species that may use them are not covered by the BRCP; therefore, additional mitigation under CEQA or other regulations may be required on a project-by-project basis.

Table 10–2. Mitigation Fees by Land Cover Type (continued)

Land Cover Type/Wetland Type	Pay Base Fee (yes or no)	Additional Fees	Comments
Major Canal	Yes, but see comment	No	No impacts projected for Cherokee Canal, impacts not covered by BRCP.
Chaparral	No, but see comment	No	Not covered under BRCP; may be costs for mitigation if required under CEQA or NEPA compliance.
Blue Oak Woodland	Yes	No	
Blue Oak Savanna	Yes	No	
Interior Live Oak Woodland	Yes	No	
Mixed Oak Woodland	Yes	No	
Conifer-Dominated Forest	No, but see comment	No	Not covered under BRCP; may be costs for mitigation if required under CEQA or NEPA compliance.
Nonnative woodlands	No	No	
Orchards / Vineyards	No	No	
Rice	Yes	No (yes, if wetlands present – ¼ Emergent Wetlands Fee)	Emergent Wetland Fee based on ¼ delineated wetland area.
Cropland (Non-Rice)	Yes	No (yes, if wetlands present – ¼ Emergent Wetlands Fee)	Emergent Wetland Fee based on ¼ delineated wetland area.
Irrigated Pasture	Yes	No (yes, if wetlands present – ¼ Emergent Wetlands Fee)	Emergent Wetland Fee based on ¼ delineated wetland area.
Urban	No	No	
Ranchettes – Wooded	No	No	
Ranchettes – Open	No	No	
Disturbed Ground	No	No	
Jurisdictional Wetlands – Any Seasonal Type ¹	Yes, but included in fee paid on land cover type acreage	Vernal Pool Fee	Vernal Pool Fee based on delineated jurisdictional acreage for seasonal wetland types within any of the larger land cover types, except riparian types for which Riparian Fee is paid (no additional fee).
Jurisdictional Wetlands – Any Permanent Type ¹	Yes, but included in fee paid on land cover type acreage	Emergent Wetland Fee	Emergent Wetland Fee based on delineated jurisdictional acreage for permanent wetland types within any of the larger land cover types, except riparian types for which Riparian Fee is paid (no additional fee).

¹ For all section 404 jurisdictional wetlands delineated within any land cover type and affected by a project, the Vernal Pool Fee must be paid for impacts on vernal pools, swales, and other seasonal wetlands (see fee proportions for various wetland types), the Emergent Wetland Fee paid for impacts on permanent wetland types (see fee proportions for various wetland types); and the Riparian Fee paid for impacts on riparian forest and scrub habitats (both section 404 jurisdictional and non-jurisdictional).

The Vernal Pool Fee must be paid for the total acreage of all jurisdictional vernal pools and other seasonal wetlands permanently directly and indirectly⁹ affected by the proposed project. One-half of the Vernal Pool Fee is paid for impacts on jurisdictional portions of managed seasonal wetlands (see Table 10–2). The affected jurisdictional wetlands acreage will be determined by a jurisdictional field survey that is verified by the USACE or other proper authority. If impacts on vernal pools and other seasonal wetlands are avoided through project design (i.e., no permanent direct or indirect impacts) and the avoided vernal pools and other seasonal wetlands meet the BRCP requirements for conservation lands, then this fee is not required. See examples in Figure 10–1. Avoidance and minimization measures are described in Chapter 6, *Conditions on Covered Activities*. BRCP requirements for conservation lands are provided in Section 5.2.3, *Assembly of Conservation Lands*, and CM1, *Acquire Lands*.

The Emergent Wetland Fee must be paid for the total acreage of all jurisdictional permanent emergent wetlands directly and permanently affected by the proposed project. One-half of the Emergent Wetland Fee is paid for impacts on managed wetlands and one-quarter for impacts on jurisdictional wetlands portions of agricultural lands (see Table 10–2). The effected jurisdictional wetlands acreage will be determined by a jurisdictional field survey that is verified by the USACE or other proper authority. If impacts on emergent wetlands are avoided through project design (i.e., no permanent direct or indirect impacts) and the avoided emergent wetlands meet the BRCP requirements for conservation lands, then this fee is not required. Avoidance and minimization measures are described in Chapter 6, *Conditions on Covered Activities*. BRCP requirements for conservation lands are provided in Section 5.2.3 and CM1. *Acquire Lands*.

The Riparian Fee must be paid for the total acreage of all BRCP mapped cottonwood willow riparian forest, valley oak riparian forest, and willow scrub, and stream-associated dredger tailings riparian forest and scrub land cover types that are directly and permanently affected by the proposed project. The Riparian Fee is not required for the removal of non-stream-associated dredger tailings riparian forest and scrub land cover type; however, the Base Fee must be paid for the removal of non-stream-associated dredger tailings riparian forest and scrub land cover type. The effected extent of riparian habitat will be based on the overlap between the proposed development and the location of riparian natural communities. If riparian habitat impacts are avoided through project design, then this fee is not required. See examples in Figure 10–1 for examples of fee calculations. Avoidance and minimization measures are described in Chapter 6, *Conditions on Covered Activities*.

The Meadowfoam Habitat Fee must be paid for the total acreage of all primary habitat of Butte County meadowfoam directly and permanently affected by the proposed project. The affected primary habitat acreage will be determined using the definition of primary habitat provided in Appendix A.30. If primary habitat is avoided through project design, then this fee is not required. Project proponents must comply with all requirements of CM12, *Conserve Butte County Meadowfoam* and avoidance and minimization measures described in Chapter 6,

⁹ Isolation of vernal pools and other seasonal wetlands within a development area is considered an indirect impact and the Vernal Pool Fee must be paid for all acres of vernal pools and other seasonal wetlands caused to be isolated by a project.

Conditions on Covered Activities (see Table 6-3, *Take Limits for Covered Species and Avoidance and Minimization Criteria for Covered Species*).

For transportation and utility projects, the Base Fee will be paid for all acres of natural communities and covered species habitat within the entire width of the project, including the area of project direct footprint development and adjacent lands on which temporary impacts occur or vegetation will be maintained (e.g., mowing, vegetation trimming, mechanical removal of vegetation). See diagram in Figure 10–2, *Mitigation Fee Area for Transportation and Utility Projects* (see separate file). The Vernal Pool Fee, Emergent Wetland Fee, and Riparian Fee will be paid for all acres of respective wetland and riparian resources within the direct footprint and the temporary/maintenance areas of transportation and utility projects (Figure 10–2).

10.2.1.1.4 Avoidance of Resources to Reduce Fee

Project proponents may avoid land supporting covered species habitat and natural communities to reduce their impact fee payments at the discretion of BCAG. Avoided lands with natural communities and covered species habitat that meet the requirements for BRCP conservation lands are not included in the calculation for the Base Fee, Vernal Pool Fee, Emergent Wetlands Fee, Riparian Fee, or Meadowfoam Habitat Fee. BRCP requirements for conservation lands are provided in Section 5.2.3 and CM1, Acquire Lands. These impact fees may only be waived where habitat lands meet the requirements of the BRCP Conservation Strategy (see Chapter 5, *Conservation Strategy*).

10.2.1.1.5 Water and Irrigation District Channel Maintenance Fee

Water and irrigation district covered activities include the maintenance of approximately 49 miles of channels that could result in periodic removal of an estimated 39 acres¹⁰ of habitat that supports covered species (particularly giant garter snake). Western Canal Water District, Biggs-West Gridley Water District, Butte Water District, and Richvale Irrigation District will collectively pay an annual fee to BCAG. This fee supports BCAG's administration of the permit compliance on behalf of the water districts. The annual water district fee is based on the per acre apportionment of BCAG's estimated administration and management costs (see Section 10.3.2.4, *Administration and Management Cost Estimation Methods* and Appendix F, Section F.5, *Administration and Management Costs*). Based on the total annualized estimated BRCP administration and management costs over the 50-year term of the BRCP, the annual Water District Channel Maintenance Fee is \$1,379 per year for all four districts combined (Table 10–1). Apportionment of this fee among the four water and irrigation districts will be at their discretion, but the fee must be paid by January 1 each year. Fee payments will be discontinued following expiration of BRCP permits.

¹⁰Assumes that 66 percent of the channels support habitat comprised of, on average, a 10-foot-wide band of emergent vegetation along either or both sides of channels that could be periodically removed or disturbed by maintenance activities.

10.2.1.1.6 Mitigation Fee Adjustment Process

Land costs in many areas of California have historically increased well above the rate of inflation. The significant demand for housing in several areas of California and the more limited housing supply have often increased housing prices significantly, in turn increasing the value of developable land. Other BRCP costs, including the cost of staff, supplies, and equipment involved in managing, operating, restoring, and maintaining the BRCP conservation lands system, will more closely follow the general rate of inflation. These factors coupled with the often dynamic nature of the costs associated with implementation of regional habitat conservation plans (HCPs) and NCCPs over long timeframes—including land acquisition, habitat restoration, management, monitoring, and administration costs—requires a flexible approach to funding and mitigation fee adjustment through time. To avoid mitigation fees becoming outdated, a process of regular fee adjustment is critical. The mitigation fee adjustment process will involve two primary updating mechanisms that BCAG will use for adjusting fee levels:

1. Automatic Fee Increases through Cost Index – An automated increase through the specified cost index will be applied in all years, except those for which a detailed cost/fee review is conducted.
2. Periodic Detailed Cost/Fee Review – At specified intervals (Years 3 and 6, and every four years thereafter; timing adjustable by BCAG), a thorough evaluation of BRCP implementation costs will be conducted and used to recalculate the mitigation fee levels required to cover mitigation costs.

This dual approach will be used to adjust funding levels during BCRP implementation as described below.

Automatic Fee Adjustment

The variation in the cost of land due to site-specific factors means that it is difficult to develop land cost indices. However, given the link between the housing market, housing prices, and land costs, housing prices generally provide a more accurate index for land cost inflation than measures of general inflation, especially for land whose value is primarily generated by its development value. The index to be used to adjust the land acquisition cost portion of fees is the annual House Price Index (HPI) from the Federal Housing Finance Agency for the Chico, CA Metropolitan Statistical Area for the prior calendar year. The index to be used to adjust the non-land cost portion of fees is the Consumer Price Index (CPI) from the U.S. Bureau of Labor Statistics for the Chico, CA Metropolitan Statistical Area. BCAG may decide to use other indices during Plan implementation if other indices are developed that better predict the costs of the Plan.

On April 1 of each year following issuance of BRCP permits, the BRCP Implementing Entity will adjust all mitigation fees based on changes in these indices. BRCP Joint Powers Authority (JPA) Board of Directors will then approve and adopt the revised fee schedule by July 1 of the

same year. This refinement will allow for an annual inflationary or deflationary adjustment of the fees.¹¹

Automatic fee adjustments will be applied in all years when the periodic detailed cost/fee adjustments are not conducted (see the following section, *Period Cost Review and Fee Adjustment*). Following periodic cost/fee reviews, the next year's automatic fee adjustment will be based on the new fee approved in the year of the review.

BCAG may change the index applied for fee adjustments if alternative indices are identified that better reflect cost changes.

Periodic Cost Review and Fee Adjustment

A detailed review of actual implementation costs will be conducted periodically during BRCP implementation. Mitigation fee adjustments may be made by BCAG based on this cost review. The cost/fee review process will include a review of the cost estimates that underpin the current fee schedule (see Section 10.3 and Appendix F).

To conduct detailed cost/fee reviews, the BRCP Implementing Entity will review its actual cost expenditures as well as other indicators of cost changes. This review will include the assembly and analysis of data associated with actual land transactions after the start of implementation as well as the actual costs of habitat restoration, management, maintenance, monitoring, and administration. Actual Implementing Entity cost experience may be supplemented with other relevant cost information where appropriate (e.g., other land transactions data). Once the revised cost estimates are completed, the mitigation fees will be recalculated to determine the fee level necessary to cover mitigation costs and ensure sufficient funding is available to meet the BRCP's mitigation obligations. These mitigation fee estimates will then be compared with the current fee level to determine what fee adjustments are required. The BRCP JPA Board of Directors must approve fee adjustments.

The administrative burden of conducting detailed cost/fee reviews every year along with the limited new information developed over the course of a single year makes annual reviews impractical. Consequently, detailed reviews will be conducted in implementation years 3 and 6 and then every four years thereafter through Year 50. BCAG will initiate the technical cost/fee review on January 1 of the relevant year with completion of the proposed revised fee schedule expected by April 1. The Board of the Implementing will then approve and adopt the revised fee schedule by July 1 of the same year.

In between the detailed reviews, annual indexed inflationary or deflationary adjustments will be made to the fee schedule (see section above, *Automatic Fee Adjustment*). BCAG may adjust the schedule for detailed reviews if deemed necessary to better track changing costs. Changes in the review schedule may be needed in periods of significant cost change, for example when land values are rapidly increasing or decreasing, fee levels may quickly become outdated.

¹¹ There is no ideal cost index for habitat mitigation costs. An inflationary index provides an interim adjustment process to adjust costs until sufficient new data is available to conduct a detailed cost review.

10.2.1.1.7 Mitigation Fee Context

The existing project-by-project process of compliance with federal and state endangered species laws and regulations requires permit applicants to incur a range of costs associated with species and habitat surveys, impact analyses, mitigation planning, negotiations with the regulatory agencies (e.g., U.S. Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], California Department of Fish and Wildlife [CDFW], and Regional Water Quality Control Board [RWQCB]), document preparation, permit application review and processing, project delays, habitat set-asides and acquisition, habitat restoration, and short-term and long-term monitoring. The mitigation fees associated with implementing BRCP covered projects would replace most of these project-by-project costs.¹²

Mitigation costs for individual projects resulting from the existing state and federal endangered species, wetlands, and other biological regulatory compliance processes are uncertain due to the lack of data on such costs and the wide variety of project size and complexity, but these additional costs are currently incorporated into the overall pricing of new homes and commercial buildings as well as new infrastructure.¹³ With the BRCP, overall biological resources mitigation costs are expected to be lower for a typical new project than under the existing permitting process.

Compared with base mitigation fees applied under existing approved HCPs and NCCPs in California, the proposed BRCP Base Fee is at the low end of the mitigation fee spectrum (Table 10–3, “*Base*” Mitigation Fees (per acre) for Approved HCPs and NCCPs). While comparisons across plans are imperfect due to varying fee structures, land costs, and habitat categories, a review of existing mitigation fees from a number of approved HCPs and NCCPs indicates that the per acre base mitigation fees on residential development fall in the range of \$5,500 to \$38,000 in comparison to the BRCP base fee of \$4,415 per acre.

¹² Note that the BRCP includes requirements for specific species and habitat surveys and impact avoidance and minimization measures to be implemented by the project applicant at their own expense in addition to the payment of mitigation fees.

¹³ Federal ESA, California ESA, California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), CWA sections 404 and 401, Fish and Game Codes such as Streambed Alteration Agreements, and other regulations can all drive requirements for biological resources mitigation that add the costs of project implementation.

Table 10–3. “Base” Mitigation Fees (per acre) for Approved HCPs and NCCPs

Western Riverside County MSHCP (FY 2010–2011)	Coachella Valley MSHCP (2011)	East Contra Costa County HCP/NCCP (2011)	San Joaquin MSCP (2012)	Natomas Basin HCP (2011)	Santa Clara Valley NCCP (2012)
Residential (density < 8 Dwelling Unit/acre) ¹	Residential (density < 8 Dwelling Unit/acre) ²	Fee Zone 2 ³	Natural/Agricultural Lands	Authorized Development Sites	Land Cover Fee: Zones A, B, and C
\$9,690	\$5,490	\$21,324	\$14,372	\$37,547	\$3,905-15,416

¹ Assumes five units at a per-unit fee of \$1,938.

² Assumes five units at a per-unit fee of \$1,098.

³ Includes development fee. Excludes potential wetland mitigation fee and temporary fee.

Key: FY = Fiscal Year; MSHCP and MSHP = multi-species habitat conservation plan.

For habitat restoration mitigation fees added to the base fee, BRCP restoration mitigation fees are generally comparable with those under existing approved HCPs and NCCPs (Table 10–4, *Restoration Mitigation Fees (per acre) Comparison*). A review of the current restoration mitigation fees from approved HCPs and NCCPs indicates that the per acre restoration fees are in the range of \$64,500 to \$191,500, a range that overlaps with the BRCP restoration fee range of \$42,470 to \$93,741.

Table 10–4. Restoration Mitigation Fees (per acre) Comparison

Restoration Fee Category	BRCP Restoration Fee ¹	East Contra Costa County HCP/NCCP (2011) ²	San Joaquin MSCP (2012)	Santa Clara Valley NCCP (2012) ⁴
Riparian	\$55,670	\$64,570	Not applicable ³	\$139,708
Vernal Pools	\$42,470	\$191,445	\$81,989	Not applicable
Emergent Wetland	\$93,741	\$88,359	Not applicable ³	\$171,322

¹ Fees based on: riparian at 1:1 mitigation ratio; vernal pools at 1:1 mitigation ratio; and emergent wetland at 2:1 mitigation ratio.

² Fees based on: riparian at 1:1 mitigation ratio; seasonal wetlands (assumed equivalent to BRCP vernal pools) at 2:1 mitigation ratio; and perennial wetlands (equivalent to BRCP emergent wetland) at 1:1 ratio.

³ Addressed by the base fee for all “Natural/Agricultural Lands” (\$14,372).

⁴ Fees based on willow riparian forest and mixed riparian (equivalent to BRCP riparian) at mitigation ratio of 1:1 and freshwater marsh (equivalent to BRCP emergent wetland) at a 1:1 mitigation ratio.

Per acre restoration mitigation fees are driven both by the estimated restoration cost per acre as well as by the plan’s habitat restoration mitigation ratios. For example, the emergent wetland mitigation fees for BRCP and East Contra Costa County HCP/NCCP are similar, but the mitigation ratio for BRCP is 2:1 while for East Contra Costa County HCP/NCCP it is 1:1; this outcome is the result of an estimated restoration cost per acre of emergent wetland under the BRCP that is substantially lower.

It should be noted that different plans include different sets of costs within their base fees and their restoration fees. For example, in BRCP the restoration fees include only the costs of planning, compliance, and implementing restoration projects with monitoring for the establishment period; while other plans often include in restoration fees the costs for land acquisition, long term monitoring, and endowment funding. All of these other costs are included in BRCP’s base fee rather than in restoration fees.

10.2.1.2 Conservation Component of Local Share Funding

- As a regional joint HCP/NCCP the BRCP must provide for the conservation of species within the biological and geographic context of the Plan Area; as such BRCP biological goals and objectives go beyond the mitigation of impacts that result from covered activities and include contributions to the conservation and recovery of covered species and the conservation of natural communities, including ecological processes, habitat gradients, and biodiversity. This section describes the Local Share sources of funding to implement components of the BRCP that exceed mitigation requirements and contribute to the conservation and recovery of covered species and provide for the conservation of natural communities in the Plan Area. The total area for land acquisition under the BRCP to achieve the BRCP biological goals and objectives is 90,417 acres (see Table 5-9, *Natural Community Conservation and Mitigation Targets for Protection and Restoration*). The acreage split by Local Share and Federal/State Share funding sources for the acquisition of conservation lands, including the conservation and mitigation components of the BRCP, is presented in Table 10–5, *Funding Sources for Conservation Lands by Acreage*. The sources of Federal/State Share BRCP funding are described in Section 10.2.2.

Table 10–5. Funding Sources for Conservation Lands by Acreage

Funding Source	BRCP Conservation Lands (Protection and Restoration)				
	Non-Fee Funded ¹ (acres)	Percent Split	Fee Funded ² (acres)	Percent Split	Total (acres)
Local Share	29,699	50%	31,018	100%	60,717
Federal/State Share	29,700	50%	0	0%	29,700
Total	59,399	100%	31,018	100%	90,417

¹Non-fee funds derived from conservation component funding sources.

²Fee-funds are derived from mitigation fees.

The following are BRCP conservation components that will be funded through Local Share funding sources.

- The acquisition of 29,699 acres of oak woodland and savanna, grassland, grassland with vernal swale complex, riparian habitats, emergent wetlands, managed wetlands, streams, ponds, rice, irrigated pasture, and irrigated cropland land cover types and associated covered species habitats;
- Restoration of 250 acres of giant garter snake habitat;
- Screening of up to 12 water diversions on streams;
- Placement of up to 15,000 cubic yards of salmonid spawning gravels;
- 50 percent of costs associated with removal of impediments to fish passage (removal of debris from BRCP protected channels and repair of the Iron Canyon Fish Ladder); and

- Implementation of all habitat management, monitoring, changed circumstance remedial measures, post-BRCP permit management and monitoring actions, and administration of the BRCP associated with the above actions.

An estimate of the cost and funding share between the Local Share and the Federal/State Share is provided in Table 10–6.

Table 10–6. BRCP Cost and Funding Overview

Funding Source	Projected Amount	% of Funding	Share Source
<i>Development Fees</i>			
Base Fee	\$108,716,886	28.8%	Local
Vernal Pool Fee	\$12,997,350	3.5%	Local
Wetland Fee	\$5,906,250	1.6%	Local
Riparian Fee	\$10,522,575	2.8%	Local
Butte County Meadowfoam Habitat Fee	\$705,000	0.2%	Local
Water/Irrigation District Fee	\$68,958	0.0%	Local
Total Fee Funding	\$138,917,020	37%	Local
<i>Non-Fee Funding</i>			
<i>Other Local Funding</i>			
Land Acquisition by Local Land Agencies, Non-Profits, and Foundations ¹	\$108,965,214	29%	Mixed ²
Butte County Agricultural Mitigation Ordinance ³	\$10,102,100	3%	Local
Total Other Local Funding	\$119,067,314	32%	Mixed²
<i>State and Federal Funding</i>			
New State and Federal Funding	\$119,067,314	32%	Mixed ²
Total Non-Fee Funding	\$238,134,628	63%	
<i>Total Funding and Plan Costs</i>			
Total Funding	\$377,051,648	100%	

¹Land acquisition by local land agencies, non-profits, and foundations are assumed to total 29,699 acres over the 50-year period of implementation. Acquisition costs based on average per acre costs for Plan including transaction costs, etc.

²Funding sources may be a mix of local sources, state grants, and federal grants.

³Assumes 2,500 total acres protected via Butte County agricultural mitigation ordinance over 50-year period of implementation

The following subsections describe the various funding sources that may be used to support the Local Share of funding for the conservation component of the BRCP.

10.2.1.2.1 Regional and Local Government Funding Sources

There is a broad range of local and regional funding sources that have been used to support habitat conservation and agricultural land preservation in California. Many of these funding sources require voter-approval and, hence, must be compelling and popular to pass. Some funding sources represent an alternative way to acquire funding from development rather than via mitigation fees, and so are an alternative to mitigate fees rather than a distinct set of funding

for the conservation component. While these sources are not currently proposed in the BRCP, examples are provided below of local and regional government funding sources that are currently in effect elsewhere in California including: 1) sales tax measures in San Diego County that fund transportation and open space; 2) sales tax measures in Sonoma County that fund open space and agricultural land preservation; 3) property tax assessments and parcel taxes in Alameda County that fund parks and open space preservation and development; 4) property tax assessments and parcel taxes in Contra Costa County that fund parks and open space preservation and development; 5) tipping fees in Riverside County; 6) Mello-Roos Community Facilities District special taxes in Solano County for open space preservation; and 7) homeowner's association fees on development in areas surrounding San Bruno Mountain in San Mateo County. These examples of local and regional fee funding sources are not proposed or required to support BRCP implementation and are provided here only as examples of possible approaches that the Permittees may decide, individually or collectively, to use in funding the BRCP during implementation.

10.2.1.2.2 Private Foundation Grant Programs

There are a number of private foundations and non-profits that have provided significant funding for open space and habitat acquisition and restoration. Foundations and non-profits with major presences in California and applicable missions include: 1) David and Lucile Packard Foundation; 2) The Columbia Foundation; 3) William and Flora Hewlett Foundation; 4) The Irvine Company; and 5) the National Fish and Wildlife Foundation. BCAG will seek grant funding for the conservation component of the BRCP from these and other similar organizations.

10.2.1.2.3 Land Trust and Conservation Partner Activities

The activities of regional and national land trusts often provide substantial support to the achievement of conservation goals. Examples of land trusts and other non-profit conservation partners in Butte County are the Northern California Regional Land Trust, the Nature Conservancy, and the Chico State University Chico Research Foundation.

The Northern California Regional Land Trust was founded in 1990 and incorporated as a nonprofit tax exempt organization under section 501(c)(3) of the Internal Revenue Service to assist northern California landowners and public agencies in the voluntary protection of land and other natural resources. The organization is dedicated to promoting the conservation and preservation of northern California's open spaces, agricultural lands and natural resources with cooperation between the community, private landowners, public agencies and other nonprofit groups. The Northern California Regional Land Trust currently holds 27 conservation easements in Butte and Tehama counties covering over 15,500 acres.¹⁴ Between 1998 and 2013, the Northern California Regional Land Trust has protected over 4,700 acres of habitat in Butte County.

¹⁴ <http://www.landconservation.org/ncrltpreserves.php>

The Nature Conservancy is one of the World's leading conservation organizations working to protect ecologically important lands and waters for nature and people and addresses the most pressing conservation threats at the largest scale. The Nature Conservancy has historically preserved vernal pool grasslands in Butte and Tehama counties. Between 1999 and 2013, The Nature Conservancy has protected over 1,000 acres of habitat in Butte County.

The Chico State University Chico Research Foundation was incorporated in 1997 as a private non-profit corporation that is self-financed and receives no state appropriations. The Chico Research Foundation is also active in acquiring conservation lands to protect natural communities for basic research purposes and funds and manages various existing ecological preserves. Between 1997 and 2013, the Chico Research Foundation has acquired approximately 4,100 acres of conservation lands in Butte County.

Since 1997, the combined efforts of the Northern California Regional Land Trust, The Nature Conservancy, and the Chico Research Foundation have resulted in the protection of 9,800 acres of conservation lands in Butte County averaging about 640 acres per year.¹⁵ Based on this historic track record for just these three conservation partners (and the assumption that additional conservation partners are likely to participate during the 50-year period of BRCP implementation), the BRCP could acquire 32,000 acres over 50 years, or over 2,000 acres more than needed to achieve the full 29,699-acre BRCP Local Share funded conservation land acquisition. In addition, an estimated 2,500 acres of agricultural lands will be acquired under the Butte County Agricultural Mitigation Ordinance over the BRCP implementation period, most or all of which are expected to meet BRCP conservation requirements.

The prior and future conservation efforts of land trusts and other conservation organizations in Butte County will contribute directly to the conservation goals of the BRCP and will indirectly fund BRCP implementation through the raising and investment of their own funding. Lands acquired and protected or restored for the conservation of species and habitats within the Plan Area by nongovernmental organizations such as land trusts and conservancies and other non-profit conservation partners, will be counted toward the Local Share contribution to the conservation component of the BRCP.

10.2.1.2.4 Other Mechanisms for Land Conservation and Local Share Funding

There are a number of additional mechanisms through which land conservation can be achieved in the Plan Area. In many California counties, private donations of conservation easements or fee title ownership to land tracts of valuable open space and conservation land have made important contributions to conservation efforts. These donations carry potential tax-benefits for the donor, though are often driven by individual preferences and values rather than financial concerns.

¹⁵ Estimated as 4,700 acres by the Northern California Land Trust over 15 years for 313 acres/year; 1,000 acres over 14 years by The Nature Conservancy for 71 acres/year; and 4,100 acres over 16 years by the Chico Research Foundation for 256 acres/year. The sum is $313 + 71 + 256 = 640$ acres/year and $640 \text{ acres/year} \times 50 \text{ years} = 32,000$ acres.

Additional regulatory conservation tools, such as clustering ordinances and transfer of development rights programs, have sometimes been successful in California (e.g., Livermore, San Luis Obispo), though care must be taken to avoid overlap with and duplication of mitigation requirements.

In addition to the direct Local Share funding sources described above, support for the operation of BCAG may also be provided indirectly through the in-kind provision of staff support by BCAG and other Permittees.

10.2.1.3 Funding Post-Permit Land Management

At the end of the 50-year permit period, ongoing annual costs will remain that will require funding in perpetuity. All habitat protection, enhancement, and restoration will have been completed and therefore the ongoing costs will be substantially less than costs during the permit period with the primary focus on conservation land management and a reduced level of administrative, legal, and monitoring activities. Funding of the operations of BCAG to manage and monitor the BRCP conservation lands system after the 50-year permit period will be provided through the returns on an endowment fund built during the 50-year permit period. The endowment fund is described in Section 10.3.2.6, *Post-BRCP Permit Endowment Cost Estimation Methods* and in Section F.7, *Post-BRCP Permit Implementation Costs*. While the endowment will be built from various funding sources, all post permit funding is the responsibility of BCAG and the Permittees. Any shortfalls in returns from the endowment to meet the funding requirements for managing the BRCP conservation lands will be the responsibility of and addressed by BCAG and the Permittees.

10.2.2 Federal/State Funding Sources

As a regional joint HCP/NCCP the BRCP must provide for the conservation of species within the biological and geographic context of the Plan Area; as such BRCP goals go beyond the mitigation of impacts that result from covered activities and include contributions to the conservation and recovery of covered species and the conservation of natural communities, including ecological processes, habitat gradients, and biodiversity. This section describes the Federal/State sources of funding to support implementation of the components of the BRCP that contribute to the conservation and recovery of covered species and provide for the conservation of natural communities in the Plan Area. Funding from these sources will be used by BCAG to protect, enhance, restore, and manage species occurrences, species habitat, and natural communities as described in Chapter 5, *Conservation Strategy*.

The total area for land acquisition under the BRCP to achieve the BRCP biological goals and objectives is 90,417 acres (see Table 5-9). The acreage split by funding sources for the acquisition of conservation lands to protect and restore habitat, including the conservation and mitigation components, is presented in Table 10-5. The Local Share of BRCP funding, separated by mitigation and conservation components, is described in Section 10.2.1. All Federal/State Share funding supports the implementation of BRCP conservation components only. An estimate of the cost and funding between the Local Share and potential Federal/State

funds is provided in Table 10–6. The description of the implementation costs (Section 10.3 and Appendix F) provides the details and rationale for the breakdown of implementation costs between the conservation component and mitigation component of BRCP Conservation Strategy. Funding of the BRCP conservation component will be shared between the Local Share of funding (see Section 10.2.1.2) and the Federal/State Share of funding described here.

The following are BRCP conservation components that will be funded through Federal/State Share funding sources.

- The acquisition of 29,700 acres of oak woodland and savanna, grassland, grassland with vernal swale complex, riparian habitats, emergent wetlands, managed wetlands, streams, ponds, rice, irrigated pasture, and irrigated cropland land cover types and associated covered species habitats;
- Restoration of 250 acres of giant garter snake habitat;
- Screening of up to 13 water diversions on streams;
- Placement of up to 15,000 cubic yards of salmonid spawning gravels;
- 50 percent of costs associated with removal of impediments to fish passage (removal of debris from BRCP protected channels and repair of the Iron Canyon Fish Ladder); and
- Implementation of all habitat management, monitoring, changed circumstance remedial measures, post-BRCP permit management and monitoring actions, and administration of the BRCP associated with the above actions.

The total conservation component of the BRCP costs is estimated at about \$238.1 million in 2011 dollar terms over the 50-year permit term (see Section 10.3 and Appendix F). BCAG is responsible for acquiring sufficient funding to implement the conservation actions within the timeframes presented in Section 8.1, *BRCP Implementation Schedule*. BCAG will work with federal and state agencies to identify and secure funding for non-mitigation conservation activities. Support for securing funding from the following agencies will be particularly important: USFWS, NMFS, CDFW, Natural Resources Conservation Service (NRCS), U.S. Environmental Protection Agency (EPA), and USACE. Similar to the implementation of other HCPs and NCCPs, a broad range of funding sources will be required over the period of BRCP implementation. The following subsections provide more detail on potential federal and state funding sources.

10.2.2.1 Federal Grants and Legislation

Federal grant sources have played a critical role in funding the preservation of habitat nationwide, including supporting the implementation of HCPs and NCCPs. The largest federal funding sources for HCP and NCCP implementation over the last 20 years include the ESA Section 6 Grants for habitat land acquisition, the Land and Water Conservation Fund, and the North American Wetlands Conservation Act Grant Program. Funding for all these programs has

or may be reduced in the face of the current economic downturn and fiscal challenges, but may rebound as stronger economic conditions return. Highlights of these funding sources include the following:

- **ESA Section 6 Grants.** Land acquisition grants provided under section 6 of the ESA have been the most important source of conservation funding for HCP implementation in recent years. Between 2001 and 2004, California received an average of about \$24 million annually, amounting to about 50 percent of the total nationwide funding. In 2010, land acquisition grant funding for California was about \$20 million; in 2011, it was \$16.4 million and in 2012 it was \$7.0 million.¹⁶ Declines in funding due to federal budget cut backs resulting from the Great Recession are expected to continue in the short term, but improvements in funding could result as stronger economic conditions return. HCP and NCCPs throughout California have received significant funding from this source, including plans in San Diego County, Riverside County, Sacramento County, and Contra Costa County, among others.
- **The North American Wetlands Conservation Act Grants.** The North American Wetlands Conservation Act program is also administered by the USFWS. This program provides matching grants to private or public organizations or to individuals who have developed partnerships to carry out wetlands conservation projects. Nationwide annual funding availability has varied, generally between \$40 million and \$100 million.
- **Land and Water Conservation Fund.** Additional potential federal grant funding sources include the Land and Water Conservation Fund that provides matching grants to state and local governments for the acquisition and development of public outdoor recreation areas and facilities, as well as funding for shared federal land acquisition and conservation strategies.

Additional potential sources of federal funding and support for BRCP implementation include the following programs. Some of these programs have not been authorized every fiscal year, but may be reauthorized again sometime in the future; they are identified here as examples of past funding sources associated with HCP/NCCPs in California.

- **Environmental Quality Incentives Program.** Administered by the NRCS, this program provides financial assistance to plan and implement conservation practices that address natural resources concerns and for opportunities to improve soil, water, plant, animal, air or related resources on farm land and non-industrial private forestland.
- **Farm and Ranch Land Protection Program.** Also administered by the NRCS, the Farm and Ranch Land Protection Program utilizes funds provided by the U.S. Department of Agriculture (USDA) for up to 50 percent of conservation easement value.

¹⁶ California Department of Fish and Wildlife website, www.dfg.ca.gov; U.S. Fish and Wildlife Service website, http://www.fws.gov/endangered/esa-library/pdf/Section6_grants.pdf

- **Wildlife Habitat Incentive Program.** The Wildlife Habitat Incentive Program is administered by the NRCS and provides technical assistance to landowners and others to develop habitat that supports fish and wildlife populations of national, state, tribal and local significance.
- **Wildlife Restoration Program Grants.** This Wildlife Restoration Program was authorized under the Pittman-Robertson Act and is used for the selection of restoration, rehabilitation, and improvement of wildlife habitat, wildlife management research and distribution of information produced by projects. The Wildlife Restoration Program is administered by the USFWS.
- **Landscape Conservation Cooperatives.** Administered by the USFWS, the Landscape Conservation Cooperatives program was established to improve science and management decisions in response to climate change. The program is intended to apply strategic habitat conservation through partnerships with other federal agencies, states, tribes, non-governmental organizations and stakeholders.
- **General Challenge Grants.** Administered by the National Fish and Wildlife Foundation. General Challenge Grants provide funding up to \$150,000 for projects that foster cooperative partnerships to conserve fish, wildlife, plants, and their habitats. In addition, the National Fish and Wildlife Foundation administers the Five Star Restoration Challenge Grant for projects that support community-based wetland, riparian, and coastal habitat restoration projects. These grants, however, are modest in size and are limited to \$20,000 or less.
- **Habitat Conservation Fund.** The Habitat Conservation Fund is administered by the California Department of Parks and Recreation, requires dollar-for-dollar match from non-state source for wetlands, riparian, trails, and anadromous fish/trout categories.
- **Recreation Trail Fund.** The Recreation Trail Fund provides federal dollars for non-motorized trail projects and can provide up to 80 percent of total project cost. The fund is administered by the California Department of Parks and Recreation.
- **Clean Water State Revolving Fund.** Administered by the EPA, the Clean Water State Revolving Fund provides low-interest loans for projects that improve water quality and reduce nonpoint source pollution, including the preservation, restoration, and creation of wetlands. Loans can cover 100 percent of the project costs.

Finally, funding for the conservation of habitat has been and can be acquired directly through federal legislation. The Permittees and Implementing Entity have the ability to lobby Congress for funding to support implementation of the BRCP. Additionally, BRCP is a member of the

Northern California Conservation Planning Partners¹⁷ that can lobby collectively to attain federal funds for implementation of HCPs and NCCPs in Northern California, including the BRCP.

10.2.2.2 State Grants and Legislation

State bond funding and the state's general fund have funded major investments in natural resources, along with parks and recreation, over the last four decades. The state administers the bond programs and funding, typically through competitive (e.g., Non-motorized Trails Grant Program, California Heritage Fund Grant Program, and the Environmental License Plate Fund) and noncompetitive (e.g., per capita) grant programs. The noncompetitive grants are allocated to local and regional jurisdictions for use at the discretion of the jurisdiction for projects that meet state guidelines. Other state grant programs include:

- California Wildlife Conservation Board Grants
- California Farmland Conservancy Program (California Department of Conservation)
- Habitat Conservation Fund (California Department of Parks and Recreation)
- Watershed Coordinator Grant Program (California Department of Conservation)
- Resources Trust Fund (California State Lands Commission)
- CALFED Water Program Grants (California Bay-Delta Authority, California Department of Water Resources)

Between 1970 and 2003, Californians approved 27 of 37 natural resource bonds measures to fund \$15.3 billion in park and water-related programs, an overall 73 percent approval rate. During the 1970s and 1980s, 90 percent of bond referenda were approved though minimal parks bonds passed during the 1990s. After 2000, however, some of the largest natural resource bonds were passed by California voters, including the following:

- **Proposition 12**, 2000 Safe Neighborhoods, Clean Water and Coastal Protection Act, \$1.2 billion
- **Proposition 13**, 2000 Safe Drinking Water, Watershed Protection, and Flood Control Bond, \$505 million
- **Proposition 40**, 2002 bond for clean water, air, parks and coastal protection, \$2.3 billion
- **Proposition 50**, 2002 bond to fund a variety of water projects, including coastal land protection, \$1.5 billion
- **Proposition 84**, 2006 parks and water bond to improve drinking water, flood control, protection of coastlines, and state parks, \$5.4 billion

¹⁷ A consortium of counties that have completed or are preparing HCPs and NCCPs in Northern California, including BRCP, East Contra Costa HCP/NCCP, Yolo Natural Heritage Program, Placer County Conservation Plan, Natomas Basin HCP, South Sacramento County HCP, San Joaquin County HCP, Solano County HCP, Yuba-Sutter Regional Conservation Plan, and Santa Clara Valley Habitat Plan.

Revenues from most of these bonds have been fully exhausted or allocated, though Proposition 84 still has some revenues remaining. Other natural resource bonds with funds still available include Proposition 117, often referred to as the “Mountain Lion Fund,” that was approved by California voters in 1990 and provided \$30 million per year for 30 years (through 2020).

It is expected that as the economy recovers from the Great Recession, future state bonds will provide a strong potential funding source for conservation efforts in California. There should be substantial opportunities for additional bond funding over the 50-year implementation term of the BRCP.

Funding for the conservation of habitat has been and can be acquired directly through state legislation. The Permittees and Implementing Entity have the ability to lobby the California Legislature for funding to support implementation of the BRCP. Additionally, BRCP is a member of the Northern California Conservation Planning Partners that can lobby collectively to attain state funds for implementation of HCPs and NCCPs in Northern California, including the BRCP.

10.2.3 Funding Assurances

The Permittees, led by BCAG, are committed to securing sufficient funds within the required timeframe to implement the BRCP Conservation Strategy in its entirety. Funding for the mitigation component of the BRCP (i.e., payment of impact fees) will be provided by project applicants to BCAG under the process described in Section 8.7, *Process for BRCP Implementation*. Funding for the conservation component of the BRCP will be sought by BCAG and the Permittees from the sources identified in Section 10.2.1 and Section 10.2.2, and other appropriate sources. BCAG and the Permittees will secure sufficient funds within the timeframe identified in the BRCP implementation schedule (section 6.1, *BRCP Implementation Schedule* and specifically Tables 8–1, *BRCP Land Acquisition Schedule for Natural Communities for Species Conservation Component* and 8–2, *BRCP Schedule for Conservation Component (i.e., Non-Mitigation) of Specified Biological Resources*) to implement the conservation component of the program.

It is anticipated that state and federal agencies, including the USFWS, NMFS, and CDFW, will contribute to the conservation component of the BRCP. The Permittees recognize that state and federal funds cannot be guaranteed in advance of the approval of yearly budgets, nor can they be guaranteed by agency staff without the authority to commit these funds. However, the Permittees assume and request the assurance that the USFWS, NMFS, and CDFW will make every effort to assist BCAG in securing the funding outlined in this chapter to contribute to species recovery and to help implement the conservation component of the BRCP.

10.3 ESTIMATE OF IMPLEMENTATION COSTS

10.3.1 Scope and Purpose of the Implementation Cost Analysis

The BRCP identifies conservation actions that will be implemented over the 50-year implementation period to meet the biological goals and objectives and to comply with the

requirements of the ESA and the NCCPA (see Sections 5.3, *Biological Goals and Objectives* and Section 5.4, *Conservation Measures*). Among those actions are measures to avoid, minimize, and mitigate impacts of the covered activities (described in Chapter 2, *Covered Activities*) on natural communities and covered species (described in Chapter 3, *Existing Ecological Conditions*, and Appendix A, *Covered Species Accounts*) and to provide for the conservation of natural communities and covered species. In addition, the BRCP includes the implementation of monitoring and adaptive management actions (Section 7.2, *Monitoring Program* and Section 7.3, *Adaptive Management Plan*) and steps to respond to changed circumstances (Section 8.4, *Changed Circumstances and Unforeseen Circumstances*).

The BRCP implementation cost analysis quantifies the estimated total cost to implement the BRCP over 50 years and subdivides those costs between the mitigation component and conservation component of specific BRCP actions. The implementation cost estimates are used to establish the Local Share and Federal/State Share funding requirements for BRCP implementation (Section 10.2, *Funding Sources and Assurances*). Cost estimates are provided for the mitigation component and conservation component for each of the following cost categories.

- **Conservation Measures.** Cost estimates are provided for each of the 12 conservation measures described in Section 5.4. The cost estimates for conservation measures only include, except where noted otherwise, costs directly associated with implementation of the actions required to physically implement each measure, including any associated avoidance and minimization measures (see Chapter 6, *Conditions on Covered Activities*). Costs associated with planning, permitting, monitoring, conducting surveys, and related actions that support the physical implementation of conservation measures are, except as noted in Appendix F, included under other cost categories in this chapter.
- **Environmental Compliance.** This category includes costs associated with complying with other laws and regulations and obtaining associated permits necessary to implement some of the conservation measures. Conservation measures that are expected to require such compliance are those that require vegetation and ground disturbing activities such as restoring habitat (e.g., riparian and wetlands habitat restoration) or require disturbance of streams to enhance existing habitat, such as in-channel placement of spawning gravels.
- **Monitoring and Other Surveys.** This category includes costs associated with implementing the monitoring plan (see Section 7.2) and conducting pre-land acquisition and other surveys related to the management of conservation lands.
- **Administration and Management.** This category includes costs necessary to administer implementation of the BRCP, including hiring of personnel and the ongoing costs of personnel expenses, office equipment and supplies, contracted services, and other overhead and related expenses. A description of the BRCP Implementing Entity and administrative functions is provided in Chapter 9, *Implementation Structure*.

- **Changed Circumstances.** This category includes costs of implementing measures to respond to changed circumstances. The range of measures to address changed circumstances is described in Section 8.4.2.2, *Changed Circumstances Addressed by the BRCP*.
- **Post-BRCP Permits.** This category includes the costs associated raising an endowment that would fund ongoing management of conservation lands after the expiration of BRCP incidental take permits 50 years following their issuance.

The estimate of costs is for the purpose of projections of necessary funding to implement the BRCP, however, should costs be greater or less than the estimates provided the commitment to funding the full implementation of the BRCP as described under Section 10.2 is unchanged.

10.3.2 Cost Estimation Methods

This section summarizes the methods and assumptions used to estimate implementation costs for each of the cost categories. Detailed descriptions of methods and assumptions used to estimate costs for each of the cost categories are presented in Appendix F. Implementation cost estimates represent average planning-level cost estimates in 2011 dollars. Specific investments (such as specific land acquisitions, restoration projects, or monitoring efforts) are expected to show significant unit cost volatility around the assumed averages, given the unique effects of parcel-specific characteristics on costs. The implementation cost estimates are considered best estimates in 2011 dollar terms given the information available and current market conditions.

Major considerations and assumptions used to estimate total implementation and per unit costs included the following parameters:

- **Land Protection and Restoration Goals.** Total BRCP costs are driven by the natural community and covered species habitat protection and restoration objectives (Tables 5–5, *Natural Community Protection Targets*, 5–7, *BRCP Restoration Targets*, and 5–8, *BRCP Covered Species Modeled Habitat Protection Targets*) which will require protection of approximately 90,416 acres, mainly through permanent conservation easement acquisitions but also including fee title acquisition as necessary.
- **Acquisition Approach.** Land can be acquired for habitat protection through either fee title or permanent conservation easement. In most instances, permanent conservation easement acquisitions are preferred, as they allow for continued land use practices in the working landscapes of Butte County (e.g., farming, ranching, and other land uses) and can be less costly to acquire and maintain compared to fee title acquisitions. In some instances, fee title acquisition will be necessary, such as areas where habitat will be restored, conservation lands requiring frequent access and more intensive habitat management, and instances where landowners are only interested in fee title sale of the

land. In all cases, the BRCP JPA Board will need to approve fee title acquisitions of land (see Section 10.7).¹⁸

- **Acquisition Size.** Some cost estimates are determined on a per transaction basis rather than a per acre basis. Larger area acquisitions will generally be preferred, but smaller parcels with particularly high biological value will be pursued. Based on a review of the available parcel sizes, an average transaction size of 160 acres was assumed for cost estimating purposes.
- **Implementation Schedule.** The term of the BRCP is 50 years and includes the full range of conservation activities and investments. The BRCP includes a timeline for implementation of the conservation component activities divided into five periods, each a decade long (Tables 8–1, 8–2, and 8–3, *BRCP Schedule for Restoration of Natural Communities for Conservation Component*). The cost estimates used the BRCP timeline to subdivide estimated costs by 10-year period. Mitigation actions are required to be conducted as covered activities occur and, since there is no set schedule for covered activities, there is no set schedule for implementation of mitigation actions and costs.¹⁹ In the absence of a mitigation implementation schedule, the cost analysis used the assumption that the acquisition of lands to protect and restore habitat for mitigation would be implemented proportionately on the same schedule as land acquisitions for the conservation component (Tables 8–1 to 8–3).
- **Unit Cost Research.** Unit cost research (including additional estimates of unit cost drivers, e.g., number of conservation land management contractors required) was conducted as necessary to ensure that total cost estimates could be developed for all conservation measures and cost categories. In general, the unit cost driver and unit cost estimates were based on one or a combination of the following approaches:
 - **County-Specific Data.** In some cases, most notably for land values, per acre values were developed primarily based on information directly from Butte County examples. Land value estimates were developed based on information on land transactions in Butte County as provided by recent appraisals, County assessor information, commercial land value databases, and interviews with selected appraisers, brokers, and land trust operators active in the area.
 - **Literature Review and Case Studies.** A number of the conservation measure implementation and monitoring costs were developed based on a review of available literature and personal communications on the costs of planning, implementing, and monitoring different conservation activities. Some of these case studies provided unit costs from Butte County cases, though literature from other locations where the conservation activity and habitat characteristics were similar was also considered.

¹⁸ The Implementing Entity will coordinate with USFWS and CDFW on land acquisitions.

¹⁹ Mitigation actions must be initiated prior to or concurrent with the impacts of the covered activities, but the timing of most covered activities will be determined by specific markets within the regional economy (e.g., housing market, commercial markets, transportation needs and funding, etc.).

- **Existing Conservation Plans.** While all regional conservation plans are different, experiences associated with administration and management of approved HCPs and NCCPs provide useful cost indications for the BRCP. Cost assumptions used in several other California regional conservation plans were considered while developing the cost estimates in this analysis. Information from the East Contra Costa HCP/NCCP, San Joaquin County HCP, and Natomas Basin HCP proved useful to costing the aspects of the BRCP where activities were similar. Experiences in other plans with ongoing endowments and other costs where circumstances are sufficiently similar provided useful cost indications.
- **BRCP-Specific.** BCAG, as the BRCP Implementing Entity, will be responsible for undertaking all necessary tasks to implement the BRCP (Chapter 9, *Implementation Structure*). The specific activities required under the BRCP as well as the existing capabilities and capacities of BCAG were taken into account when estimating the additional needs for staffing and equipment.

In instances where a cost could be included in more than one cost category, that cost was allocated to the most appropriate cost category as described in Appendix F. All costs are expressed in 2011 dollar terms to allow for better comparability of real costs through time and to avoid the impact of making specific assumptions about the uncertain rate of inflation.

The following sections provide a general overview of the methods and assumptions used to prepare cost estimates for each of the BRCP cost categories. Detailed descriptions of methods and assumptions are provided in Appendix F.

10.3.2.1 Conservation Measure Cost Estimation Methods

Conservation measure CM1, Acquire Lands requires acquisition of lands that support existing habitat and lands that are suitable for habitat restoration to achieve natural community and covered species habitat objectives (see Section 5.4.1.1, *CM1: Acquire Lands* and Tables 5–5, 5–7, and 5–8). Available lands meeting BRCP natural community protection and restoration requirements will be acquired through conservation easement or in fee title ownership at fair market value. The values of fee title ownership and conservation easement on land is based on land value research on transactions in Butte County. The average per acre values used were based on information on land transactions as provided by recent appraisals, County Assessor information, commercial land value databases, and interviews with selected appraisers and brokers active in the Plan Area. Estimated costs for CM1, Acquire Lands also capture all land acquisition costs associated with implementation of conservation measures CM12, Conserve Butte County Meadowfoam and CM13, Conduct Surveys to Locate and Protect New Occurrences of Butte County Checkerbloom, and survey costs for these conservation measures are addressed under administrative costs for Implementing Entity biologists.

Cost estimates for conservation measures CM2, CM4 through CM9-CM11, and CM14 are based on actual or estimated costs of similar conservation actions implemented or planned under other conservation programs and conservation measure-specific assumptions regarding how each of

these conservation measures will be implemented in the Plan Area (see Appendix F). Costs for implementing conservation measures CM3 is strictly administrative and are included in the Administration and Management cost category.

10.3.2.2 Environmental Compliance Cost Estimation Methods

Environmental compliance costs are applicable to BRCP terrestrial and aquatic habitat restoration projects (see Section 5.4.2.1, *CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans*) and encompass costs necessary to prepare NEPA, California Environmental Quality Act (CEQA), Clean Water Act (CWA), National Historic Preservation Act (NHPA), and other environmental compliance documents and secure associated permits and authorizations. The cost estimates included in this analysis assume an average restoration project size of about 40 acres. The average environmental compliance cost per restoration project is estimated at \$115,000, including \$60,000 for NEPA and CEQA, \$25,000 for CWA, \$15,000²⁰ for NHPA, and \$15,000 for other environmental compliance laws and regulations. The NHPA costs only include the cost of a cultural inventory; if significant cultural resources were found, the NHPA compliance cost could increase considerably. It is assumed that other BRCP implementation actions, such as land acquisition, ongoing maintenance and habitat management, and monitoring and other survey work, will not require environmental compliance and therefore would not incur any environmental compliance costs.

10.3.2.3 Monitoring and Other Surveys Cost Estimation Methods

Surveys and other activities associated with BRCP monitoring requirements are described in Section 7.2. Other survey costs include surveys necessary to evaluate lands for acquisition into the BRCP conservation lands system, baseline surveys of BRCP protected lands, and surveys necessary to locate spawning gravel replenishment sites, and to collect seed from and monitor effects on plant occurrences from which seed is collected to establish new plant occurrences.

Most costs for this cost category are labor costs, since equipment needs are assumed to be minimal. The monitoring and other survey cost estimates included in this cost analysis represent planning-level “best estimates” based on standardized assumptions. These assumptions may not fully encompass the inherent flexibility and variability of each parameter considered. Landscape-level monitoring involves monitoring the overall status of the covered species over the term of the BRCP and is conducted specifically to inform adaptive management decisions.

10.3.2.4 Administration and Management Cost Estimation Methods

The structure of and responsibilities for implementing the BRCP program are described in Chapter 9, *Implementation Structure*. BCAG will be the Implementing Entity and will be responsible for implementation of the BRCP, including all costed elements of the mitigation and conservation components. To carry out the responsibilities associated with implementing the

²⁰ CWA section 404 wetland delineation costs are included in monitoring costs described in Section 10.3.2.3, *Monitoring and Other Surveys Cost Estimation Methods*.

BRCP, BCAG will require funding to support additional staff, expense/supply costs, and legal and other advisory services provided by outside professional services organizations. Costs were estimated based on current BCAG operating costs and expenditures for advisory services reported by other approved HCP/NCCP implementing entities in California. Specific assumptions used to calculate administration and management costs are presented in Appendix F.

10.3.2.5 Changed Circumstances Cost Estimation Methods

Changed circumstances are described in Section 8.4.2. Changed circumstances for which costs are estimated are those that affect covered species habitat conditions on BRCP conservation lands. Any costs associated with changed circumstances that require only an administrative response (e.g., coordination with the permitting agencies) are included in administration and management costs. In the event that changed circumstances affecting habitat conditions on conservation lands occur, BCAG may implement, as appropriate, the planned responses identified for each of the changed circumstances described in Section 6.4.2.2. Conservation measures that address habitat conditions on conservation lands are:

CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans
CM5: Enhance Protected Natural Communities for Covered Species
The cost analysis assumes that the cost for implementing responses to changed circumstances will be 10 percent of the total implementation costs for the conservation measures listed above. This assumption is considered reasonable because it effectively assumes that the intended habitat functions for covered species on up to 10 percent of all BRCP conservation lands (9,042 acres) could be affected by changed circumstances. Any greater magnitude of habitat failure would be considered catastrophic and beyond the financial resources of BCAG to address.

10.3.2.6 Post-BRCP Permits Endowment Cost Estimation Methods

In the post-BRCP permits period (i.e., when BRCP incidental take permits expire 50 years following their issuance), the management and maintenance of BRCP conservation lands will continue in perpetuity (see Section 8.7.1.9, *Post-BRCP Permits Administration and Management Activities*, for a full description of post-BRCP permits activities). To pay for these ongoing costs in the post-BRCP permit period, a non-depleting endowment will be built over the 50 years of the BRCP implementation period. This endowment will be sufficient to generate interest payments that annually support BRCP administration and management and conservation land management and maintenance costs in perpetuity. The cost estimate for funding the endowment is based on an assumed real interest rate of 2 percent.

To determine the necessary size of the endowment, an estimate was developed for conservation land maintenance, management, and administration costs on an ongoing annual basis in the post-BRCP permit period. Specific assumptions are described in Appendix F. By the end of the BRCP permits period, all conservation measures will have been implemented and compliance and effectiveness monitoring requirements achieved. Consequently, there are no post-BRCP permits

implementation costs associated with land acquisition, habitat restoration, environmental compliance, most monitoring/surveys, and changed circumstances categories. Administration and management costs during the post-BRCP permit period are assumed to be substantially reduced from such costs during BRCP implementation due to greatly reduced responsibilities of BCAG. Conservation land management and maintenance costs in the post-BRCP permit period include labor and material and supply costs necessary to maintain conservation land infrastructure (e.g., fences, fire breaks, roads), land management practices (e.g., grazing), and management of water for specific species habitats.

10.3.3 Mitigation and Conservation Components of Cost Estimates

Using the methods summarized in Section 10.3.2 and described in Appendix F, a total cost estimate for each of the cost categories was calculated based on full implementation of the BRCP. The mitigation component of the implementation costs was estimated by disaggregating the costs of implementing mitigation measures that address the effects of the covered activities on natural communities and covered species from the costs for implementing the full BRCP Conservation Strategy (see Appendix F for a description of assumptions used to identify the mitigation component costs for each of the cost categories). The remaining costs of the full BRCP Conservation Strategy implementation comprise the conservation component costs.

10.3.3.1 Mitigation Component BRCP Implementation Cost Estimate

Total mitigation component costs under the BRCP are estimated to be \$138.9 million in 2011 dollar terms (Table 10–7, *Summary of BRCP Mitigation Implementation Costs by Cost Category* and Figure 10–3, *Summary of Mitigation Component Implementation Costs by Cost Category* [see separate file]). These costs address the mitigation requirements for impacts on biological resources resulting from 24,624 acres of new development within the Plan Area that will require mitigation (Table 4-4). The total mitigation component costs reflect the mitigation requirements if all of the covered activities (see Chapter 2, *Covered Activities*) are implemented (i.e., full build-out of the County’s and cities’ general plans, transportation plans, and other plans and activities). For those covered activities that are not implemented, mitigation will not be required and the total mitigation costs will be lower than indicated in Table 10–7.

Table 10–7. Summary of BRCP Mitigation Implementation Costs by Cost Category¹

Cost Category	Estimated Cost
Conservation Measures	\$108,656,000
Environmental compliance	\$1,785,000
Monitoring and other surveys	\$3,516,000
Administration and Management	\$11,295,000
Changed circumstances	\$3,143,000
Endowment Costs for Post-BRCP implementation	\$10,522,000
Total	\$138,917,000

¹ Discrepancies in total values due to rounding. Cost estimates are rounded to the nearest \$1,000.

To provide context for the estimated mitigation component costs for mitigating impacts of BRCP covered activities, a single large project completed in the Plan Area in 2008, the Highway 149 improvement project, had mitigation costs that totaled approximately \$15 million.

10.3.3.2 Conservation Component BRCP Implementation Cost Estimate

Total conservation component costs for BRCP implementation over the 50-year BRCP implementation period are estimated to be \$238.1 million in 2011 dollar terms (Table 10–8 and Figure 10–4, *Summary of Conservation Component Implementation Costs by Cost Category* [see separate file]). These costs are distributed over the 50-year implementation as shown in Figure 10–5, *Total Conservation Component Implementation Costs by Implementation Period* (see separate file). These costs address the implementation of conservation actions that contribute to the conservation of natural communities and the conservation and recovery of covered species and do not include costs for avoiding, minimizing, and mitigating impacts of the covered activities. As shown in Table 10–8, *Summary of BRCP Conservation Component Implementation Costs by Cost Category* and Figure 10–4, the total estimated conservation component cost over 50 years includes approximately \$181.2 million to implement the conservation measures, representing 76 percent of costs of the BRCP conservation component. Protecting 59,399 acres of natural communities (CM1, Acquire Lands) requires the largest investment, with an estimated cost of approximately \$152.7 million (see Appendix F). Consequently, BRCP conservation component costs are highest during the second and third decades of implementation when the majority of conservation lands are assumed to be acquired (Figure 10–5).

Table 10–8. Summary of BRCP Conservation Component Implementation Costs by Cost Category¹

Cost Category	Conservation Costs by Implementation Period						Average Annual Cost
	Years 1–10	Years 11–20	Years 21–30	Years 31–40	Years 41–50	Total	
Conservation measures	\$22,456,000	\$39,768,000	\$52,737,000	\$44,119,000	\$22,110,000	\$181,190,000	\$3,624,000
Environmental compliance	\$331,000	\$489,000	\$532,000	\$288,000	\$144,000	\$1,783,000	\$36,000
Monitoring and other surveys	\$1,188,000	\$1,830,000	\$2,694,000	\$2,804,000	\$2,388,000	\$10,904,000	\$218,000
Administration and Management	\$4,168,000	\$4,553,000	\$4,303,000	\$4,303,000	\$4,303,000	\$21,630,000	\$433,000
Changed circumstances	\$204,000	\$423,000	\$597,000	\$642,000	\$615,000	\$2,480,000	\$50,000
Endowment for Post-BRCP implementation	\$2,615,000	\$4,509,000	\$5,992,000	\$4,947,000	\$2,087,000	\$20,149,000	\$403,000
Total	\$30,962,000	\$51,571,000	\$66,854,000	\$57,101,000	\$31,646,000	\$238,135,000	\$4,763,000

¹ Discrepancies in total values due to rounding. Cost estimates are rounded to the nearest \$1,000.

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