East Contra Costa County HCP / NCCP Mitigation Fee Audit and Nexus Study

Draft Report

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June 2017

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EXECUTIVE SUMMARY

The purpose of this report is to present the findings, conclusions, and recommendations of an audit of mitigation fees that partially fund the *East Contra Costa Habitat Conservation Plan and Natural Community Conservation Plan* (the Plan). The purpose of this audit is to fulfill the requirements of the periodic audit requirements of the Plan. The audit also provides the basis for findings required by the Mitigation Fee Act (MFA) related to the mandatory five-year review and any action establishing, increasing, or imposing a fee (commonly referred to as a "nexus analysis").

Revenue sources to fund estimated Plan costs during the 30-year permit term include four types of mitigation fees:

- Development Fee
- Wetland Mitigation Fee
- Rural Infrastructure Fee
- Temporary Impact Fee.

Covered activities that cause permanent impacts pay the development fee or rural infrastructure fee depending on location (inside or outside the Urban Development Area or "UDA"). Covered activities that cause temporary impacts pay the temporary impact fee regardless of location. All projects that cause impacts on aquatic land cover types pay the wetland mitigation fee in addition to the applicable development or rural infrastructure fee. **Table E.1** summarizes how the four types of mitigation fees are applied to covered activities based on location and type of impact.

Table E.1: Application of Mitigation Fees to Covered Activities

Type of Impact	Location of Impact	
	Inside UDA	Outside UDA
Permanent	• Development fee • Wetland mitigation fee (if applicable)	• Rural infrastructure fee • Wetland mitigation fee (if applicable)
Temporary	• Temporary impact fee (plus temporary wetland mitigation fee if applicable)	

Note: "UDA" is the urban development area.

This audit represents a significant turning point for implementation of the 2006 Plan. For the first time, this audit includes funding for post-permit term

costs in perpetuity. Furthermore, this development of the funding plan is occurring five years prior to when it is required by the Plan.

Funding for post-permit term costs is required by the Plan but the Plan allowed the obligation to be deferred until year 15 of implementation, or when half of the impacts allowed under the permit occur, whichever comes first. This audit identifies available funding to provide the endowment with an opening balance. Combined with revenue contributions through year 30 from mitigation fees and possibly other funding sources, the endowment would grow with re-invested earnings. Following year 30 the endowment would be of a size sufficient to fully fund post-permit management and monitoring costs in perpetuity with adjustments for inflation.

The results of the audit in terms of a revised development fee schedule are compared to current adopted fees in **Table E.2**. The development fee is also the basis for the rural infrastructure and temporary fees so the same trends would apply to those fees as well. The "Cities/County" fees are imposed by Permittees (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. The "Conservancy" fees reflect the results of the 2013 audit and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee. Most covered activities are currently paying the "Cities/County" fee.

Table E.2: Development Fee Comparison

Zone	Current Fee (2017)		Fee Audit (2017)	Fee Audit Compared To:	
	Cities/ County	Conserv-ancy		Cities/ County	Conserv-ancy
Zone 1	$14,711	$ 13,491	$14,078	(4.3%)	4.4%
Zone 2	$29,423	$ 26,983	$28,156	(4.3%)	4.3%
Zone 3	$ 7,356	$ 6,746	$ 7,039	(4.3%)	4.3%

Note: "Cities/County" fees are imposed by Permittees (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. "Conservancy" fees reflect the results of the 2011 and 2013 audits and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee. Sources: Table 6.3.

As shown in the table, the recommended development fee, which includes necessary funding for the endowment, is about four percent higher than current fees imposed directly by the Conservancy, and four percent lower than fees currently imposed by participating cities and the County.

Required future revenue contributions to the endowment represent about 20 percent of total remaining Plan costs for years 10-30. Current development fees require only a modest adjustment despite this additional cost because of cost savings over the 30-year permit term. These cost savings come primarily from the preserve management and maintenance cost category (see Chapter 3). Such savings were anticipated by the 2006 Plan as a source of funding for the endowment.

For the wetland mitigation fee the results of the audit are compared to the fees in the original Plan and the current adopted 2017 fees in **Table E.3**. The wetland mitigation fee is also the basis for the wetland mitigation component of the temporary fee so the same trends would apply to the wetland component of that fee as well.

Table E.3: Wetland Mitigation Fee Comparison

Land Cover Type		Current Fee (2017)		Fee Audit (2017)	Fee Audit Compared To:	
		Cities/ County	Conserv-ancy		Cities/ County	Conserv-ancy
Riparian	per acre	$ 76,433	$ 98,978	$ 90,039	18%	(9%)
Perennial Wetland	per acre	$104,593	$145,423	$136,456	30%	(6%)
Seasonal Wetland	per acre	$226,617	$337,101	$319,330	41%	(5%)
Alkali Wetland	per acre	$214,549	$340,512	$322,820	50%	(5%)
Aquatic (Open Water)	per acre	$113,979	$184,474	$175,719	54%	(5%)
Aquatic (Open Water)	per acre	$ 57,660	$ 92,237	$ 87,860	52%	(5%)
Slough / Channel	per acre	$130,070	$134,428	$125,463	(4%)	(7%)
Streams (<=25 ft. wide)	per linear foot	$ 623	$ 376	$463	(26%)	23%
Streams (>25 ft. wide)	per linear foot	$ 939	$ 564	$695	(26%)	23%

Note: "Cities/County" fees are imposed by Permittees (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. "Conservancy" fees reflect the results of the 2011 and 2013 audits and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee.

Sources: Table 5.2.

Wetland mitigation fees imposed per acre by the Conservancy decline compared to current fees because of a more detailed approach to the use of inflation indices in this audit versus a more general (and appropriate) approach used for the annual fee adjustments. Fees imposed by the cities and the County increase primarily because the cities and the County have not yet adopted the revised rates developed by the 2013 audit.

1. INTRODUCTION

The purpose of this report is to present the findings, conclusions, and recommendations of an audit of mitigation fees that partially fund the *East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan* (the Plan). This introduction provides background on the Plan and the Mitigation Fee Act (MFA), the state enabling statute for mitigation fees. This chapter also describes the purpose and scope of this audit and explains the general approach taken to complete the audit.

The purpose of this audit is to fulfill the requirements of the periodic audit requirements of the Plan.[1] The audit also provides the basis for findings required by the MFA related to any action establishing, increasing, or imposing a fee.

Background

The Plan was completed in 2006 after an extensive planning process initiated in 1999 that built on prior efforts begun in 1995.[2] The Plan enables the protection of natural resources in Eastern Contra Costa County while streamlining the environmental permitting process for impacts on endangered species covered by the Plan. Adoption of the Plan allowed state and federal wildlife agencies to issue various permits for a 30-year term (the permit) allowing the incidental take of endangered species by projects and activities covered by the Plan. Covered activities include all ground- or habitat-disturbing activities, for example, urban development projects, public infrastructure projects, and ongoing infrastructure maintenance activities. Implementation of the Plan preserves specified natural lands in eastern Contra Costa County in perpetuity (the preserve system) to mitigate the impacts of covered activities on endangered species and contribute to their recovery.

The five local agencies responsible for implementing portions of the Plan that relate to the development entitlement process are the County of Contra Costa and the cities of Brentwood, Clayton, Oakley, and Pittsburg. The City of Antioch chose not to participate in the Plan and impacts within that city's boundaries are not covered by the Plan. The five participating local agencies

[1] Jones and Stokes, "East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan", prepared for the East Contra Costa County Habitat Conservation Plan Association (hereafter referred to in footnotes as "2006 Plan"), p. 9-31.

[2] 2006 Plan, Chapter 1, pp. 1-1 to 1-2.

formed a joint powers authority in 2007 known as the East Contra Costa County Habitat Conservancy (the Conservancy) to perform the many implementation duties assigned to the "Implementing Entity" by the Plan.

The Conservancy's fiscal year is from January 1 to December 31. The first (partial) year of operation was 2007. The Conservancy began collecting mitigation fees in 2008. Consistent with the financial planning presented in Chapter 9 of the Plan, 2007 is year 0, 2008 is year 1, 2016 is year 9, and the permit term would end in 2037, year 30. This audit is completed in year 10 (2017) as required by the Plan, and is based on data as of December 31, 2016 (year 9). The next audit is required in year 15, or 2022.

Plan Mitigation Fees

Revenue sources to fund estimated Plan costs during the 30-year permit term include four types of mitigation fees:

- Development Fee
- Wetland Mitigation Fee
- Rural Infrastructure Fee
- Temporary Impact Fee.

The type of mitigation fee paid by a covered activity depends on the location of the activity and the type of impact ("impact" and "covered activity" are used interchangeably in this report). Location depends on whether the impact is located inside or outside the urban development area (UDA). The UDA is defined as (1) the County of Contra Costa urban limit line, or (2) the boundaries of the four cities implementing the Plan whichever is larger.[3] Applicants can dedicate land for the preserve system in lieu of paying the fee subject to approval by the Conservancy.

Covered activities that permanently remove habitat cause permanent impacts and pay the development fee or rural infrastructure fee, depending on location (inside or outside the UDA). Covered activities that temporarily disturb habitat cause temporary impacts pay the temporary impact fee regardless of location. All projects that cause impacts on aquatic land cover types (wetlands, ponds, and streams) pay the wetland mitigation fee in addition to the applicable development or rural infrastructure fee. **Table 1.1** summarizes how the four types of mitigation fees are applied to covered activities based on location and type of impact.

[3] 2006 Plan, Chapter 2, pp. 2-16 to 2-18, Figure 2-3. Excludes City of Antioch that is not covered under the Plan.

Table 1.1: Application of Mitigation Fees to Covered Activities

Type of Impact	Location of Impact	
	Inside UDA	Outside UDA
Permanent	• Development fee • Wetland mitigation fee (if applicable)	• Rural infrastructure fee • Wetland mitigation fee (if applicable)
Temporary	• Temporary impact fee (plus temporary wetland mitigation fee if applicable)	

Note: "UDA" is the urban development area.

Audit Objectives and Scope

The objectives of this audit are defined by the requirements of the Plan. The audit also provides the basis for findings required by the MFA related to the mandatory five-year review and any action establishing, increasing, or imposing a fee.

Periodic Audit Requirements of the Plan

The Plan calls for periodic audits of the mitigation fees in years 3, 6, 10, 15, 20, and 25. The purpose of the audit is "[t]o ensure that the fees generated by development and other covered activities are adequately covering their share of Plan costs." [4] The Plan calls for the audit to be completed by an outside independent financial auditor.

Audits must compare current actual costs to the cost assumptions used in the current mitigation fee calculation. The audit must review actual land acquisition costs as well as costs to operate, manage, and maintain the preserve system. The audit must recalculate fees based on this cost review to maintain mitigation fee funding as a share of total Plan costs based on the fair share allocation determined by the Plan.

In between periodic audits the Plan calls for automatic annual adjustments to the Plan's mitigation fees. Annual adjustments are based on two inflation indices weighted by the appropriate Plan cost component reflected by each index.[5] A real estate cost index is used to update the land acquisition cost component reflecting more than half of total plan costs. The Consumer Price Index is used to update the share of fees funding the balance of Plan costs.

[4] 2006 Plan, Chapter 9, p. 9-31.

[5] 2006 Plan, Chapter 9, p. 9-30.

Mitigation Fee Act Requirements

The mitigation fees collected pursuant to the Plan are authorized by California law under the Mitigation Fee Act (MFA) found in Sections 66000 through 66025 of the *California Government Code*. This audit provides a revised fee schedule based on updated cost data that proposes increasing the existing fee amount. Consequently, this audit must make the following four "reasonable relationship" or "nexus" findings that the MFA requires when increasing a fee:

> *Sec. 66001(a) In any action establishing, increasing, or imposing a fee as a condition of approval of a development project by a local agency, the local agency shall do all of the following:*
>
> *(1) Identify the purpose of the fee.*
>
> *(2) Identify the use to which the fee is to be put. If the use is financing public facilities, the facilities shall be identified. That identification may, but need not, be made by reference to a capital improvement plan as specified in Section 65403 or 66002, may be made in applicable general or specific plan requirements, or may be made in other public documents that identify the public facilities for which the fee is charged.*
>
> *(3) Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.*
>
> *(4) Determine how there is a reasonable relationship between the need for the public facility and the type of development on which the fee is imposed.*

The following finding is not required though this audit makes this finding as well:

> *Section 66001(b) In any action imposing a fee as a condition of approval of a development project by a local agency, the local agency shall determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.*

Each of these findings are made in association with the analysis of each fee in Chapters 5, 6, and 7.

Post-Permit Term Costs

Chapter 9 of the Plan describes the funding sources and estimates the total revenue needed to fully fund Plan costs during the 30-year permit term.

Following the end of the permit term the preserve system will need to be managed and monitored in perpetuity to comply with the permit. Chapter 9 did not include a funding plan for post-permit term costs though it did identify a range of potential funding sources.[6] The Plan requires the Conservancy to develop a detailed plan for long-term funding before half of all authorized impacts occur (measured in acres) or at the end of year 15 of implementation, whichever occurs first.

For the first time in the Plan's history, this audit provides an updated fee schedule and funding plan that fully funds post-permit term costs, in advance of the year 15 deadline. Post-permit term costs are funded with an ongoing share of development fee revenue deposited into an endowment account. The endowment account would be actively managed in accordance with state law. Investment earnings would be reinvested and no withdrawals made through the end of the permit term in year 30. At that time, the endowment account balance is projected to be sufficient to generate a self-sustaining amount equal to annual post-permit term costs in perpetuity and adjusted for inflation.

Objectives and Scope

The findings required by the MFA described above are similar in intent to the Plan's objectives for periodic audits. Both suggest the need to update the fee amount based on recent data and confirm the role of fee revenues in a reasonable funding plan. To address both the periodic audit requirements of the Plan and the findings required by the MFA, the objectives and scope of this audit are:

1. Update cost assumptions underlying the mitigation fees
2. Recalculate fee amounts
3. Affirm the reasonable relationship between new development and the need for the fee, the amount of the fee, and the use of fee revenues
4. Update the funding plan including sources and amounts of anticipated non-fee revenue
5. Incorporate post-permit term costs.

This audit uses the most recently available data on financial transactions and covered activities through December 31, 2016.

This audit is not a comprehensive audit of the Conservancy's finances. The Conservancy separately has an annual financial audit conducted by an outside auditor. This report utilizes this audited financial data. The financial and other data compiled for this audit represents a level of accuracy sufficient to

[6] 2006 Plan, Chapter 9, pp. 9-40 to 9-42 and Table 9-9.

recalculate the mitigation fees and update the funding plan based on the five-year audit and reasonable relationship requirements of the MFA.

Organization of the Audit

Covered activities (impacts) under the Plan for years 1-9 are summarized in Chapter 2 as well as remaining impacts through the 30-year permit term. The update to the cost model used to estimate implementation costs of the Plan is presented in Chapter 3. Chapter 4 describes post-permit term costs and funding of an endowment.

Updates to the four fees are presented in Chapters 5 through 7. The wetland mitigation fee is calculated independently of the other fees based on estimated costs to restore/create wetlands in proportion to the amount of impact. The development fee is calculated based on urban development's fair share of total Plan costs net of wetland mitigation costs. Thus, the wetland mitigation fee analysis is presented in Chapter 5 and the development fee analysis is presented in Chapter 6. The other two fees, rural infrastructure and temporary impact, use the same rates as the development and wetland mitigation fees applied to rural infrastructure impacts and temporary impacts, respectively. Thus, these fees require no additional fee calculation. These fees are discussed in Chapter 7.

The updated 30-year funding plan based on revised cost and revenue estimates is presented in Chapter 8.

2. IMPACTS

This section of the audit describes the impacts that have occurred to date during the years 1-9 of the Plan (2008-2016). This section also identifies the remaining impacts to be accommodated by the Plan's implementation based on the total amount of impacts covered by the Plan.

The Plan uses the amount of acreage from urban development and rural infrastructure projects and activities as the primary unit of measurement for impacts. The Plan uses linear feet to measure stream impacts subject to the additional wetland mitigation fee.

Urban Development Area (UDA)

The boundaries of the UDA are subject to change over time based on local land use policy decisions by the five agencies implementing the Plan. Thus, boundary changes could lead to changes in the land use capacity for, and eventual amount of, urban development.

To accommodate the uncertainty regarding the amount of urban development that would be covered under the Plan, the Plan uses two scenarios to "book end" the potential urban development levels:

- The initial UDA is defined by the County of Contra Costa urban limit line and the boundaries of the cities of Brentwood, Clayton, Oakley, and Pittsburg existing at the time the Plan was adopted.[7]
- The maximum UDA is the maximum development capacity for urban development under the terms of the permit. Although boundaries are not defined development capacity considers areas outside the initial UDA proposed for future development in the general plans of Brentwood, Clayton, Pittsburg, and the County. The maximum development capacity is consistent with the biological goals and objectives of the Plan.

The urban development area covered under the Plan at the end of the permit term could fall anywhere in the range defined by the initial urban development area and the maximum urban development area. The Plan does not define the precise boundaries of the maximum UDA because the ultimate boundaries depend on local land use decisions occurring during the permit term. Rather, the Plan defines the maximum number of acres under the maximum UDA covered under the Plan. The conservation requirements

[7] Excluding some areas within the County urban limit line surrounding the Byron Airport. See 2006 Plan, p. 2-17.

of the Plan are greater for the maximum UDA compared to the initial UDA to accommodate the greater impacts under the maximum UDA scenario.

Development Fee Zones

The development fee is implemented based on three fee zones defined by the Plan.[8] A map of the zones is provided in Figure 9-1 of the Plan. The zones represent varying levels of impacts on covered species and natural habitats caused by urban development and rural infrastructure activities and projects. The development fee is lowest in the zone where development would have the least impacts and highest in the zone where development would have the greatest impacts. The zones generally correspond to the dominant land cover type and habitat and open space value. Below is a summary of the zones:

- Zone I: Cultivated and disturbed lands, primarily areas in agricultural use and some undeveloped areas within existing urban areas.
- Zone II: Natural areas where lands are dominated by natural land cover types.
- Zone III: Small vacant lots (less than 10 acres) within the initial UDA.

The lowest development fee is in Zone III because the habitat and open space value is lowest on vacant land within existing developed areas. As the Plan states in Chapter 4, "[d]evelopment of these areas will result in loss of open space and some habitat values, but impacts will be less than those in Zone I and substantially less than those in Zone II."[9] An acre of permanent impacts in Zone III is given a weight of **one** for the purposes of allocating the fair share of total plan costs to the development fee.

The highest fee is in Zone II because this predominantly natural area has the highest habitat value. The dominant land cover type is annual grassland that covers 34 percent of the land included in the Plan's inventory area, and the greatest impacts in Zone II are in this land cover type. Chapter 4 of the Plan references the importance of annual grassland throughout its detailed analysis of impacts on covered species and critical habitats.[10] An acre of permanent impacts in Zone II is given a weight of **four** for the purposes of allocating the fair share of total plan costs to the development fee (four times the weight of impacts in Zone 1).

[8] 2006 Plan, Chapter 9, pp. 9-20 to 9-21.

[9] Ibid.

[10] 2006 Plan, Chapter 4, pp. 4-14 to 4-22.

The amount of the Zone I fee is between the fees in the other two zones because cultivated and other disturbed uses have greater habitat value than vacant lots but less value than natural areas. Chapter 4 of the Plan includes several findings to support this approach.[11] An acre of permanent impact in Zone I is given a weight of **two** for the purposes of allocating the fair share of total plan costs to the development fee (twice the weight of impacts in Zone 1 and half the weight of impacts in Zone II).

The fee zone map in the Plan (Chapter 9, Figure 9-1) is the sole determination of the fee zone applicable to a project or other covered activity.[12] The zones represent predominant land cover types, as described above, and the relative level of impact per acre from covered activities within a zone. Individual parcels within a zone will have greater or lesser impact on covered species, natural communities, and open space. An individual parcel in zone A, for example, may have characteristics like land cover types in zone B. However, the parcel's location adjacent to lands within zone A combined with the benefits of contiguous open space to meeting the Plan's objectives, provides reasonable justification to include the parcel in zone A. The mapping of the zones was completed at a level of detail sufficient to provide a reasonable relationship between all land within a specific zone and the relative weight of impacts assigned to that zone.[13]

Summary of Impacts to Date

Impacts to date (2008-2016) are shown in **Table 2.1**. As explained in Chapter 1 (see Table 1.1) impacts fees were paid on these covered activities (impacts) as follows:

- Permanent impacts within the UDA paid the development fee on covered activities based on the three fee zones.
- Rural infrastructure impacts paid the rural infrastructure fee.
- Temporary impacts paid the temporary impact fee.
- Impacts to aquatic land cover types paid the wetland mitigation fee in addition to the applicable development, rural infrastructure, or temporary impact fee.

[11] 2006 Plan, Chapter 4, pp. 4-6, 4-15, and 2006 Plan, Appendix D, *Species Profiles*.

[12] 2006 Plan, Chapter 9, p. 9-20.

[13] See, for example, 2006 Plan, Chapter 3, pp. 3-2 to 3-5.

Table 2.1: Covered Activities, Years 1-9 (2008-2016)

	Land Conver-sion *(acres)*	Aquatic Impacts[1]	
		Wetlands *(acres)*	**Streams** *(linear feet)*
Permanent Impacts			
Urban Development Area (UDA)			
Zone 1	411.99		
Zone 2	34.19		
Zone 3	12.46		
Subtotal UDA	458.64		
Rural Infrastructure (outside UDA)[2]	73.06		
Total Land Conversion	531.70		
Aquatic			
Wetlands		1.83	
Streams (linear feet)			923.31
Temporary Impacts			
Land Conversion	429.30		
Wetlands		5.99	
Streams (linear feet)			4,517.70

[1] Aquatic impacts (wetlands and streams) are included in land conversion impacts. Aquatic impacts pay wetland fees in addition to land conversion fees.

[2] Covered activities occurring outside the UDA could occur in either zones 1 or 2. Includes rural road projects as shown in Table 9-6 of the 2006 Plan, plus rural infrastructure projects and activities, and activities within the preserve system (see Sections 2.3.2 through 2.3.4 of the 2006 Plan).

Sources: Appendix A, Table A.1.

See **Table A.1** in **Appendix A** for a detailed list of covered activities to date.

Remaining Permanent Impacts Under the Plan

The Plan allows for a fixed amount of permanent impacts within the UDA and from rural infrastructure. Permanent impacts are used to calculate and update the development fee. The remaining permanent impacts allowed under the Plan in years 10-30 are summarized in **Table 2.2** by subtracting impacts to date (Table 2.1) from the total impacts allowed for the 30-year permit term. The table applies the weighting factors by zone discussed above. The result is the total acreage of permanent impacts with the UDA remaining under the Plan weighted by the relative impact in each zone. This total for the maximum and initial UDAs is used to allocate costs to the development fee in Chapter 5.

Table 2.2: Permanent Impacts (acres)

	Zone 1	Zone 2	Zone 3	Subtotal	Share	Outside UDA	Total[1]	Share
Permit Term Limits (Years 1-30)								
Initial UDA	6,198	2,306	166	8,670	100.0%	1,126	9,796	100.0%
Maximum UDA	7,507	4,180	166	11,853	100.0%	1,126	12,979	100.0%
Actual Impacts to Date (Years 1-9, through 2016)								
Initial UDA	412	34	12	458	5.3%	73	531	5.4%
Maximum UDA	412	34	12	458	3.9%	73	531	4.1%
Remaining Impacts (Years 10-30)								
Initial UDA	5,786	2,272	154	8,212	94.7%	1,053	9,265	94.6%
Maximum UDA	7,095	4,146	154	11,395	96.1%	1,103	12,448	95.9%
Impact Weighting Factor[2]	*2*	*4*	*1*					
Permit Term Limits - Equivalent Acres (Years 1-30)						Not Available[3]		
Initial UDA	12,396	9,224	166	21,786	100.0%			
Maximum UDA	15,014	16,720	166	31,900	100.0%			
Actual Impacts to Date - Equivalent Acres (Years 1-9, through 2016)								
Initial UDA	824	136	12	972	4.5%			
Maximum UDA	824	136	12	972	3.0%			
Remaining Impacts - Equivalent Acres (Years 10-30)								
Initial UDA	11,572	9,088	154	20,814	95.5%			
Maximum UDA	14,190	16,584	154	30,928	97.0%			

Notes: "UDA" is the urban development area.

The permit term limits used to calculate the initial fees shown in Chapter 9, Table 9-4, and Appendix H of the 2006 Plan are revised to control to the totals in Chapter 4, Tables 4-2 and 4-3, of the 2006 Plan (14 acres less for the Initial UDA and 26 acres less for the Maximum UDA). These adjustments are made to zone 1 though they could be allocated to any zone within the UDA.

[1] Table 4-3 in Chapter 4 of the 2006 Plan appears to have a mathematical error for the maximum UDA permit limit, showing 13,029 acres instead of 12,979.

[2] Weighting factor reflects relative impacts by zone (see 2006 Plan, Appendix H). Equivalent acres for impacts outside the UDA not calculated because impacts occur in both zones 1 and 2.

[3] The 2006 Plan did not identify the location of all covered activities occurring outside the UDA by zone, except for rural road projects (see Table 9-6 of the 2006 Plan). Includes rural infrastructure projects and activities, and activities within the preserve system (see Sections 2.3.2 through 2.3.4 of the 2006 Plan).

Sources: 2006 Plan, Tables 4-2 and 4-2, Table 9-4 (revised), and Appendix H, Table 1; Table 2.1.

Table 2.2 shows 12,979 acres for the permit limit under the maximum UDA. Table 4-3 in the 2006 Plan shows 13,029. There appears to be an addition error in the Table 4-3 that included an extra 50 acres. These 50 acres are excluded in Table 2.2. The Conservancy should consult with the Permittees and the wildlife agencies to resolve this issue. The difference has no impact on any of the analyses for this audit, including the cost model update, the mitigation fee calculations, or other revenue estimates developed for the funding plan.

Impacts to aquatic land cover types (wetlands, ponds, and streams) are shown in **Table 2.3**. This audit contains the same adjustment made by the 2013 audit to total acres of restoration/creation assumed in the 2006 Plan

cost model to be consistent with Tables 5-16 and 5-17 in Chapter 5 of the Plan. Estimated compensatory restoration/creation acreage for seasonal wetlands under the maximum UDA scenario was adjusted to match the 2:1 mitigation ratio applied to the acres of impact shown in the tables. Also, consistent with Plan assumptions, a 30 percent reduction was made to the estimate of compensatory restoration/creation acreage (not contribution to recovery acreage) for the perennial, seasonal, and alkali wetlands to reflect overestimates due to mapping of these areas.[14]

Table 2.3: Wetland Impacts

	Estimated Impacts (Years 1-30)[1] *(acres or linear feet)*		Actual Wetland Impacts (Years 1-9)[2]	Estimated Impacts (Years 10-30) *(acres or linear feet)*	
	Initial UDA	Maximum UDA		Initial UDA	Maximum UDA
Impacts Based on Acres					
Riparian	30.00	35.00	1.08	28.92	33.92
Perennial Wetland	22.20	22.50	0.07	22.13	22.43
Seasonal Wetland	14.00	18.67	0.38	13.62	18.29
Alkali Wetland	9.33	10.33	0.14	9.19	10.19
Pond	7.00	8.00	0.10	6.90	7.90
Aquatic (Open Water)	12.00	12.00	-	12.00	12.00
Slough / Channel	72.00	72.00	0.07	71.93	71.93
Subtotal (acres)	166.53	178.50	1.83	164.70	176.67
Impacts Based on Linear Feet					
Streams (<=25 ft. wide)	21,120	26,400	677	20,443	25,723
Streams (>25 ft. wide)	3,168	4,224	246	2,922	3,978
Subtotal (linear feet)	24,288	30,624	923	23,365	29,701

Note: "UDA" is the urban development area.
Impacts includes wetland impacts outside the UDA because these impacts are counted against the estimates of permanent impacts in the 2006 Plan (see Tables 5-16 and 5-17).

[1] Discrepancies in the 2006 Plan in Appendix G, Wetland Fee Worksheet are corrected to be consistent with Chapter 5, Tables 5-16 and Table 5-17. Perennial, Seasonal, and Alkali wetland impacts reduced by 70 percent to account for overestimates in mapping analysis (see Tables 5-16 and 5-17, footnote 2, and the original Wetland Fee Worksheet in the Plan, footnotes 12 and 13), Stream impacts are added that were not included in the Wetland Fee Worksheet.

Source: 2006 Plan, Tables 5-16 and 5-17; Appendix A, Table A.1.

[14] For seasonal wetlands, the total restored acreage for the initial [maximum] UDA scenario equals 45.2 [53.6] acres based on: (42 [56] impact acres x 2:1 mitigation ratio x 30 percent adjustment for mapping overestimate) + 20 acres contribution to recovery. See Tables 5-16 and 5-17 and Appendix G of the Plan.

3. COST MODEL

This chapter presents a summary of the updated cost models for the 30-year permit term. As shown in Appendix G of the Plan a separate cost model is used for the initial and maximum UDAs to account for the difference in preserve system size and other differences in the conservation requirements of the Plan. The two models are identical in structure. The difference in cost between the two models is primarily related to the effect of different land acquisition and restoration requirements for the preserve system under each scenario.

General Approach

The cost model was updated based on provisions in the Plan for periodic audits. The original model is documented in Appendix G of the Plan. For this 2017 update, cost model revisions were made to the latest version of the model developed for the 2013 audit. The model for each scenario (initial and maximum UDA) includes approximately 30 pages of linked spreadsheets (see **Appendix C and Appendix D**). Total costs for the permit term are the sum of actual costs to date (through December 31, 2016) and remaining costs through the end of the permit term. All costs are expressed in 2016 dollars to support calculation of the mitigation fees.

Actual costs through December 31, 2016 were adjusted to 2016 dollars using changes in the Conservancy's mitigation fee schedule, thus replicating the same index used to reflect inflation in Plan costs. The Conservancy's fees are adjusted annually based on published price indices and periodically based on prior audits (the 2011 and 2013 audit).[15]

Remaining costs through the end of the permit term were updated based on recent cost experience and application of appropriate inflation indices to assumptions in the 2013 audit model, as explained in more detail in the following section of this chapter.

The models provide budgets for the following nine cost categories related to Plan implementation:

1. Program administration
2. Land acquisition
3. Planning and design

[15] See the 2006 Plan, Chapter 9, pp. 30-31 and Table 9-7, and Appendix F, Table F.1.

4. Habitat restoration/creation
5. Environmental compliance
6. Preserve management and maintenance
7. Monitoring, research, and adaptive management
8. Remedial measures
9. Contingency.

A separate endowment model was built for this audit and is described in the following chapter (Chapter 4).

Land Acquisition Costs

Land acquisition is the Plan's largest cost category representing about 64 percent of total costs excluding endowment costs. Substantial effort was expended during the audit to update costs to reflect current market conditions and recent Conservancy land acquisition experience.

For this audit, Conservancy staff prepared an updated acquisition model for both the initial and maximum UDA scenarios. The model evaluates the characteristics of potential preserve land against preserve targets and acquisitions that have already occurred. The 2006 plan indicates a range of total acreage needed to achieve the various habitat acquisition requirements of the Plan. Total acquisition costs assumed in the cost model for the Plan and in the 2013 audit were based on a mid-point estimate. The improved mapping used for this audit found that the number of acres needing to be acquired would likely be at the high end of the range rather than the mid-point. Acquisition costs for this audit are based on acquiring about 15 percent more preserve acres in both the initial and maximum UDA scenarios than was the case in 2006 and 2013.

The Conservancy, working with East Bay Regional Park District, has been very successful in acquiring preserve system lands since the Plan's implementation. Through year 9 (2016) the Conservancy has acquired approximately 10,987 acres, or 36 and 45 percent and of the preserve system required under the maximum and initial UDA scenarios, respectively. These totals exclude (1) acquired lands that cannot be credited to the preserve system because of existing conservation easements mitigating habitat impacts that occurred prior to Plan adoption[16] and (2) parts of acquired parcels that lie outside plan acquisition zones.

A database of over 90 land transactions in East Contra Costa County, most within the past five years, was compiled from a variety of sources to estimate

[16] Unless those pre-Plan impacts were also counted against the Plan's permit term limits.

costs per acre for future preserve system acquisitions. This database included 32 East Bay Regional Park District acquisitions (most of which were performed in partnership with the Conservancy), plus acquisitions by Save Mount Diablo (local nonprofit land trust organization), the Contra Costa Water District, and land transactions identified in the County Assessor's database. Land costs for developable parcels within the urban limit line that are part of the Conservancy's acquisition strategy were updated based on current housing values. Detailed data on the transactions used to update the cost model land cost factors are provided in **Appendix B**.

As shown in **Table B.2** in Appendix B estimated land costs per acre have generally increased since 2012 when land prices reflected the fall off in demand due to the Great Recession. Since then, prices for larger parcels outside the urban limit line have increased between 20 and 50 percent, and prices for smaller parcels 10 acres or less have decreased about 20 percent. The fluctuation in prices for smaller open space parcels is because there are notably fewer transactions of this type and the characteristics of each parcel are more variable. Inside the urban limit line, where a small fraction of the acquisition will occur and where prices more closely track changes in the housing market, estimated land costs have increased about 70 percent.

Consistent with changes made for the 2013 audit, due diligence costs are estimated based on a flat three percent charge on land acquisition costs and pre-acquisition surveys are a Conservancy staff cost. There is no contingency applied to land acquisition costs. Total remaining land acquisition costs to meet preserve system requirements were evenly spread across the remaining 21-year period of the 30-year permit term.

Habitat Restoration/Creation Costs

Habitat restoration/creation is the second largest cost category of Plan implementation, representing 12 percent of total costs excluding endowment costs. Unit costs (costs per acre) for restoration of specific habitats are the basis for the wetland mitigation fee.

The most significant component of habitat restoration/creation costs is contract services to restore or create habitat across nine separate land cover types. The 2013 audit discovered that unit cost (costs per acre) assumptions in the 2006 Plan were significantly different than the Conservancy's actual experience through 2012. Based on a detailed review of actual restoration projects completed by the Conservancy and other agencies, the 2013 audit significantly increased unit costs for most land cover types.

For the current audit, we reviewed cost data for Conservancy restoration projects undertaken since 2012. Based on this review, unit costs in the 2013 audit for seven of the nine land cover types are updated by applying the

California Construction Cost Index developed by the California Department of General Services.[17] The remaining two land cover types (oak savanna and stream) are increased more than this inflation adjustment to reflect recent Conservancy cost experience and contractor experience on similar projects.

Unit costs for habitat restoration/creation construction are augmented by three types of soft costs:

- Construction-related costs including seven line items: plans and specifications, bid assistance, construction oversight, post-construction maintenance, environmental compliance, pre-construction surveys, and construction monitoring
- Conservancy staff and related costs
- Contingency.

Consistent with the 2013 audit, four of the construction-related cost line items (plans and specifications, bid assistance, construction oversight, and post-construction maintenance) are estimated as a percent of construction costs based on experience with how contractors structure their bids. Soft cost percentages remain the same as the 2013 audit except restoration plans and specifications costs are increased to account for the shift of restoration design preparation from the Planning and Design cost category, and construction oversight is increased from 7 to 10 percent to reflect more reliance on contractors than Conservancy staff positions in this cost category.

The remaining three line items (environmental compliance, pre-construction surveys, and construction monitoring) are estimated as dollar amounts per acre. These assumptions were updated for inflation.

Conservancy staff and related costs are updated based on current hourly costs per position and experience with allocation of staff time for habitat restoration/creation projects. Consistent with that experience, this update eliminates Conservancy senior scientist and technical support positions in restoration, showing these tasks as higher contractor costs for construction oversight, as noted above.

This audit eliminates the cost line items for vehicle purchase and vehicle fuel and maintenance that in prior models had been allocated between planning and design, restoration, and monitoring cost categories. These costs are included in the Conservancy staff overhead cost and contractor rates.

The contingency of 20 percent on habitat restoration/creation construction costs remain unchanged from the 2006 Plan and the 2013 audit. The contingency applies to habitat construction costs only and not soft costs or Conservancy staff costs. The contingency is higher than the five percent rate

[17] This index is based on building cost indices for San Francisco and Los Angeles published by the Engineering News-Record.

applied to other Plan implementation activities because of the high degree of cost variation and uncertainty associated with habitat restoration/creation projects.

Habitat restoration/creation mitigation unit costs for aquatic land cover types estimated for this audit are shown in **Table 3.1**. The cost for open water is the same as the cost for ponds because the Plan calls for open water impacts to be mitigated by the creation of ponds. The table includes two costs for stream restoration, one based on stream widths of 25 feet or less, and one based on steam widths of greater than 25 feet.

Updates to Other Cost Categories

Cost model changes to the other seven cost categories besides land acquisition and habitat restoration/creation are summarized in the following subsections.

Program Administration

The original 2006 model estimated staff costs based on direct salary costs plus benefits, and separately estimated overhead costs (human resources, information technology, office space, etc.). With the 2013 audit, Conservancy staff costs were budgeted based on a fully burdened hourly rate that includes benefits and all overhead costs and this audit maintains that approach. The staffing plan is updated to reflect experience with staff allocation by function and the ability to rely on fractions of a full-time employee. Other overhead costs such as travel, insurance, legal, and financial analysis and audits that are not included in Conservancy staff hourly rates are updated based on actual costs and projected needs.

Planning and Design

Based on current Conservancy practice, for the 2017 audit, the cost model eliminates Conservancy senior scientist staffing and to compensate increases contractor costs for management planning. Management planning costs anticipated by the Plan but not yet incurred are shifted to later in the permit period. Restoration planning costs are shifted to the Habitat Restoration/Creation cost category. Vehicle purchase, fuel, and maintenance costs are included in staff overhead cost and contractor rates.

Table 3.1: Wetland Mitigation Costs (2016$)

Cost Category	Cost Factor	Riparian (per acre)	Perennial Wetland (per acre)	Seasonal Wetland (per acre)	Alkali Wetland (per acre)	Pond (per acre)	Open Water (per acre)	Slough/ Channel (per acre)	Stream[2] (per linear foot)
Construction		$42,200	$68,800	$82,100	$83,100	$91,300	$91,300	$62,500	$234
Construction-related costs									
Plans, specs., allowance for remedial measures[1]	33%	13,926	22,704	27,093	27,423	30,129	30,129	20,625	77
Bid assistance[1]	1.5%	633	1,032	1,232	1,247	1,370	1,370	938	4
Construction oversight[1]	10%	4,220	6,880	8,210	8,310	9,130	9,130	6,250	23
Post-construction maint.[1]	10%	4,220	6,880	8,210	8,310	9,130	9,130	6,250	23
Environmental compliance[2,3]	$6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	21
Pre-construction surveys[2,4]	$1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	4
Construction monitoring[2,4]	$2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	10
Staff and related costs[2,5]	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	20
Subtotal		$81,599	$122,696	$143,245	$144,790	$157,459	$157,459	$112,963	$417
Contingency[1]	20%	8,440	13,760	16,420	16,620	18,260	18,260	12,500	47
Total Unit Cost		$90,039	$136,456	$159,665	$161,410	$175,719	$175,719	$125,463	$463
Adjustment Factor for Streams >25 Feet Wide									1.50
Total Unit Cost (Streams >25 feet wide)									$695

[1] Percentage applied to construction costs.

[2] Amount applied per acre of impact. Stream costs based on average of per acre costs as a percent of construction costs for all other aquatic land cover types.

[3] Based on CEQA, CWA 401, CDFG 1602, and other permit costs for "small" project, divided by two (assume a two-acre project). NHPA permit unlikely to be applicable.

[4] Cost model estimate divided by two (estimate based on a two-acre project).

[5] Midpoint of staffing costs per acre (all costs except construction and contractors) between initial and maximum UDA cost models for habitat restoration/creation cost category

Sources: Appendices C and D (Habitat Restoration/Creation tab).

Environmental Compliance

Based on actual Conservancy experience with the permitting process, this 2017 update reinstates an allocation of Conservancy program staff time for permitting. In addition, some legal services are allocated to this category because of the need for legal assistance with on-going regional wetland permitting anticipated through year 20. Contractor costs are increased based on the Employment Cost Index and permit fees are updated based on current fee schedules and calculators.

Preserve Management and Maintenance

The schedule of land under management continues to reflect the fact that the pace of acquisition exceeds actual mitigation and conservation targets. Current costs reflect land-banking of many acquired lands. Preserve management staffing is based on review of staffing patterns at Conservancy properties and other similar parkland units within the East Bay Regional Parks District (EBRPD) Interpretive Parklands Unit. Preserve management staff costs are based on EBRPD costs. Furthermore, in place of the detailed line item cost estimates for vehicles, equipment, materials, facilities and road maintenance, water pumping, weed management, pond maintenance, etc., this audit derives a cost factor per full-time equivalent (FTE) management staff to capture the wide range of equipment, materials and services required for land management on Conservancy properties. The factor is derived from analysis of spending in the Maintenance and Skilled Trades Department within the EBRPD Parks Operations Division.

Monitoring, Research, and Adaptive Management

Based on current Conservancy practice, for the 2017 audit, the model eliminates Conservancy senior scientist staffing and increases contractor costs for monitoring. Vehicle purchase, fuels, and maintenance costs are assumed to be included in staff overhead cost and contractor rates. Contractor costs are adjusted based on actual Conservancy cost for monitoring contractors.

Remedial Measures

The total cost for remedial measures is based on (1) a percent of total cost of habitat restoration/creation costs, (2) a cost per acre for remedial measures applied to a percent of total preserve system acres acquired, and (3) a lump sum cost for other remedial measures. No changes were made in these cost assumptions for this audit.

Contingency

Contingency costs reflect changes in other cost categories. The estimated rate remains at five percent and is applied to total Plan costs net of total land acquisition and total habitat restoration/creation costs.

Summary of Cost Model Results

Table 3.2 and **Table 3.3** summarize changes in total costs by cost category for the Plan for the initial and maximum UDA, respectively. The tables compare the results of this audit to the 2006 Plan costs and the prior 2013 audit. All amounts are updated to 2016 dollars using the same inflation index used to update actual Conservancy costs to date in the cost model. Total costs excluding wetland mitigation fee revenue are shown at the bottom of the table because changes to this amount directly affect the development fee (see Chapter 5).

Adjusted for inflation, total costs are in the range of 10 percent lower than costs in the 2013 audit for both the initial and maximum UDA scenarios. Similar results pertain for total costs excluding wetland mitigation fee revenue; costs used to calculate the development fee are eight percent lower than those in the 2013 audit for the initial UDA scenario and four percent lower for the maximum UDA scenario.

Trends in costs between this audit and the 2006 Plan, and this audit and the prior (2013) audit, are described below. All comparisons are in 2016 dollars as presented in Tables 3.2 and 3.3.

1. **Program administration:** Costs are higher than estimated for the 2006 Plan due to higher costs for (1) overhead support and benefits, (2) legal and financial analysis services, and (3) higher than anticipated costs to assist Participating Special Entities with the permitting process, offset by revenue from higher administrative charges and other development exactions. Costs are unchanged from the 2013 audit.
2. **Land acquisition:** Costs adjusted for inflation have not changed significantly from the 2006 Plan and the 2013 audit.
3. **Planning and design:** Total costs remain higher than in the 2006 Plan because of higher costs for overhead support and benefits than originally anticipated. Cost decline from the 2013 audit because (1) that audit assumed Conservancy technical staffing while this audit assumes more planning services are contracted out, and (2) this audit shifts restoration design costs to the habitat restoration/creation category.

Table 3.2: Cost Model Comparison – Initial Urban Development Area (2016 $)

Cost Category	2006 Plan	2013 Fee Audit	2017 Fee Audit	2017 Audit vs. 2006 Plan		2017 Audit vs. 2013 Audit	
Program Administration	$20,540,000	$26,690,000	$26,630,000	$6,090,000	30%	$(60,000)	(0%)
Land Acquisition	216,910,000	217,690,000	217,550,000	640,000	0%	(140,000)	(0%)
Planning and Design	6,960,000	10,300,000	7,810,000	850,000	12%	(2,490,000)	(24%)
Habitat Restoration/Creation	23,080,000	50,290,000	43,430,000	20,350,000	88%	(6,860,000)	(14%)
Environmental Compliance	2,650,000	3,720,000	3,640,000	990,000	37%	(80,000)	(2%)
Preserve Management & Maintenance	37,400,000	46,730,000	28,990,000	(8,410,000)	(22%)	(17,740,000)	(38%)
Monitoring, Research, & Adaptive Management	21,260,000	22,030,000	12,890,000	(8,370,000)	(39%)	(9,140,000)	(41%)
Remedial Measures	1,790,000	3,160,000	3,080,000	1,290,000	72%	(80,000)	(3%)
Contingency	5,680,000	6,210,000	4,280,000	(1,400,000)	(25%)	(1,930,000)	(31%)
Total Plan Implementation	$336,270,000	$386,820,000	$348,300,000	$12,030,000	4%	$(38,520,000)	(11%)
Wetland Mitigation Fee Revenue	25,170,000	42,140,000	36,550,000	11,380,000	45%	(5,590,000)	(13%)
Total Costs Excluding Wetland Mitigation Fee	$313,190,000	$336,530,000	$311,750,000	$(1,440,000)	(0%)	$(24,780,000)	(8%)

Note: 2006 Plan and 2013 Fee Audit costs are inflated to 2016 dollars using the inflation index in Appendix F.
Sources: 2006 Plan, Table 9-1; 2013 audit, Table 3.2; Appendix C (Summary tab); Appendix F, Table F.1.

Table 3.3: Cost Model Comparison – Maximum Urban Development Area (2016 $)

Cost Category	2006 Plan	2013 Fee Audit	2017 Fee Audit	2017 Audit vs. 2006 Plan		2017 Audit vs. 2013 Audit	
Program Administration	$20,630,000	$26,770,000	$26,680,000	$6,050,000	29%	$(90,000)	(0%)
Land Acquisition	266,760,000	257,140,000	268,650,000	1,890,000	1%	11,510,000	4%
Planning and Design	7,050,000	10,430,000	7,810,000	760,000	11%	(2,620,000)	(25%)
Habitat Restoration/Creation	25,910,000	56,090,000	51,750,000	25,840,000	100%	(4,340,000)	(8%)
Environmental Compliance	2,650,000	3,720,000	3,640,000	990,000	37%	(80,000)	(2%)
Preserve Management & Maintenance	41,250,000	55,680,000	35,650,000	(5,600,000)	(14%)	(20,030,000)	(36%)
Monitoring, Research, & Adaptive Management	23,860,000	24,800,000	14,880,000	(8,980,000)	(38%)	(9,920,000)	(40%)
Remedial Measures	1,920,000	3,590,000	3,650,000	1,730,000	90%	60,000	2%
Contingency	6,170,000	6,920,000	4,890,000	(1,280,000)	(21%)	(2,030,000)	(29%)
Total Plan Implementation	$396,200,000	$445,140,000	$417,600,000	$21,400,000	5%	$(27,540,000)	(7%)
Wetland Mitigation Fee Revenue	26,770,000	48,100,000	42,200,000	15,430,000	58%	(5,900,000)	(12%)
Total Costs Excluding Wetland Mitigation Fee	$370,290,000	$389,050,000	$375,400,000	$5,110,000	1%	$(13,650,000)	(4%)

Note: 2006 Plan and 2013 Fee Audit costs are inflated to 2016 dollars using the inflation index in Appendix F.
Sources: 2006 Plan, Table 9-1; 2013 audit, Table 3.2; Appendix D (Summary tab); Appendix F, Table F.1.

4. **Habitat restoration/creation:** Costs are higher than the 2006 Plan due to higher construction unit costs than assumed in the Plan for nearly all habitat types based on actual Conservancy experience. Costs are lower than the 2013 audit because the inflation index used to inflate construction costs from 2012 dollars for this audit is lower than used in Tables 3.2 and 3.3 to inflate 2012 costs across all cost categories.
5. **Environmental compliance:** Costs are higher than the 2006 Plan because a more fine-grained approach in the 2013 audit documented significantly higher permitting costs for restoration projects than originally projected. Costs remain nearly unchanged from the 2013 to the 2017 audit.
6. **Preserve management and maintenance:** Costs are lower than the 2006 Plan and the 2013 audit because this audit reflects economies of scale associated with the Conservancy's partnership with EBRPD. Also, costs in the 2006 Plan included recreation management and these costs were removed in the 2013 audit. Finally, with this audit through year 9 (2016) nearly one-third of the permit term has elapsed. Actual costs to date have been lower due to lower levels of impacts from covered activities (see Table 2.2), and therefore total costs for the entire permit term decline with fewer years remaining for management and maintenance activities.
7. **Monitoring, research, and adaptive management:** Costs decline in part because higher contractor costs are more than offset by lower Conservancy staff costs. More significantly, and like the comment above regarding lower preserve management and maintenance costs, nearly one-third of the permit term has elapsed and there are fewer years over which the Conservancy will incur the remaining costs.
8. **Remedial measures:** Costs are higher than the 2006 Plan because they are primarily affected by habitat restoration/creation costs (see discussion, above). Costs are nearly unchanged from the 2013 audit.
9. **Contingency:** Costs are lower than the 2006 Plan and the 2013 audit because costs are deleted for prior years and instead reflected in actual costs for the other cost categories.

Overall, total costs are slightly higher compared to the 2006 plan and slightly lower compared to the 2013 audit. Total costs excluding wetland mitigation fee revenue, the total amount used to calculate the development fee, follow similar trend though not to the same degree.

4. ENDOWMENT MODEL

The 2006 Plan requires funding for post-permit term costs in perpetuity for the management and monitoring of the preserve system.[18] The Plan did not require that these costs be included in the initial funding plan. Instead, the Plan required that the Conservancy develop a funding plan for post-permit term costs, and secure all necessary commitments to implement the funding plan, by year 15 (2022) or when half of the impacts allowed under the permit occur, whichever comes first.

This audit represents a significant turning point for implementation of the 2006 Plan. For the first time, this audit includes funding for post-permit term costs in perpetuity. Due to cost savings in other areas, this audit proposes a mitigation fee schedule that fully funds post-permit term costs in perpetuity with small increase in current fees (see Chapters 5 and 6).

Post-permit term costs would be funded by a portion of mitigation fee and other revenues transferred to an endowment over time. The endowment would grow with re-invested earnings through year 30. At that time, the endowment would be large enough to generate ongoing earnings sufficient to fully fund post-permit management and monitoring costs in perpetuity, including adjustments for inflation.

The approach taken to estimate post-permit term costs and endowment funding is like that used in other recent Northern California regional habitat plans, including the Santa Clara Valley Habitat Plan (adopted), the Yolo Habitat Conservation Plan (in draft), and the Placer County Conservation Plan (in draft). The approach fully complies with applicable statutes regarding investment of public funds for long-term stewardship of conservation lands.[19] The approach also ensures that, pursuant to the MFA, future development does not fund the endowment needs associated with development that has occurred to date.

Post-permit Term Costs and Revenues

Annual post-permit funding needs from the endowment were developed based on guidance provided in Chapter 9 of the 2006 Plan. Total post-permit term costs were estimated based on a percent of annual costs in the final five-year period of the plan (years 26-30) for the following cost categories:

[18] 2006 Plan, Chapter 9, pp. 9-40 to 9-42 and Table 9-9.

[19] See Mitigation Lands: Nonprofit Organizations (California Government Code section 65965-65968) and the Uniform Prudent Management of Institutional Funds Act (Probate Code section 18501 et seq.).

- 45 percent of program administration costs
- 100 percent of preserve management and monitoring costs
- 50 percent of monitoring, research, and adaptive management costs

The EBRPD has been building a lease revenue stream from activities on preserve system lands primarily associated with wind turbine sites, cell towers, and grazing rights. The agency has been using these funds for preserve management and maintenance costs. Annual revenues have averaged $500,000 annually over the past four years (2013-2016). Some lease revenues are anticipated to continue in perpetuity and therefore to provide funding for post-permit term costs. To be conservative, the endowment model assumes that 50 percent of current average annual lease revenue will be available for post-permit term funding in perpetuity ($250,000 annually).

Endowment Funding Plan

The endowment fund balance is built through year 30 with a combination of three types of revenue:

1. Re-invested earnings from endowment investments.
2. An opening balance representing the fair share cost for development to date (years 1-9)
3. Allocation of a share of revenues from mitigation fees and possibly other Conservancy and local partner revenues through year 30

The Conservancy will need to develop a funding plan for the endowment to ensure that a sufficient balance is built by year 30 to fund post-permit term costs in perpetuity. Guidance for development of the funding plan is provided in the subsections, below.

Investment Earnings

The endowment model assumes a long-term average annual return on investment (ROI) of 7.25 percent. For comparison, other funds with similar long range investment horizons such as university endowments, pension funds, and hospital endowments, have average annual earnings objectives of six to nine percent.

Based on an ROI goal of 7.25 percent, the endowment model assumes that inflation is 3.00 percent and endowment manager fees are 1.00 percent. As shown in **Table 4.1**, this results in an annual real return on endowment fund balances of 3.25 percent. The real rate of return is also known as the "capitalization rate". Thus, the endowment can be expected to generate funding for post-permit term costs, adjusted for inflation and management

fees, at a constant rate of 3.25 percent of the fund balance that is achieved by the end of the permit term in year 30 (2037).

Table 4.1: Investment Earnings

Allocation of Annual Investment Earnings on Endowment Fund Balance	Percent of Endowment Fund Balance
Average Annual Return on Investment Goal[1]	7.25%
Reinvested Earnings to Offset Inflation	3.00%
Available for Annual Distributions	4.25%
Endowment Manager Fees[2]	1.00%
Average Annual Real Rate of Return to Fund Post-Permit Term Costs	**3.25%**

[1] Total average annual investment earnings are net of investment management fees (including custodial and audit costs) and are separate from endowment manager fees (see note 2).

[2] The endowment model assumes that the Conservancy will engage an outside endowment fund manager instead of staffing this function in-house. Endowment manager fees would fund administration, accounting, and reporting costs directly associated with the Conservancy's account.

These assumptions are based on a current habitat endowment management programs operated by the National Fish and Wildlife Foundation (NFWF) under agreements with the California Department of Fish and Wildlife. These programs assume a long-range real rate of return of 3.25 percent to 3.50 percent. The endowment model for this audit uses the more conservative rate of 3.25 percent. This rate is the same rate being used by the Santa Clara Valley Habitat Agency for its endowment fund being managed by the Santa Clara Valley Community Foundation.

Lower investment earnings, higher inflation, or higher endowment manager fees would require increased endowment funding and higher mitigation fees. Higher investment earnings, lower inflation, or lower endowment manager fees would require less endowment funding and lower mitigation fees. Future periodic fee audits will evaluate these assumptions and adjust mitigation fees and other revenues allocated to the endowment as needed to maintain adequate funding.

Opening Fund Balance

Development that has occurred through year 9 has not directly contributed funding for post-permit term costs. Therefore, the endowment fund requires a source of revenue other than future mitigation fees and their related investment earnings to represent prior development's fair share of total endowment funding needs. This funding need will be satisfied by the

Conservancy contributing to the endowment's opening fund balance when the fund is established.

The Conservancy has several options for sources of funding to cover the fair share of development impacts through year 9. One source is a $1 million currently being held by the California Wildlife Foundation that is available for the Conservancy's endowment. Another source is the Conservancy's own fund balance that was $2.3 million as of the end of the prior fiscal year (December 31, 2016).

The fair share endowment contribution from prior development was calculated in three steps with use of the endowment model:

1. Fee revenue contributions sufficient to build the endowment by year 30 were calculated for the initial and maximum UDA based on no opening fund balance.
2. The total revenue contribution for each scenario from step (1) was multiplied by a factor representing impacts to date, weighted by zone, as a percent of permit term limits (see Table 2.2). This factor was 4.5 percent for the initial UDA and 3.0 percent for the maximum UDA.
3. The fair share revenue contributions represented by impacts to date from step (2) was used in the endowment model as the opening fund balance, and the model recalculated revenue contributions required from remaining development from each scenario.

The calculated fair share endowment contribution is $2,200,000 and $1,750.000 for the initial and maximum UDA scenarios, respectively.

Mitigation Fees and Other Revenues

Besides investment earnings, the other ongoing funding sources to build the endowment fund balance by year 30 are revenues from mitigation fees and possibly other Conservancy and local partner revenues. The Conservancy will need to develop a plan to fund this endowment contribution.

State and federal funding sources for specific Plan costs are generally limited to the following (overlapping) uses: (1) land acquisition, and (2) conservation component of the Plan over and above mitigation requirements. Therefore, these funding sources cannot fund the endowment costs for management and monitoring of lands associated with the conservation (non-mitigation) component in perpetuity. Consequently, other funding sources primarily mitigation fees will fund the share of the endowment associated with the conservation (non-mitigation) component of the Plan. In return, state and federal sources will fund a larger share of land acquisition costs. In this manner both funding sources (state/federal versus mitigation fees) will

remain constrained to funding only their respective appropriate shares of total Plan costs.

The endowment model assumes that revenue contributions will be made at a constant rate on an annual basis through the end of the permit term. Of course, revenues may fluctuate above and below this annual average from year to year particularly if funding relies on mitigation fees. However, this variability is offsetting, i.e. lower endowment fund contributions in one year are compensated by higher contributions in other years. Furthermore, periodic audits such as this one enable the Conservancy to adjust its funding plan for the endowment, including revising mitigation fee levels, in response to changing conditions to ensure an adequate fund balance by the end of the permit term.

Mitigation Fees

Development and rural infrastructure fees are likely the primary mitigation fee funding source because there is a reasonable relationship (nexus) between development impacts and the size of the reserve, and the size of the reserve determines post-permit funding needs.

Wetland mitigation fees are associated with specific habitat impacts and only fund habitat restoration/creation projects. Wetland mitigation fees do not fund land acquisition so there is less of reasonable relationship between these types of impacts and the purpose of the endowment. Therefore, these fees are probably not appropriate to contribute to the endowment.

Temporary impact fees could be used to contribute to the endowment though these fees are only one percent of total revenues for the Conservancy's overall plan for funding Plan implementation costs (see Chapter 8, Table 8.1).

Other Potential Funding

Other potential funding for the endowment includes:

- Administrative charges
- Other development exactions, e.g. contributions to recovery that are above and beyond mitigation payments
- Interest earnings (on the Conservancy's operating account)
- Lease revenues

Like temporary impact fees, the first three sources listed above together constitute only a small share of total revenues for the Conservancy's overall funding plan (see Chapter 8, Table 8.1). Thus, these sources are unlikely to be depended upon for the endowment funding.

The fourth source, lease revenues, are received by the EBRPD. As described above, lease revenues have averaged about $500,000 annually since 2013. These revenues could be tapped for endowment funding.

Endowment Fund Model Results

The key inputs to and results from the endowment model are shown below in **Table 4.2**.

Table 4.2: Post-Permit Funding

	Initial UDA	Maximum UDA
Endowment Opening Balance (Year 10)	$2,200,000	$1,750,000
Endowment Revenue (Years 10-30)	45,930,000	57,290,000
Endowment Investment Earnings (Years 10-30)	21,660,000	26,060,000
Endowment Fund Balance (Year 30)	**$69,790,000**	**$85,100,000**
Annual Distribution Rate (Year 31+)	3.25%	3.25%
Annual Distribution (Year 31+)	$2,270,000	$2,770,000
Annual Lease Revenue (Year 31+)	250,000	250,000
Annual Endowment Funding (Year 31+)	**$2,520,000**	**$3,020,000**

Source: Appendix E, Tables E.1 and E.2.

See **Appendix E** for detailed output of the endowment model for the initial and maximum UDA scenarios.

Endowment Management

The Conservancy may manage and invest endowment funds directly or under contract to either a community foundation or a congressionally chartered foundation as defined in California Government Code section 65965. The Conservancy should ensure that the endowment is managed, invested, and disbursed in furtherance of the long-term stewardship of the preserve system by:

- Managing endowment funds efficiently.
- Achieving a reasonable long-term rate of return on investment of endowment funds like those of other prudent investors for endowment funds.
- Achieving a long-term rate of return that is equal to the annual real rate of return assumed in the funding plan (currently 3.25 percent), after deducting inflation and fees.

- Contributing to the endowment at least annually by transferring a fixed percentage of development fee and rural infrastructure fee revenues received (see Chapter 6, Table 6.4).
- Use the periodic audits required by the Plan (such as this audit) to adjust fees and endowment contributions to ensure full funding of the endowment by the end of the permit term.
- Managing and investing endowment funds in good faith and with the care an ordinarily prudent person in a like position would exercise under similar circumstances, consistent with the Uniform Prudent Management of Institutional Funds Act (Part 7 (commencing with Section 18501) of Division 9 of the Probate Code).
- Utilizing generally accepted accounting practices as promulgated by either the Financial Accounting Standards Board or any successor entity for nonprofit organizations or the Governmental Accounting Standards Board or any successor entity for public agencies, to the extent those practices do not conflict with any other requirements of law.
- Disbursing endowment funds on a timely basis and only for the long-term stewardship of the preserve system post-permit term.

5. WETLAND MITIGATION FEE

This chapter presents the updated wetland mitigation fee schedule and the reasonable relationship findings required by the MFA and explained in Chapter 1. Unless the applicant chooses to perform their own restoration or creation, the wetland mitigation fee is applied to covered activities that generate permanent impacts on aquatic land cover types whether inside or outside the UDA.[20] Wetland mitigation fees are calculated based on the surface area of the aquatic land cover type impacted, regardless of the size of the covered activity or the total amount of impacts. The wetland mitigation fee is therefore typically applied to small portion of the total impacts of a covered activity.

Updated Fee Schedule

The wetland mitigation fee is based on the unit costs (cost per acre or cost per linear foot for streams) presented in the prior chapter multiplied by a mitigation ratio established by the Plan. The mitigation ratio represents the restoration area needed to mitigate one acre (or one linear foot in the case of streams) of impact. Most mitigation ratios are one-to-one, that is one acre of impact requires one acre of wetland restoration/creation to mitigate impacts. Several land cover types require a higher or lower mitigation ratio to adjust for the relative ability of restoration projects to mitigate the types of impacts associated with a given land cover type. The updated wetland mitigation fees based on mitigation ratios by land cover type are shown in **Table 5.1**.

Consistent with the habitat restoration/creation cost estimates explained in Chapter 3, above, the wetland mitigation fee is only related to the one-time activity of restoration or creation of aquatic land cover types. The three other fees presented in the following two chapters of this report address the other Plan costs to mitigate the impacts of covered activities on aquatic land cover types. These other costs include, for example, acquisition of sites for wetland, pond, and stream restoration/creation, preservation of existing wetland, pond, and stream habitat and long-term management, maintenance, and monitoring of habitat restoration/creation sites.

[20] 2006 Plan, Chapter 9, pp. 9-23 to 9-24 and Table 9-5.

Table 5.1: Wetland Mitigation Fee Schedule

Land Cover Type	Habitat Restoration / Creation Cost		Mitigation Ratio	Wetland Mitigation Fee	
Riparian	$ 90,039	per acre	1:1	$ 90,039	per acre
Perennial Wetland	136,456	per acre	1:1	136,456	per acre
Seasonal Wetland	159,665	per acre	2:1	319,330	per acre
Alkali Wetland	161,410	per acre	2:1	322,820	per acre
Ponds	175,719	per acre	1:1	175,719	per acre
Aquatic (Open Water)	175,719	per acre	0.5:1	87,860	per acre
Slough / Channel	125,463	per acre	1:1	125,463	per acre
Streams (<=25 ft. wide)	463	per linear foot	1:1	463	per linear foot
Streams (>25 ft. wide)	695	per linear foot	1:1	695	per linear foot

Sources: 2006 Plan, Tables 5-16 and 5-17; Table 3.1.

Table 5.2 compares the updated wetland mitigation fees to current fees. The current fee has two levels. The "Cities/County" fees are imposed by Permittees with land use authority (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. The "Conservancy" fees reflect the results of the 2013 audit and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee.

Wetland mitigation fees imposed per acre by the Conservancy decline compared to current fees because of differences in the inflation index for certain cost components used for this audit versus the index used for the annual fee adjustments. The former uses the Building Cost Index (BCI) provided by the California Department of General Services, and the latter uses the Consumer Price Index (CPI) for the San Francisco Bay Area provided by the U.S. Bureau of Labor Statistics. The BCI increased less than the CPI so fees can be reduced compared to current Conservancy levels while still fully funding habitat restoration/creation costs.

Fee imposed by the cities and the County increase for most land cover types primarily because the cities and the County have not yet adopted the revised rates developed by the 2013 audit.

Estimated restoration costs and revenues associated with aquatic land cover impacts are shown in **Table 5.3**. The table multiplies the aquatic land cover acreage impacts from Table 2.4 by the update fee schedule in Table 5.1. The 30-year revenue estimates in the table are used in the development fee calculation presented in Chapter 6.

Table 5.2: Wetland Mitigation Fee Comparison

Land Cover Type		Current Fee (2017)		Fee Audit (2017)	Fee Audit Compared To:	
		Cities/ County	Conserv-ancy		Cities/ County	Conserv-ancy
Riparian	per acre	$ 76,433	$ 98,978	$ 90,039	18%	(9%)
Perennial Wetland	per acre	$104,593	$145,423	$136,456	30%	(6%)
Seasonal Wetland	per acre	$226,617	$337,101	$319,330	41%	(5%)
Alkali Wetland	per acre	$214,549	$340,512	$322,820	50%	(5%)
Aquatic (Open Water)	per acre	$113,979	$184,474	$175,719	54%	(5%)
Aquatic (Open Water)	per acre	$ 57,660	$ 92,237	$ 87,860	52%	(5%)
Slough / Channel	per acre	$130,070	$134,428	$125,463	(4%)	(7%)
Streams (<=25 ft. wide)	per linear foot	$ 623	$ 376	$463	(26%)	23%
Streams (>25 ft. wide)	per linear foot	$ 939	$ 564	$695	(26%)	23%

Note: "Cities/County" fees are imposed by Permittees (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. "Conservancy" fees reflect the results of the 2011 and 2013 audits and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee.

Sources: ECCC Habitat Conservancy; Table 5.1.

Mitigation Fee Act Findings

The following findings are required by the MFA and were presented in Chapter 1.

Section 66001(a)(1)

The wetland mitigation fee is intended to pay the full cost of restoration or creation of aquatic land cover types, including design, implementation, post-construction monitoring, and remediation. The development fee described in the next chapter will fund acquisition of the site for the restoration or creation and the management and monitoring after the wetland is fully functioning. Restoration of oak savanna is also required by the Plan, but the cost of this restoration is included in the development fee because it is not associated with jurisdictional wetlands and waters.

Table 5.3: Wetland Mitigation Fee Revenue

Land Cover Type	Wetland Mitigation Fee		Fee Revenue (Year 10-30) Initial UDA	Fee Revenue (Year 10-30) Maximum UDA
Riparian	$ 90,039	per acre	$ 2,600,000	$ 3,050,000
Perennial Wetland	136,456	per acre	3,020,000	3,060,000
Seasonal Wetland	319,330	per acre	4,350,000	5,840,000
Alkali Wetland	322,820	per acre	2,970,000	3,290,000
Ponds	175,719	per acre	1,210,000	1,390,000
Aquatic (Open Water)	87,860	per acre	1,050,000	1,050,000
Slough / Channel	125,463	per acre	9,020,000	9,020,000
Subtotal			$24,220,000	$26,700,000
Streams (<=25 ft. wide)	$463	per linear foot	9,470,000	11,910,000
Streams (>25 ft. wide)	695	per linear foot	2,030,000	2,760,000
Total			$35,720,000	$41,370,000
			Fee Revenue (Year 0-30) Initial UDA	**Fee Revenue (Year 0-30) Maximum UDA**
Actual (Year 0-9)			$790,000	$790,000
Estimated (Year 10-30)			35,720,000	41,370,000
Total (Year 0-30)			$36,510,000	$42,160,000

Note: "UDA" is the urban development area.
Sources: Tables 2.3, 5.1, and 8.1.

Section 66001(a)(2)

The wetland mitigation fee will fund the capital costs associated with wetland restoration/creation the mitigate related wetland impacts. Chapter 5 of the Plan explains the conservation strategy for wetland restoration/creation, and Chapter 9 explains the costs associated with implementing the strategy.

Section 66001(a)(3)

A reasonable relationship exists between the use of wetland mitigation fee revenue and covered activities that would pay the fee. Only covered activities that have wetland impacts (impacts on species and natural communities within aquatic land cover types) pay the fee, and fee revenues fund implementation of the conservation strategy designed to mitigate those impacts. Specific elements of the strategy from Chapter 5 of the Plan that relate to the restoration or creation of wetlands, ponds, and streams include:

- Conservation methods such as:
  - Biological goals and objectives that include the restoration and creation of wetlands, ponds, and streams.
  - Mitigation of impacts on state and federal jurisdictional wetlands and waters.
- Conservation measures such as:
  - Conservation Measure 2.3. Restore Wetlands and Create Ponds
  - Conservation Measure 2.10. Restore Streams and Riparian Woodland/Scrub to Compensate for Habitat Loss and to Increase Biodiversity.

The cost model summarized in Chapter 9 and presented in detail in Appendix G of the Plan explains the costs associated with the restoration or creation of wetlands, ponds, and streams. Updated costs are shown in Table 3.1 in Chapter 3 of this report and include:

- All costs associated with the habitat restoration/creation cost category (includes construction costs and staff-related costs)
- The share of environmental compliance costs associated with one-time costs for habitat restoration/creation
- The share of monitoring, research, and adaptive management costs associated with habitat restoration/creation, specifically costs for pre-construction surveys and construction monitoring.

Section 66001(a)(4)

A reasonable relationship exists between the need for the wetland mitigation fee and covered activities that would pay the fee. Chapter 3 of the Plan explains the relationship between the 17 animal and 11 plant species covered under the Plan and aquatic land cover types (see Table 3-9 in Chapter 3 of the Plan). Chapter 4 of the Plan explains the impacts of covered activities on these animal and plant species, and more broadly on natural communities. The importance of aquatic land cover types is demonstrated by:

- The eight aquatic land cover types provide habitat for all 17 animal species covered under the Plan.
- Individual aquatic land cover types provide habitat for at least three and, in the case of seasonal wetlands, as many as 11 covered animal species.
- Vernal pools are an essential habitat for four covered species and 11 covered plants.

Section 66001(b)

A reasonable relationship exists between the amount of the wetland mitigation fee on a specific covered activity and the proportionate share of Plan costs based on the fee schedule shown in Table 5.1. The fee schedule reflects the type of land cover that is affected because both mitigation ratios and per acre mitigation costs vary by land cover. The total fee for a covered activity is proportional to the amount of the impact based on the number of acres of wetland or pond, or linear feet of stream affected.

6. DEVELOPMENT FEE

This chapter presents the updated development fee schedule and the reasonable relationship findings required by the MFA and explained in Chapter 1. The development fee is applied to covered activities that generate permanent impacts inside the UDA.[21] Applicants also have the option of dedicating land to the preserve system in lieu of a fee payment subject to approval by the Conservancy.

Updated Fee Schedule

The development fee is based on covered activities related to urban development (all covered activities within the UDA) funding a fair share of total Plan implementation costs. The fair share is based on the total amount of lands dedicated to habitat preservation in Eastern Contra Costa County, both lands existing prior to the Plan and lands added by the preserve system through implementation of the Plan. The Plan apportioned this total land area for habitat preservation between urban development existing prior to the Plan and urban development anticipated to occur during the 30-year permit term of the Plan. The fair share of costs allocated to the development fee under the maximum UDA scenario is 52 percent as documented in Appendix H of the Plan. The Plan requires that the periodic audit use this fair share amount to update the development fee, and that the fee cannot make up for shortfalls in revenue from other local, state, and federal sources.[22]

As explained in Chapter 1, all covered activities pay the development fee unless the applicant provides their own mitigation. In cases where aquatic land cover types are affected, the wetland mitigation fee is also paid. As explained in Chapter 3, the wetland mitigation fee will fund costs of habitat restoration/creation associated with impacts on wetlands, ponds, and streams. Therefore, total Plan costs subject to the fair share calculation are calculated net of wetland mitigation fee revenue. This approach avoids double-charging covered activities for the same Plan costs.

Table 6.1 shows that share of total Plan costs allocated to the development fee. Costs are shown net of estimated wetland mitigation fee revenue drawn from Table 5.3 in the prior chapter. Development fee revenue to date (years 1-9) is deducted from the fair share allocated to the development fee to

[21] 2006 Plan, Chapter 9, pp. 9-17 to 9-22, Figure 9-1, Table 9-4.

[22] 2006 Plan, Chapter 9, p. 9-31.

calculate the net revenue still required from the development fee for the remaining 21 years of the permit term. Using this approach in future periodic audits will ensure that at the end of the permit term covered activities would have paid the fair share of plan costs as calculated in the Plan.

Table 6.1: Development Fee Fair Share Analysis

	Maximum Urban Development Area		Initial Urban Development Area	
	Formula	**Amount**	**Formula**	**Amount**
Plan Implementation Costs	*a*	$417,600,000	*q*	$348,300,000
Wetland Mitigation Fee Revenue	*b*	(42,200,000)	*p*	(36,550,000)
Endowment Contribution	*c*	59,040,000	*o*	48,130,000
Net Cost Subject to Fair Share Allocation	*d (sum)*	$434,440,000	*m (sum)*	$359,880,000
Development Fair Share Allocation[1]	*e*	52%	*l = k / m*	42%
Development Fair Share Costs	*f = d * e*	$225,910,000	*k = m - i*	$151,350,000
Development Fee Revenue to Date	*g*	(6,190,000)	*g*	(6,190,000)
Remaining Development Fair Share Costs (Years 10-30)	*h = f - g*	**$219,720,000**	***j = k + g***	**$145,160,000**
Remaining Non-Fee Funding	*i = d - f*	$208,530,000	*i*	$208,530,000

[1] "Development Fair Share Allocation" for maximum UDA based on 2006 Plan, Appendix H, Table 1, consistent with procedures required for periodic audit (2006 Plan, Chapter 9, p. 9-31). Also, consistent with the 2006 Plan, the initial UDA Development Fair Share Allocation is based on holding constant non-fee revenue sources calculated for the maximum UDA scenario. This approach reasonably assumes that other federal, state, and local funding over the permit term will not be affected by the amount of urban development area impacts.

Sources: 2006 Plan, Appendix H, Table 1; Tables 3.2, 3.3, 5.3, 8.1, and Appendix E, Table E.1 and E.2.

A range of federal, state, and local sources fund the remaining costs for Plan implementation, including rural infrastructure fees and temporary impact fees. Fair share costs allocated to the development fee under the initial UDA scenario are calculated by holding constant total funding from these other sources. It is reasonable to assume that the level of development under the Plan would not affect the level of funding from these other sources.

The updated development fee is shown in **Table 6.2**. The fee is based on the fair share costs calculated in Table 6.1 divided by the equivalent acres of impact remaining under each scenario from Table 2.2. The bottom of Table 6.2 shows the fee per acre by zone based on the weighting factors explained in Chapter 2.

Table 6.2: Development Fee Schedule

		Initial UDA	Maximum UDA	Average
Fee per Equivalent Acre				
Remaining Development Fair Share Costs (Years 10-30)		$145,160,000	$219,720,000	
Remaining Development Impacts (equivalent acres)		20,814	30,928	-
Development Fee (per equivalent acre)		$6,974	$7,104	**$7,039**
Fee Schedule (per acre of impact)	*Weight*			
Zone 1	2	$13,948	$14,208	**$14,078**
Zone 2	4	$27,896	$28,416	**$28,156**
Zone 3	1	$ 6,974	$ 7,104	**$ 7,039**

Source: Tables 2.2 and 6.1.

Table 6.2 also shows the average fee for the initial and maximum UDA scenarios. Use of the average development fee for the two scenarios was approved by the Conservancy Board when adopting the 2013 Audit recommendations (June 27, 2013).

Consistent with the 2013 audit, these equivalent acres do not discount for lands within the UDA that remain undeveloped during the permit term, as was done in the Plan to calculate the original development fee. A discount factor for developable land is no longer warranted because public funding for land acquisition has been strong. The Conservancy will be well-positioned to pursue an extension if the impact estimates are not reached within the current 30-year permit term.

Comparison with Original and Current Fee

In **Table 6.3** the updated fee based on the average of the two scenarios is compared with the current adopted fee. The current fee has two levels for the same reason explained in the prior chapter. The "Cities/County" fees are imposed by Permittees with land use authority (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. The "Conservancy" fees reflect the results of the 2013 audit and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee. Most covered activities are currently paying the "Cities/County" fee.

Table 6.3: Development Fee Comparison (fee per acre)

Zone	Current Fee (2017)		2017 Fee Audit[2]	Fee Audit Compared To:	
	Cities/ County	Conserv-ancy		Cities/ County	Conserv-ancy
Zone 1	$14,711	$13,491	$14,078	(4.3%)	4.4%
Zone 2	$29,423	$26,983	$28,156	(4.3%)	4.3%
Zone 3	$ 7,356	$ 6,746	$ 7,039	(4.3%)	4.3%

Note: "Cities/County" fees are imposed by Permittees (participating cities and the County) and have been adjusted annually for inflation since Plan adoption but do not reflect the results of fee audits. "Conservancy" fees reflect the results of the 2011 and 2013 audits and are imposed on participating special entities (PSEs) that apply for coverage under the Plan but are not a Permittee.

[1] Uses average development fee of initial and maximum UDA scenarios as approved by the Conservancy Board when adopting the 2013 Audit recommendations (June 27, 2013).

Sources: ECCC Habitat Conservancy; Table 6.2.

As shown in the table, the recommended development fee, which includes necessary funding for the endowment, is about four percent higher than current fees imposed directly by the Conservancy, and four percent lower than fees currently imposed by participating cities and the County.

Required future revenue contributions to the endowment represent about 20 percent of total remaining Plan costs for years 10-30. Current development fees require only a modest adjustment despite this additional cost because of cost savings over the 30-year permit term. These cost savings come primarily from the preserve management and maintenance cost category discussed in Chapter 3. Such savings were anticipated by the Plan as a source of funding for the endowment.

Mitigation Fee Act Findings

The following findings are required by the MFA and were presented in Chapter 1.

Section 66001(a)(1)

The development fee is intended to pay the fair share cost of the Plan associated with permanent impacts from urban development excluding habitat restoration/creation costs for aquatic land cover types funded by the wetland mitigation fee.

Section 66001(a)(2)

The development fee will fund a fair share of all Plan costs except costs funded by wetland mitigation fees. Chapter 5 of the Plan explains the conservation strategy for the Plan and Chapter 9 explains the costs associated with implementing the strategy.

Section 66001(a)(3)

A reasonable relationship exists between the use of development fee revenue and covered activities that would pay the fee. Chapter 5 of the Plan explains the conservation strategy and Chapter 9 explains the costs associated with implementing the strategy.

The conservation strategy in Chapter 5 of the Plan identifies biological goals and objectives that are supported by specific conservation measures: five measures related to landscape-level conservation, nine measures related to natural community-level conservation (excluding two measures related to wetland, pond, and stream restoration/creation discussed in the prior chapter of this report), and nine measures related to species-level conservation.

The cost model summarized in Chapter 9 of the Plan and presented in detail in Appendix G of the Plan explains and estimates the costs associated with implementation. Updated costs are shown in Chapter 3 of this report and include nine cost categories necessary to implement the Plan: program administration, land acquisition, planning and design, habitat restoration/creation, environmental compliance, preserve management and maintenance, monitoring, research, and adaptive management, remedial measures, and contingency fund. As explained in the Chapter 3 of this report costs related to wetland, pond, and stream habitat restoration/creation are not included in the development fee.

Section 66001(a)(4)

A reasonable relationship exists between the need for the development fee and covered activities that would pay the fee. Chapter 3 of the Plan explains the relationship between the 17 animal species, 11 plant species, and associated habitats covered under the Plan and terrestrial land cover types (see Table 3-9 in Chapter 3 of the Plan). Chapter 4 of the Plan explains the impacts of covered activities by land cover type on these animal and plant species, and more broadly on their habitats and natural communities.

Section 66001(b)

A reasonable relationship exists between the amount of the development fee on a specific covered activity and the proportionate share of Plan costs based on the fee schedule shown in Table 6.2 for three reasons:

- The fee is based on urban development's fair share of Plan costs as determined by the share of urban development occurring under the Plan compared to total development (existing plus new) under the maximum UDA scenario. As stated in the Plan: "this analysis considers the pace of open space acquisition relative to the pace of development before and after adoption of the HCP/NCCP, and assigns the land acquisition requirements of the HCP/NCCP according to the premise that future development should mitigate impacts in the inventory area proportionate to its share of the overall habitat impacts in the inventory area (i.e., impacts in the past and the future)."[23]
- As explained in detail in Chapter 2 in the section "Development Fee Zone" the fee is adjusted for three zones that reflect the relative amount of impact from urban development on natural habitats and covered species. The mapping of the zones was completed at a level of detail sufficient to provide a reasonable relationship between all land within a specific zone and the relative weight of impacts assigned to that zone.
- The total fee for a covered activity is proportional to the amount of the impact based on the number of acres affected.

[23] 2006 Plan, Chapter 5, p. 5-51.

7. RURAL INFRASTRUCTURE AND TEMPORARY IMPACT FEES

This chapter presents the updated fee schedule for the rural infrastructure fee and the temporary impact fee, and the reasonable relationship findings for each fee required by the MFA and explained in Chapter 1.

Rural Infrastructure Fee

The rural infrastructure fee is applied to all permanent impacts from covered activities outside the UDA based on the UDA boundaries at the time of the covered activity. The rural infrastructure fee is based on the development fee described in the prior chapter and shown in the fee schedule in Table 6.2.

The Plan focused on fee estimates for 18 specified rural road projects.[24] For these projects the development fee was adjusted for the more severe fragmentation, edge, and increased-mortality effects compared to urban development and other rural infrastructure projects and activities. The extent of these additional impacts depends on whether the proposed facility is new or expanded, on the length of the facility, on the type of habitat traversed by the road, and other factors. Some of these additional impacts can be partially reduced by wildlife-friendly design measures.

The Plan also covers other rural infrastructure projects and activities such as flood protection projects, utility projects, and related maintenance activities. The Plan includes a revenue estimate for these covered activities but does not list specific projects or activities as it does for rural roads.[25]

Mitigation Fee Act Findings

The following findings are required by the MFA and were presented in Chapter 1.

Section 66001(a)(1)

The rural infrastructure fee is intended to pay the costs of the Plan associated with mitigating permanent impacts outside the urban development area, excluding habitat restoration/creation costs for aquatic land cover types funded by the wetland mitigation fee.

[24] 2006 Plan, Chapter 9, pp. 9-24 to 9-25, Table 9-6.

[25] 2006 Plan, Appendix H, Table 1. See the $1,500,000 revenue assumption estimate in section 2 of the table for "other rural infrastructure mitigation costs".

Section 66001(a)(2)

The rural infrastructure fee will fund Plan costs to mitigate permanent impacts outside the urban development area, excluding habitat restoration/creation costs for aquatic land cover types funded by the wetland mitigation fee. Chapter 5 of the Plan explains the conservation strategy for the Plan and Chapter 9 explains the costs associated with implementing the strategy.

Section 66001(a)(3)

A reasonable relationship exists between the use of rural infrastructure fee revenue and covered activities that would pay the fee. Chapter 5 of the Plan explains the conservation strategy and Chapter 9 explains the costs associated with implementing the strategy.

The conservation strategy in Chapter 5 of the Plan identifies biological goals and objectives that are supported by specific conservation measures: five measures related to landscape-level conservation, nine measures related to natural community-level conservation (excluding two measures related to wetland, pond, and stream restoration/creation discussed in the prior chapter of this report), and nine measures related to species-level conservation.

The cost model summarized in Chapter 9 and presented in detail in Appendix G of the Plan explains the costs associated with implementation. Updated costs are shown in Chapter 3 of this report and include nine cost categories: program administration, land acquisition, planning and design, habitat restoration/creation, environmental compliance, preserve management and maintenance, monitoring, research, and adaptive management, remedial measures, and contingency fund. As explained in the prior chapter of this report costs related to habitat restoration/creation on aquatic land cover types are not included in the development fee.

Section 66001(a)(4)

A reasonable relationship exists between the need for the rural infrastructure fee and covered activities that would pay the fee. Chapter 3 of the Plan explains the relationship between the 17 animal species, 11 plant species, and associated habitats covered under the Plan and terrestrial land cover types (see Table 3-9 in Chapter 3 of the Plan). Chapter 4 of the Plan explains the impacts of covered activities by land cover type on these animal and plant species, and more broadly on their habitats and natural communities.

Section 66001(b)

A reasonable relationship exists between the amount of the rural infrastructure fee on a specific covered activity and the proportionate share of Plan costs based on the fee schedule shown in Table 6.2 for three reasons:

- As explained in the prior chapter, the development fee is based only on urban development's fair share of Plan costs and excludes permanent impacts outside the UDA. Permanent impacts within the UDA are reasonably like permanent impacts outside the UDA so it is reasonable to base the rural infrastructure fee at the same level as the development fee.
- As explained in detail in Chapter 2 in the section "Development Fee Zone" the fee is adjusted for three zones that reflect the relative amount of impact from urban development on natural habitats and covered species. The mapping of the zones was completed at a level of detail sufficient to provide a reasonable relationship between all land within a specific zone and the relative weight of impacts assigned to that zone.
- The fee for rural road projects is also adjusted by a multiplier for individual rural road projects to reflect their respective level of additional fragmentation, edge and wildlife mortality effects.
- The total fee for a covered activity is proportional to the amount of the impact based on the number of acres affected.

Temporary Impact Fee

The temporary impact fee is applied to all temporary impacts from covered activities both inside and outside the UDA. The temporary impact fee is based on the development fee described in the prior chapter and shown in the fee schedule in Table 6.2. Where applicable the fee is also based on the wetland mitigation fee described in Chapter 5 and shown in the fee schedule in Table 5.1.

As described in Chapter 2 of the Plan there are many covered activities that are short duration or intermittent and result in temporary impacts on natural land cover types. As described in Chapter 4 of the Plan some covered activities are expected to have substantial temporary impacts on covered species due to their large footprint, linear nature, location in the inventory area, effect on local soils or hydrology, or a combination of these factors. Temporary impacts are defined as any impact on vegetation or habitat that does not result in permanent habitat removal.

Chapter 9 of the Plan provides a detailed explanation of the calculation of the temporary impact fee. Covered activities with temporary impacts pay a fee based on the development fee. In addition, covered activities with

temporary impacts on aquatic land cover types also pay a fee based on the wetland mitigation fee. The temporary impact fee is calculated based on the frequency of the temporary impact over the 30-year permit term; the amount of the fee is equal to the applicable development or wetland mitigation fee multiplied by the proportion of the Plan's 30-year term affected by the temporary impact.

Mitigation Fee Act Findings

The following findings are required by the MFA and were presented in Chapter 1.

Section 66001(a)(1)

The temporary impact fee is intended to pay for costs of the Plan associated with mitigating temporary impacts.

Section 66001(a)(2)

The temporary impact fee will fund Plan costs to mitigate temporary impacts. Chapter 5 of the Plan explains the conservation strategy for the Plan and Chapter 9 explains the costs associated with implementing the strategy.

Section 66001(a)(3)

A reasonable relationship exists between the use of temporary impact fee revenue and covered activities that would pay the fee. Chapter 5 of the Plan explains the conservation strategy and Chapter 9 explains the costs associated with implementing the strategy.

The conservation strategy in Chapter 5 of the Plan identifies biological goals and objectives that are supported by specific conservation measures: five measures related to landscape-level conservation, 11 measures related to natural community-level conservation, and nine measures related to species-level conservation.

The cost model summarized in Chapter 9 and presented in detail in Appendix G of the Plan explains the costs associated with implementation. Updated costs are shown in Chapter 3 of this report and include nine cost categories: program administration, land acquisition, planning and design, habitat restoration/creation, environmental compliance, preserve management and maintenance, monitoring, research, and adaptive management, remedial measures, and contingency fund.

Section 66001(a)(4)

A reasonable relationship exists between the need for the temporary impact fee and covered activities that would pay the fee. Chapter 3 of the Plan explains the relationship between the 17 animal and 11 plant species covered under the Plan and all land cover types (see Table 3-9 in Chapter 3 of the Plan). Chapter 4 of the Plan explains the impacts of covered activities on these animal and plant species.

Section 66001(b)

A reasonable relationship exists between the amount of the temporary impact fee on a specific covered activity and the proportionate share of Plan costs based on the fee schedules shown in Table 5.1 and Table 6.2 for three reasons:

- As explained in Chapter 4 regarding the wetland mitigation fee and Chapter 5 regarding the development fee, the fees are based only on Plan costs associated with permanent impacts. Temporary impacts are reasonably like permanent impacts when adjusted for the duration of the temporary impact so it is reasonable to establish the temporary fee based on the wetland mitigation and development fees.
- As explained in detail in Chapter 2 in the section "Development Fee Zone" the fee is adjusted for three zones that reflect the relative amount of impact from urban development on natural habitats and covered species. The mapping of the zones was completed at a level of detail sufficient to provide a reasonable relationship between all land within a specific zone and the relative weight of impacts assigned to that zone.
- The total fee for a covered activity is proportional to the amount of the impact based on the number of acres affected.
- The total fee is proportional to the duration of the temporary impact.

8. FUNDING PLAN

This chapter provides an updated funding plan for the Plan based on the Plan cost and mitigation fee revenue analysis presented in the prior chapters. This chapter provides the remaining two findings required by the MFA and explained in Chapter 1:

- Identify all sources and amounts of funding anticipated to complete financing of improvements to be funded by the fee.
- Designate the approximate dates when funding is expected to complete financing of improvements to be funded by the fee.

Table 8.1 presents the updated funding plan under the initial and maximum UDA scenarios. Actual revenues and costs for years 0-9 inflated to 2016 dollars are added to estimates of remaining revenues and costs for each scenario to calculate total amounts for years 0-30.

Revenue estimates were developed using the following approach:

- **Wetland mitigation fee** and **development fee** revenue is based on the approaches explained in Chapters 5 and 6, respectively.
- **Rural infrastructure fees** are based on the amounts estimated in the 2006 Plan adjusted for inflation to 2016 dollars.
- **Temporary impact fees** are estimated to continue at 50 percent of the average annual amount for the prior four years reflecting a loss of revenue from P.G.&E. utility projects because the utility now has its own approved habitat conservation plan.
- **Administrative charges** are for Conservancy costs associated with processing mitigation fees paid by participating special entities, and are estimated to continue at 100 percent of the average annual amount for the prior four years.
- **Payments for non-covered activities** are zeroed out because this revenue cannot be used for impacts under the Plan but must be used for additional conservation measures.
- **Other development exactions** are primarily from participating special entities and are for conservation beyond the mitigation requirements of the Plan ("contribution to recovery"). These revenues are estimated to continue at 100 percent of the average annual amount for the prior four years.
- **State/federal funds** are estimated to continue at 40 percent of the average annual amount for the prior four years reflecting the large

amount of contributions to date and therefore less need in the future, as well as declining funding for Section 6 grants.

- **Local capital funds**, primarily from foundation grants and the EBRPD, are estimated to continue at 60 percent of the average annual amount for the prior four years, also reflecting the large amount of contributions to date and therefore less need in the future, as well as declining funding from EBRPD Measure WW.
- **Local operating funds** are composed of due diligence and closing costs for land acquisitions funded by the EBRPD, plus windmill turbine site, cell tower, and grazing lease revenues from preserve lands. These funds are estimated to continue at 100 percent of the average annual amount for the prior four years.
- **Interest earnings** and **miscellaneous revenue** are estimated to continue at 100 percent of the average annual amount for the prior four years.

The Conservancy anticipates that it soon will approve funding from special tax districts formed by development projects in exchange for providing discounts on development fees. Special district funding will be available in perpetuity. Should this funding be realized, the next periodic audit in 2022 will integrate it into the funding plan.

Consistent with the original funding plan, revenues from non-mitigation fee sources are held constant under both scenarios. Revenue from other fees and exactions not anticipated in the original funding plan are included with non-mitigation fee revenues because the former is not associated with impacts from covered activities paying mitigation fees or are to cover costs not reflected in the Plan. State and federal funding is calculated as a residual amount after accounting for all other non-mitigation fee revenue.

Table 8.1 supports the findings described above by identifying sources and amounts of funding anticipated to complete the Plan, and that funding is expected within the 30-year permit term.

Tables 8.2 and 8.3 compare the updated funding plan with the 2006 Plan and the 2013 audit for the initial and maximum UDA scenarios, respectively, in 2016 dollars. Key findings and conclusions from these tables include:

- The shares of total revenue for the three major funding sources (development fees, state/federal land acquisitions funds, and local land acquisition funds) that constitute about 80 percent of total funding have generally remained constant across all three funding plans.
- Mitigation fee revenues generally have increased in line with overall cost increases. Development fees in the initial UDA funding plan increased less than overall costs compared to the 2013 audit because of a lower fair share percentage.

Table 8.1: Funding Plan (2016 dollars)

		Initial UDA		Maximum UDA	
	2007-2016 (Year 0-9) *Actual*	2017-2037 (Year 10-30) *Estimate*	Total (Year 1-30) *Estimate*	2017-2037 (Year 10-30) *Estimate*	Total (Year 1-30) *Estimate*
PLAN FUNDING					
Mitigation Fees					
Development Fee	$6,190,000	$145,160,000	$151,350,000	$219,720,000	$225,910,000
Wetland Mitigation Fee	830,000	35,720,000	36,550,000	41,370,000	42,200,000
Rural Infrastructure Fees[1]	1,690,000	7,980,000	9,670,000	7,980,000	9,670,000
Temporary Impact Fee[2]	2,060,000	2,620,000	4,680,000	2,620,000	4,680,000
Subtotal	$10,770,000	$191,480,000	$202,250,000	$271,690,000	$282,460,000
Other Fees & Exactions					
Administrative Charges[2]	$390,000	$800,000	$1,190,000	$800,000	$1,190,000
Non-Covered Activities[3]	3,540,000	(3,540,000)	-	(3,540,000)	-
Other Development Exactions[2]	1,450,000	2,050,000	3,500,000	2,050,000	3,500,000
Subtotal	$5,380,000	$(690,000)	$4,690,000	$(690,000)	$4,690,000
Local, State & Federal Funds					
State/Federal Funds[2]	$67,200,000	58,800,000	126,000,000	58,800,000	126,000,000
Local Capital Funds[2]	26,420,000	19,750,000	46,170,000	19,750,000	46,170,000
Local Operating Funds	4,560,000	13,380,000	17,940,000	13,380,000	17,940,000
Subtotal	$98,180,000	$91,930,000	$190,110,000	$91,930,000	$190,110,000
Other Funds					
Interest Earnings[2]	$250,000	$230,000	$480,000	$230,000	$480,000
Miscellaneous[2]	20,000	-	20,000	-	20,000
Subtotal	$270,000	$230,000	$500,000	$230,000	$500,000
Total Revenue	**$114,600,000**	**$282,950,000**	**$397,550,000**	**$363,160,000**	**$477,760,000**
PLAN COSTS					
Plan Implementation (Permit Term)	$105,500,000	$242,800,000	$348,300,000	$312,100,000	$417,600,000
Endowment Fund Contribution		-	48,130,000	-	59,040,000
Total Costs		-	**$396,430,000**	-	**$476,640,000**
Surplus / (Deficit)			**$1,120,000**		**$1,120,000**

[1] Total Year 0-30 revenue estimated based on adjusting 2006 Plan estimate of $8,930,000 by the inflation index for 2006.

[2] Future year estimates based on annual average actual revenue for prior four years, except: (1) future temporary impact fee revenue estimated at 50 percent of prior revenue reflecting reduced PG&E need for Plan coverage, (2) future state/federal land acquisition funds are estimated at 40 percent of prior revenue to reflect funding commitment, and (3) future local land acquisition funds estimated at 55 percent of prior revenue to reflect loss of non-recurring revenue.

[3] Prior year revenue deducted from future years because funding must augment and not substitute for Plan obligations (see Chapter 9 of the Plan).

Sources: Tables 5.3 and 6.1, Appendices C and D (Summary), Appendix F, Table F.2.

Table 8.2: Funding Plan Comparison – Initial Urban Development Area (2016 dollars)

Cost Category	2006 Plan		2013 Fee Audit		2017 Fee Audit		2017 Audit vs. 2006 Plan		2017 Audit vs. 2013 Audit	
Mitigation Fees										
Development Fee	$133,760,000	40%	$154,110,000	40%	$151,350,000	38%	$17,590,000	13%	$(2,760,000)	(2%)
Wetland Mitigation Fee	25,170,000	7%	42,140,000	11%	36,550,000	9%	11,380,000	45%	(5,590,000)	(13%)
Rural Infrastructure Fees	10,110,000	3%	10,040,000	3%	9,670,000	2%	(440,000)	(4%)	(370,000)	(4%)
Temporary Impact Fee	-	0%	1,210,000	0%	4,680,000	1%	4,680,000	NA	3,470,000	287%
Subtotal	$169,040,000	50%	$207,500,000	53%	$202,250,000	51%	33,210,000	20%	(5,250,000)	(3%)
Other Fees & Exactions										
Administrative Charges	$-	0%	$1,450,000	0%	$1,190,000	0%	1,190,000	NA	$(260,000)	(18%)
Non-Covered Activities	-	0%	-	0%	-	0%	-	NA	-	NA
Other Development Exactions	-	0%	1,220,000	0%	3,500,000	1%	3,500,000	NA	2,280,000	187%
Subtotal	$-	0%	$2,670,000	1%	$4,690,000	1%	4,690,000	NA	2,020,000	76%
Local, State & Federal Funds										
State/Federal Funds	$106,960,000	32%	$110,150,000	28%	$126,000,000	32%	$19,040,000	18%	$15,850,000	14%
Local Land Capital Funds	39,620,000	12%	44,130,000	11%	46,170,000	12%	6,550,000	17%	2,040,000	5%
Local Operating Funds	22,640,000	7%	25,210,000	6%	17,940,000	5%	(4,700,000)	(21%)	(7,270,000)	(29%)
Subtotal	$169,220,000	50%	$179,490,000	46%	$190,110,000	48%	20,890,000	12%	10,620,000	6%
Other Funds										
Interest Earnings[1]	$-	0%	$-	0%	$480,000	0%	480,000	NA	480,000	NA
Miscellaneous[1]	-	0%	-	0%	20,000	0%	20,000	NA	20,000	NA
Subtotal	$-	0%	$-	0%	$500,000	0%	$500,000	NA	500,000	NA
Total Funding	**$338,260,000**	100%	**$389,660,000**	100%	**$397,550,000**	100%	$59,290,000	18%	$7,890,000	2%
Total Costs	**336,260,000**		**386,820,000**		**396,430,000**		60,170,000	18%	9,610,000	2%
Surplus / (Deficit)	**$2,000,000**		**$2,840,000**		**$1,120,000**		$(880,000)		$(1,720,000)	

Note: 2006 Plan and 2013 Audit revenues are inflated to 2016 dollars using the inflation index in Appendix F.

Sources: 2006 Plan, Table 9-8 and Appendix H; 2013 Fee Audit, Table 7.1, p. 43; Table 8.1.

Table 8.3: Funding Plan Comparison – Maximum Urban Development Area (2016 dollars)

Cost Category	2006 Plan		2013 Fee Audit		2017 Fee Audit		2017 Audit vs. 2006 Plan		2017 Audit vs. 2013 Audit	
Mitigation Fees										
Development Fee	$192,100,000	48%	$206,470,000	46%	$225,910,000	47%	$33,810,000	18%	$19,440,000	9%
Wetland Mitigation Fee	27,180,000	7%	48,100,000	11%	42,200,000	9%	15,020,000	55%	(5,900,000)	(12%)
Rural Infrastructure Fees	10,110,000	3%	10,040,000	2%	9,670,000	2%	(440,000)	(4%)	(370,000)	(4%)
Temporary Impact Fee	-	0%	1,210,000	0%	4,680,000	1%	4,680,000	NA	3,470,000	287%
Subtotal	$229,390,000	58%	$265,820,000	59%	$282,460,000	59%	53,070,000	23%	16,640,000	6%
Other Fees & Exactions										
Administrative Charges	$-	0%	$1,450,000	0%	$1,190,000	0%	1,190,000	NA	$(260,000)	(18%)
Non-Covered Activities	-	0%	-	0%	-	0%	-	NA	-	NA
Other Development Exactions	-	0%	1,220,000	0%	3,500,000	1%	3,500,000	NA	2,280,000	187%
Subtotal	$-	0%	$2,670,000	1%	$4,690,000	1%	4,690,000	NA	2,020,000	76%
Local, State & Federal Funds										
State/Federal Funds	$106,960,000	27%	$110,150,000	25%	$126,000,000	26%	$19,040,000	18%	$15,850,000	14%
Local Capital Funds	39,620,000	10%	44,130,000	10%	46,170,000	10%	6,550,000	17%	2,040,000	5%
Local Operating Funds	22,640,000	6%	25,210,000	6%	17,940,000	4%	(4,700,000)	(21%)	(7,270,000)	(29%)
Subtotal	$169,220,000	42%	$179,490,000	40%	$190,110,000	40%	20,890,000	12%	10,620,000	6%
Other Funds										
Interest Earnings[1]	$-	0%	-	0%	$480,000	0%	480,000	NA	480,000	NA
Miscellaneous[1]	-	0%	-	0%	20,000	0%	20,000	NA	20,000	NA
Subtotal	$-	0%	$-	0%	$500,000	0%	$500,000	NA	500,000	NA
Total Funding	**$398,610,000**	100%	**$447,980,000**	100%	**$477,760,000**	100%	$79,150,000	20%	$29,780,000	7%
Total Costs	**396,200,000**		**445,140,000**		**476,640,000**		80,440,000	20%	31,500,000	7%
Surplus / (Deficit)	**$2,410,000**		**$2,840,000**		**$1,120,000**		$(1,290,000)		$(1,720,000)	

Note: 2006 Plan and 2013 Audit revenues are inflated to 2016 dollars using the inflation index in Appendix F.
Sources: 2006 Plan, Table 9-8 and Appendix H; 2013 Fee Audit, Table 7.1, p. 43; Table 8.1.

APPENDIX A: DEVELOPMENT IMPACTS THROUGH 2016

The following tables provide detail for impacts from covered activities (impacts from development projects and other covered activities) for years 1-9 (2008 through 2016) of the Plan:

Table A.1 provides detail for permanent land conversion.

Table A.2 provides detail for wetland impacts.

Table A.3 provides detail for temporary land conversion and wetland impacts.

Table A.1: Covered Activities Through December 31, 2016 (Year 9) – Permanent Land Conversion (acres)

Year	Project	Urban Development Area			Rural Infra-structure[1]
		Zone 1	Zone 2	Zone 3	
2009	CCC LP07-2033: Verizon Wireless Martin Cell Tower Project				1.39
2009	CCC LP09-2002: US Coast Guard/SBA Cell Tower Project				1.158
2009	PSE: State Route 4 Bypass, Segment 4, Phase 2	24.69	23.81		
2010	PSE: CalTrans SR4 Median Buffer & Shoulder Widening Project				7.34
2010	CCC PWD: Vasco Road Safety Improvements				6.201
2010	CCC LP09-2033: Horizon Cell Tower Project				1.19
2010	PSE: eBart Phase 1 Project				0.3
2011	CCC LP10-2070: Morgan Territory Rd Telecommunications Facility Project				0.901
2011	CCC LP09-2037: Camino Diablo Vasco Telecommunications Facility Project				2.35
2011	CCC LP10-2082: J4 Byron Hot Springs Communications Facility				0.8
2011	CCC PWD: Balfour Rd Culvert Repair Project				0.01
2011	CCC PWD: Byron Hwy Shoulder Widening Project-Phase 1				0.44
2011	CCC PWD: Vasco Camino Diablo Intersection				1.94
2011	PSE: ConocoPhillips Line 200 Repair & Anode		0.003		
2011	PSE: Oakley Generating Station (Original-3rd Amendment) Project[Note 2]	16.72			
2011	City of Oakley: Stonewood III-Unit #1 Sub #9183	2.21			
2011	City of Pittsburg: Trash Capture Demonstration Project	0.02			
2011	City of Brentwood: New Meetinghouse Brentwood			3.4	

Year	Project	Urban Development Area			Rural Infra-structure[1]
		Zone 1	Zone 2	Zone 3	
2012	CCC PWD: Deer Valley Road Safety Improvement Project				0.53
2012	CCC PWD: Marsh Creek Should Widening near Round Valley Regional Preserve Project				2.79
2012	CCC BIG12-0004598: EBRIX Los Vaqueros Communication Facility				0.026
2012	CCC LP10-2009: Clayton Regency Mobile Home Park Emergency H2O Pipeline Extension				0.5
2012	EBRPD Round Valley Pedestrian Bridge Project				0.15
2012	City of Oakley: iPark Oakley Project	9.14			
2012	PSE: eBart Phase II Extension				37.91
2012	PSE: eBart Phase II Extension-1st & 2nd Amend				2.56
2012	Upper Sand Creek Detention Basin Expansion		6.89		
2013	City of Brentwood: AutoZone Store 4136	0.9			
2013	City of Oakley: Emerson Ranch	138.25			
2013	CCC: Clayton Regency Mobile Home Park Stormdrain Outfall				0.2
2013	PSE: SR160/SR4 Bypass Phase II Connectors	18.01			
2013	Phillips 66 Pipeline Repair, 196,920.27.22				
2013	PSE: Chevron Pipeline KLM Site 1357 Repair		0.007		
2014	City of Brentwood: Ferro/Ronconi	42.23			
2014	CCC PWD: Pacifica Ave Sidewalk	0.204			
2014	CCC PWD: Marsh Creek Bridge Scour Repair				0.003
2014	CCC PWD: Marsh Creek 142 Wingwall Repair				0.009
2014	CCC PWD: Deer Valley Road Shoulder Widening				1.77
2014	CCC PWD: Marsh Creek Detention Center Bridge Replacement				0.18
2014	CCC PWD: Marsh Creek Road Safety Improvements				1.3
2014	CCC LP13-2097: Verizon Wireless Bethel Island	0.036			
2014	CCC LP13-2111: AT&T Co-location Marsh Creek Monopine				0.000226
2014	CCC LP13-2069: Marsh Creek Cell Tower				0.019
2015	City of Brentwood: Bella Fiore	13.5			
2015	City of Brentwood: Celebration Preschool	0.87			
2015	City of Brentwood: Mangini	9.77			
2015	CCC LP14-2044: Mariner's Discovery Church	3.49			
2015	City of Oakley PW: Marsh Creek Pedestrian Bridge	0.02			
2015	City of Brentwood: Mission Grove	15.6			
2015	City of Brentwood: Palmilla Phase I	20.64			
2015	Duane Martin Jr. Vasco Caves				0.1
2015	City of Pittsburg: Greystone Place			4.9	
2015	Hess Water Trough Installation				0.01
2015	Horse Valley Wetland Creation Test Pits				
2015	City of Brentwood PW: John Muir Parkway-Phase II	0.33	2.36		

Year	Project	Urban Development Area			Rural Infra-structure[1]
		Zone 1	Zone 2	Zone 3	
2015	PSE: PG&E Pole Replacement				
2015	PSE: Phillips 66 Line 200 Vasco Rd Remediation				
2015	Vaquero Farms S. Wetland Creation & Repair				0.01
2015	CCC PWD: Vasco Road Embankment Repair				0.02
2015	CCC PWD: Marsh Creek Safety Improvement Project (Fed. No. HRRL-5928 (095))		0.76		
2016	City of Brentwood: Maffeo	9.1			
2016	City of Brentwood: Palmilla Phase II	38.7			
2016	City of Brentwood: Sparrow at Marsh Creek	6.71			
2016	City of Brentwood: Cornerstone Church	4.51			
2016	City of Brentwood: Elite (Pacific Union) Self Storage	4			
2016	City of Oakley: Verizon Wireless Empire Oakley Road	0.33			
2016	City of Pittsburg: Sonic Drive-In Project			1.22	
2016	City of Brentwood: Tractor Supply Project			2.8	
2016	City of Pittsburg: Delta Gateway Pad No. 12	1.8			
2016	CCC PWD: Port Chicago Hwy-Willow Pass Sidewalk Improvements	0.156		0.143	
2016	CCC PWD: Canal Road Sidewalk and Bike Lanes Project	0.4709			
2016	CCC LP15-2029: Timber Rd Communication Facility				0.05
2016	CCC TP12-0026: Moita Road Improvement Project		0.36		0.9
2016	PSE: SR4/Balfour & First Amendment[Note 2]	29.58			
	Total	411.9869	34.19	12.463	73.057226

Note: "PSE" is participating special entity. "CCC" is Contra Costa County. "CTR" is contribution to recovery.Certain impacts reported in the 2013 Audit have been corrected in this table.Impact to other land cover types not tracked for Stay-Ahead provision (see Table 14 in the Conservancy's Annual Report) are not included here because they are impacts from non-covered activities and are not counted against permit limits.

[1] Covered activities occurring outside the UDA could occur in either zones 1 or 2. Includes rural road projects as shown in Table 9-6 of the 2006 Plan, plus rural infrastructure projects and activities, and activities within the preserve system (see Sections 2.3.2 through 2.3.4 of the 2006 Plan).

[2] There were various amendments to this project over multiple years and only the final total impacts are shown here.

Sources: ECCC Habitat Conservancy.

Table A.2: Covered Activities Through December 31, 2016 (Year 9) – Aquatic Land Cover Types

		Wetlands								Streams	
Year	**Project**	**Total**	Ripar-ian/ Wood-land	Perma-nent Wet-land	Sea-sonal Wet-land	Alkali Wet-land	Pond	Res-ervoir	Slough	≤ 25 ft	> 25 ft
	Units	*(acres)*								*(linear feet)*	
2008	CCC PWD: Marsh Creek Emergency Bridge Repair Project										0.3096
2009	PSE: State Route 4 Bypass, Segment 4, Phase 2	**0.19**	*0.19*								
2009	City of Pittsburg: RileMart- 2515 Ant-Pitt Hwy Use 1										
2010	PSE: CalTrans SR4 Median Buffer & Shoulder Widening Project	**0.41**	*0.05*		*0.29*				*0.07*		6
2010	CCC PWD: Vasco Road Safety Improvements	**0.007**		*0.006*	*0.001*					110	22
2011	CCC PWD: Balfour Rd Culvert Repair Project										12
2011	CCC PWD: Byron Hwy Shoulder Widening Project-Phase 1										47
2011	City of Pittsburg: Trash Capture Demonstration Project	**0.02**		*0.02*							
2012	CCC PWD: Deer Valley Road Safety Improvement Project	**0.13**				*0.13*					
2012	CCC PWD: Marsh Creek Should Widening near Round Valley Regional Preserve Project	**0.064**			*0.064*					29	
2012	Upper Sand Creek Detention Basin Expansion	**0.17**	*0.11*	*0.04*	*0.02*					295	
2013	CCC: Clayton Regency Mobile Home Park Stormdrain Outfall	**0.1**	*0.1*								
2013	PSE: Chevron Pipeline KLM Site 1357 Repair	**0.007**				*0.007*					
2014	CCC PWD: Pacifica Ave Sidewalk	**0.044**	*0.044*								36
2014	PSE: Chevron Pipeline KLM 32- 1st Ammend										
2014	CCC PWD: Marsh Creek Bridge Scour Repair	**0.003**	*0.003*								23
2014	CCC PWD: Marsh Creek 142 Wingwall Repair	**0.009**	*0.009*								
2014	CCC PWD: Deer Valley Road Shoulder Widening	**0.1**					*0.1*				
2014	CCC PWD: Marsh Creek Detention Center Bridge Replacement	**0.132**	*0.132*								60
2014	CCC PWD: Marsh Creek Road Safety Improvements									148	
2015	City of Oakley PW: Marsh Creek Pedestrian Bridge										15
2015	City of Brentwood: Palmilla Phase I										25

		Wetlands								Streams	
Year	**Project**	**Total**	Ripar-ian/ Wood-land	Perma-nent Wet-land	Sea-sonal Wet-land	Alkali Wet-land	Pond	Res-ervoir	Slough	≤ 25 ft	> 25 ft
2015	CCC PWD: Marsh Creek Safety Improvement Project (Fed. No. HRRL-5928 (095))	**0.02**	*0.02*							29	
2016	CCC PWD: Canal Road Sidewalk and Bike Lanes Project	**0.0039**	*0.0034*		*0.0005*					21	
2016	CCC TP12-0026: Moita Road Improvement Project									45	
2016	PSE: SR4/Balfour & First Amendment[Note 1]	**0.42**	*0.42*								
	Total	**1.8299**	*1.0814*	*0.066*	*0.3755*	*0.137*	*0.10*	-	*0.070*	677.00	246.3096

Note: "PSE" is participating special entity. "CCC" is Contra Costa County. "CTR" is contribution to recovery.

Certain impacts reported in the 2013 Audit have been corrected in this table.

Aquatic impacts (wetlands and streams) are included in land conversion impacts and are shown separately because of the additional wetland fee that applies.

[1] There were various amendments to this project over multiple years and only the final total impacts are shown here.

Sources: ECCC Habitat Conservancy.

Table A.3: Covered Activities Through December 31, 2016 (Year 9) – Temporary Impacts

Year	Project	Land Conversion		Streams	
			Wet-lands	≤ 25 ft	> 25 ft
	Units	*(acres)*	*(acres)*	*(linear feet)*	
2008	PSE: Ameresco Keller Canyon Landfill Gas Power Plant Project	0.6			
2008	CCC PWD: Marsh Creek Emergency Bridge Repair Project	0.038	0.038		38.7
2008	City of Pittsburg: Mt. Diablo Recycling Center Project	5			
2009	CCC LP07-2033: Verizon Wireless Martin Cell Tower Project	0.65			
2009	PSE: PG&E Contra-Costa-Las Positas Reconductoring Project	22.36			
2009	City of Pittsburg: RileMart- 2515 Ant-Pitt Hwy Use 1	12.5			
2010	PSE: CalTrans SR4 Median Buffer & Shoulder Widening Project	15.28	0.4		
2010	CCC PWD: Vasco Road Safety Improvements	5.4418	0.1228	230.5	118
2010	CCC LP09-2033: Horizon Cell Tower Project	0.74			
2010	PSE: ConocoPhillips Line 200 Repair & 1st Ammend	0.46			
2010	PSE: Shell Oil Coalinga-Avon Pipeline Repair	0.27			
2010	PSE: eBart Phase 1 Project	3.5			
2010	City of Pittsburg: JBM Construction Use of 2515 Ant-Pitts Hwy (Use 2)	12.5			
2010	City of Pittsburg: USS Psoco Site L-A Material	7.81			
2011	CCC LP10-2070: Morgan Territory Rd Telecommunications Facility Project	0.031			
2011	CCC LP09-2037: Camino Diablo Vasco Telecommunications Facility Project	0.86			
2011	CCC LP10-2082: J4 Byron Hot Springs Communications Facility	0.25			
2011	CCC PWD: Balfour Rd Culvert Repair Project	0.094		15	28
2011	CCC PWD: Byron Hwy Shoulder Widening Project-Phase 1	0.74			112
2011	CCC PWD: Vasco Camino Diablo Intersection	4.85			
2011	PSE: ConocoPhillips Line 200 Repair & Anode	1.37			
2011	PSE: ConocoPhillips Line 200 Repair-2nd Amend	0.05			
2011	PSE: Shell Oil Coalinga-Avon Pipeline Repair- 1st Amend	0.05			
2011	PSE: Oakley Generating Station (Original-3rd Amendment) Project[Note 3]	42.02			
2011	City of Pittsburg: Trash Capture Demonstration Project	0.06			
2011	City of Brentwood: New Meetinghouse Brentwood				
2011	City of Pittsburg: Bay Cities Paving & Grading for CA Ave Temp Storage Site	1.96			
2012	CCC PWD: Deer Valley Road Safety Improvement Project	1.63	0.23		

Year	Project	Land Conversion		Streams	
			Wet-lands	≤ 25 ft	> 25 ft
	Units	*(acres)*	*(acres)*	*(linear feet)*	
2012	CCC PWD: Marsh Creek Should Widening near Round Valley Regional Preserve Project	1.418	0.028	24	
2012	CCC BIG12-0004598: EBRIX Los Vaqueros Communication Facility	1.0621			
2012	CCC LP10-2009: Clayton Regency Mobile Home Park Emergency H2O Pipeline Extension	2.3			
2012	EBRPD Round Valley Pedestrian Bridge Project	0.83			
2012	PSE: CalTrans SR4 Median Buffer & Shoulder Widening Project- 2nd Amendment	1.05	0.6		
2012	PSE: Phillips 66 Vasco Road Line 200 Pipeline Emergency Release	24.22			
2012	PSE: Shell Oil Coalinga-Avon Pipeline Repair-2nd Amend	0.05			
2012	Emergency Marsh Creek Detention Center Bridge Repair	0.074		29	
2012	PSE: eBart Phase II Extension	2.22			
2012	PSE: eBart Phase II Extension-1st & 2nd Amend				
2012	Upper Sand Creek Detention Basin Expansion	57.63	3.38	3639	
2012	CCC PWD: Upper Sand Creek Detention Basin Excavation Project	5.3			
2012	City of Oakley PW: Marsh Creek Restoration at Creekside Park	3			
2013	CCC: Clayton Regency Mobile Home Park Stormdrain Outfall	0.08	0.04		
2013	City of Pittsburg: PGE PSEP California Avenue Valve Automation	1.55			
2013	PSE: SR160/SR4 Bypass Phase II Connectors	2.73			
2013	Phillips 66 Pipeline Repair, 196,920.27.22	0.13			
2013	PSE: Chevron Pipeline KLM Site 1357 Repair	0.837	0.599		
2013	PSE: Phillips 66 Pipeline Repair Line 200	0.25			
2013	PSE: Phillips 66 Pipeline Repair Line 200, First Ammend	0.8			
2013	PSE: Phillips 66 Pipeline Requirement Survey	0.002			
2013	PSE: PG&E Pittsburg-Tesla 230 kV Reconductoring & 1st Amend	10.74			
2013	CCC PWD: Marsh Creek Rd Emergency Cluvert Repair-Morgan Territory Rd	0.03			
2014	City of Brentwood PW: Non-potable Water Dist. System Phase II	0.8			
2014	CCC PWD: Three Stormwater Basins	0.201	0.201		
2014	City of Brentwood: Ferro/Ronconi				
2014	City of Pittsburg: Colombia Solar	96.69			
2014	City of Pittsburg: Mt. Diablo Recycling Center 5 ac Lease Site- 5 yr Ext.	5			
2014	City of Oakley: East Cypress Corridor Specfic Plan/Stockpile Permit	25.74			

Year	Project	Land Conversion		Streams	
			Wet-lands	≤ 25 ft	> 25 ft
	Units	*(acres)*	*(acres)*	*(linear feet)*	
2014	CCC PWD: Pacifica Ave Sidewalk	0.143	0.013		33
2014	CCC PWD: Marsh Creek Reservoir- Trash Rack Replacement	0.17	0.02		
2014	PSE: PG&E CC-Moraga 230(kV) Reconductoring & 1st Amend	17.51			
2014	PSE: Chevron Pipeline KLM 32	0.032	0.005		
2014	PSE: Chevron Pipeline KLM 32- 1st Ammend	0.005	0.005		
2014	CCC PWD: Marsh Creek Bridge Scour Repair	0.075	0.038		30.5
2014	CCC PWD: Marsh Creek 142 Wingwall Repair	0.14	0.14	33	72
2014	CCC PWD: Deer Valley Road Shoulder Widening	3.89	0.04		
2014	CCC PWD: Marsh Creek Detention Center Bridge Replacement	0.318	0.016		60
2014	CCC PWD: Marsh Creek Road Safety Improvements	0.43		21	
2014	CCC LP13-2097: Verizon Wireless Bethel Island	0.943			
2014	CCC LP13-2111: AT&T Co-location Marsh Creek Monopine	0.722315			
2014	CCC LP13-2069: Marsh Creek Cell Tower	1.235			
2014	PSE: Shell Pipeline North 20 ILI Repair and 1st Ammend	0.116			
2015	City of Oakley PW: Marsh Creek Pedestrian Bridge	0.03		8	
2015	City of Brentwood: Mission Grove				
2015	City of Brentwood: Palmilla Phase I	0.08			20
2015	Duane Martin Jr. Vasco Caves	1.02			
2015	City of Pittsburg: Greystone Place				
2015	Hess Water Trough Installation	0.19	0.05		
2015	Horse Valley Wetland Creation Test Pits	0.74			
2015	City of Brentwood PW: John Muir Parkway-Phase II	2.94			
2015	PSE: PG&E Pole Replacement	0.003			
2015	PSE: Phillips 66 Line 200 Vasco Rd Remediation	1.9			
2015	Vaquero Farms S. Wetland Creation & Repair	1.63			
2015	CCC PWD: Vasco Road Embankment Repair	0.54			
2015	CCC PWD: Marsh Creek Safety Improvement Project (Fed. No. HRRL-5928 (095))	0.8			
2016	City of Oakley: Verizon Wireless Empire Oakley Road	1.48			
2016	CCC PWD: Port Chicago Hwy-Willow Pass Sidewalk Improvements	0.284			
2016	CCC PWD: Canal Road Sidewalk and Bike Lanes Project	1.025	0.006	6	
2016	CCC LP15-2029: Timber Rd Communication Facility	1.21			
2016	CCC TP12-0026: Moita Road Improvement Project	2.32			
2016	PSE: PG&E T1047A Hydrotest	1.47			
2016	CCC PWD: Clifton Court Road Bridge Repair Project	0.064	0.014		
	Total	429.304215	5.9858	4,005.50	512.20

Year	Project	Land Conversion		Streams	
			Wet-lands	≤ 25 ft	> 25 ft
	Units	*(acres)*	*(acres)*	*(linear feet)*	

Note: "PSE" is participating special entity. "CCC" is Contra Costa County. "CTR" is contribution to recovery.

Certain impacts reported in the 2013 Audit have been corrected in this table.

Wetland and stream impacts are included in land conversion impacts and are shown separately because of the additional wetland fee that applies.

Sources: ECCC Habitat Conservancy.

APPENDIX B: LAND ACQUISITION COST ANALYSIS

The following tables provide detail for the land acquisition cost analysis update.

Table B.1

REMAINING LAND ACQUISITION BY COST CATEGORY, Acres and Estimated Total Cost
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

		Initial Urban Development Area				Maximum Urban Development Area			
Acquisition Cost Category	**Parcel Size**	**Acres**	**% of Total**	**Estimated Cost**	**% of Total**	**Acres**	**% of Total**	**Estimated Cost**	**% of Total**
OUTSIDE THE URBAN LIMIT LINE									
1	120 + acres	10,022	70%	$64,511,878	54%	14,410	71%	$92,598,003	55%
2	40 - 120 acres	1,814	13%	20,311,794	17%	3,252	16%	36,426,298	22%
3	10 - 40 acres	521	4%	12,111,660	10%	627	3%	14,451,580	9%
4	5 - 10 acres	15	0%	587,480	0%	33	0%	1,243,892	1%
5	< 5 acres	-	0%	-	0%	4	0%	240,350	0%
6	ALL, steep slopes	480	3%	2,160,000	2%	489	2%	2,202,300	1%
INSIDE THE URBAN LIMIT LINE		1,422	10%	19,669,487	16%	1,465	7%	20,498,210	12%
TOTAL		**14,273**	**100%**	**$119,352,299**	**100%**	**20,281**	**100%**	**$167,660,633**	**100%**

Note: includes acres that may be acquired outside the Inventory Area and outside Acquistion Analysis zones that do not count towards preserve targets but are part of larger preserve parcels.

Source: East Contra Costa County Habitat Conservancy and Hausrath Economics Group

Table B.2

LAND ACQUISITION COST FACTOR
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

OUTSIDE THE URBAN LIMIT LINE — **Per Acre Land Value Factor**

Acquisition Cost Category	Parcel Size	Slope Characteristics (percent of parcel)	2003 Valuation	2005 Valuation	2006 Valuation	2012 Valuation	2017 Valuation	Change from 2012
1	120 + acres	< 26%	$3,500	$4,800	$5,600	$5,300	**$6,400**	21%
2	40 - 120 acres	< 26%	$6,000	$8,200	$9,600	$7,500	**$11,200**	49%
3	10 - 40 acres	< 26%	$20,000	$27,400	$31,900	$18,600	**$22,000**	18%
4	5 - 10 acres	< 26%	$35,000	$48,000	$56,000	$49,000	**$38,000**	-22%
5	< 5 acres	< 26%	$50,000	$68,600	$80,000	$70,000	**$55,000**	-21%
6	ALL	> 26%	$3,000	$3,300	$3,800	$4,200	**$4,500**	7%

INSIDE THE URBAN LIMIT LINE — **Per Acre Land Value Factor**

Acquisition Cost Category	Currently Designated for Development (Yes/No)	Slope Characteristics (percent of parcel)	2003 Valuation	2005 Valuation	2006 Valuation	2012 Valuation	2017 Valuation	Change from 2012
7	No	<15%	$14,500	$18,300	$21,300	**$11,000**	**$19,000**	73%
8	No	15-26%	$10,100	$12,700	$14,800	**$6,600**	**$11,400**	73%
9	No	>26%	$3,600	$4,500	$5,200	**$2,800**	**$4,800**	71%
10	Yes	<15%	$45,000	$56,800	$66,200	**$35,000**	**$60,000**	71%
11	Yes	15-26%	$31,500	$39,760	$46,400	**$21,000**	**$36,000**	71%
12	Yes	>26%	$11,300	$14,263	$16,600	**$8,800**	**$15,000**	70%
INSIDE THE URBAN LIMIT LINE - BYRON AIRPORT								
13	na	na	$8,000	$8,800	$10,300	$6,200	**$10,700**	4%

Note: The 2017 land cost factor for the Byron Airport Area is based on the $8,000 per acre value estimated in 2003, adjusted by the 2017 percentage change from values originally estimated in 2003 for Cost Category 10--about 33 percent.

Source: East Contra Costa County Habitat Conservancy and Hausrath Economics Group

Table B.3

LAND ACQUISITION ANALYSIS - Price per acre for parcels > 120 acres (nominal dollars)
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

Transaction ID	Project/Property Name	Year of Sale	Acres	Purchase Price/Market Value	Price/Value per acre
EBRPD/ECCC Habitat Conservancy Land Acquisitions					
1	Souza 1 (appraisal)	2004 (2009)	575.1	$2,759,085	$4,798
2	Lentzner (appraisal)	2005 (2009)	320.0	$1,340,000	$4,188
3	Chaparral Springs	2008	183.0	$1,322,650	$7,228
4	Schwartz	2009	153.1	$803,880	$5,250
5	Souza 2	2009	190.6	$1,692,000	$8,879
6	Fox Ridge	2009	221.6	$1,760,000	$7,941
7	Vaquero Farms South	2009	708.2	$2,454,400	$3,466
8	Vaquero Farms North	2010	577.0	$2,770,000	$4,801
9	Martin	2010	232.4	$2,025,855	$8,717
10	Grandma's Quarter	2010	157.0	$1,036,200	$6,600
11	Ang	2010	460.6	$2,763,840	$6,000
12	Souza 3	2010	697.4	$2,222,765	$2,905
13	Irish Canyon - Chopra	2010	320.0	$1,760,000	$5,500
14	Barron	2010	798.0	$2,952,600	$3,700
15	Land Waste Management	2010	469.4	$3,050,000	$6,498
16	Austin 1 (Thomas Southern)	2010	852.3	$3,240,000	$3,801
17	Austin 2 (Thomas Central)	2010	160.0	$624,000	$3,900
19	Vaquero Farms Central	2012	319.9	$1,855,700	$5,800
23	Thomas North	2012	135.0	$863,900	$6,400
26	Smith	2014	960.0	$5,376,000	$5,600
27	Roddy Ranch (part)	2014	994.5	$13,500,000	$13,575
28	Viera/Perley	2015	260.0	$1,950,000	$7,500
30	Nunn	2016	646.0	$6,072,000	$9,400
32	Coelho	2016	199.4	$1,495,750	$7,500
Weighted Average					**$6,203**
Save Mount Diablo					
SMD 4	Mangini Ranch	2007	208.0	$1,454,530	$6,993
SMD 23	Curry Canyon Ranch	2013	1,080.5	$7,173,800	$6,639
Weighted Average					**$6,696**
Contra Costa Water District					
CCWD 5	Leonardini	2010	138.0	$899,000	$6,514
CCWD 6	Church Property	2011	340.0	$2,618,000	$7,700
CCWD 7	Evergreen	2011	658.0	$5,800,000	$8,815
Weighted Average					**$8,202**
Overall Weighted Average					**$6,426**
				Land Cost Factor for 2017 Update:	**$6,400**

Note: Adjustments for some of the acquisitions for the East Contra Costa County Habitat Conservancy remove the value of lease income and conservation easements: Souza 1, Vaquero Farms South, Martin, Souza 3, Irish Canyon, and Austin 1.

Souza 1 and Lentzner analyses reflect 2009 appraisals prepared for the Conservancy in support of matching funds applications. The appraisals assumed the properties were available for private ownership and accounted for the conservation easement value on Souza 1.

Sources: East Contra Costa Habitat Conservancy, Save Mount Diablo, Contra Costa Water District, and Hausrath Economics Group

Table B.4

LAND ACQUISITION ANALYSIS - Price per acre for parcels 40 - 120 acres (nominal dollars)
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

Transaction ID	Project/Property Name	Year of Sale	Acres	Purchase Price/Market Value	Price/Value per acre
EBRPD/ECCC Habitat Conservancy Land Acquisitions					
18	Affinito - large parcel (appraisal)	2012 (2010)	101.5	$862,500	$8,500
20	Galvin	2012	61.7	$370,000	$5,999
25	Adrienne Galvin	2013	112.0	$884,400	$7,900
31	Hanson Hills	2016	76.5	$730,000	$9,547
Weighted Average					**$8,098**
Save Mount Diablo					
SMD 1	Wright Canyon	2001	76.0	$640,000	$8,421
SMD 20	Highland Springs	2012	105.0	$495,000	$4,714
SMD 22	Marsh Creek 8	2013	51.1	$690,684	$13,506
Weighted Average					**$7,865**
Contra Costa Water District					
CCWD 4	Acrew	2010	103.0	$694,000	$6,738
Contra Costa County Assessor's Data - Agricultural land use, unimproved or improvements less than 5 percent of value)					
Assessor 25	Brentwood	2014	40.3	$680,000	$16,881
Assessor 26	Brentwood	2014	40.4	$680,000	$16,828
Assessor 27	Brentwood	2015	40.4	$1,335,000	$33,012
Assessor 28	Brentwood	2016	50.3	$375,000	$7,463
Assessor 29	Byron	2013	72.9	$1,000,000	$13,710
Assessor 30	Knightsen	2012	73.8	$725,000	$9,827
Assessor 31	Byron	2015	76.4	$1,712,500	$22,417
Assessor 32	Byron	2015	80.0	$1,500,000	$18,750
Assessor 33	Byron	2014	85.0	$550,000	$6,471
Assessor 34	Byron	2013	108.9	$500,000	$4,592
Assessor 35	Brentwood	2016	57.7	$385,000	$6,669
Assessor 36	Byron	2016	68.8	$760,000	$11,053
Assessor 37	Brentwood	2014	49.3	$1,000,000	$20,284
Assessor 38	Byron	2016	40.9	$1,000,000	$24,438
Weighted Average					**$13,787**
Overall Weighted Average					**$11,178**
				Land Cost Factor for 2017 Update:	**$11,200**

Note: Affinito value reflects the appraised market value of the largest parcel in a five-parcel acquisition that closed in February 2012. The value is adjusted to reflect only the unimproved land, as presented in the 2010 appraisal.

Sources: East Contra Costa Habitat Conservancy, Save Mount Diablo, Contra Costa Water District, Contra Costa County Assessor, and Hausrath Economics Group

Table B.5

LAND ACQUISITION ANALYSIS - Price per acre for parcels 10 - 40 acres (nominal dollars)
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

Transaction ID	Project/Property Name	Year of Sale	Acres	Purchase Price/Market Value	Price/Value per acre
EBRPD/ECCC Habitat Conservancy Land Acquisitions					
21	Moss Rock	2012	20.5	$410,000	$20,010
22	Fan	2012	21.0	$220,000	$10,476
Weighted Average					**$15,184**
Save Mount Diablo					
SMD 3	Young Canyon	2006	17.6	$300,000	$17,026
SMD 7	Marsh Creek 2	2008	17.0	$320,000	$18,824
SMD 12	Oak Hill	2010	10.0	$87,500	$8,750
SMD 13	Oak Hill	2010	10.0	$87,500	$8,750
SMD 14	Oak Hill	2010	10.0	$87,500	$8,750
SMD 15	Oak Hill	2010	10.0	$87,500	$8,750
Weighted Average					**$12,999**
Contra Costa County Assessor's Data - Agricultural land use, unimproved or improvements less than 5 percent of value)					
Assessor 14	Brentwood	2015	10.0	$280,000	$27,978
Assessor 15	Knightsen	2015	10.1	$295,000	$29,093
Assessor 16	Oakley	2015	10.3	$250,000	$24,307
Assessor 17	Knightsen	2013	10.6	$395,000	$37,194
Assessor 18	Brentwood	2016	14.5	$490,000	$33,910
Assessor 19	Byron	2014	15.0	$300,000	$20,000
Assessor 20	Brentwood	2012	16.9	$478,000	$28,284
Assessor 21	Brentwood	2014	19.6	$650,000	$33,101
Assessor 22	Brentwood	2013	21.5	$450,000	$20,971
Assessor 23	Byron	2016	31.1	$700,000	$22,509
Assessor 24	Clayton	2014	20.3	$625,000	$30,788
Weighted Average					**$27,310**
Overall Weighted Average					**$22,003**
				Land Cost Factor for 2017 Update:	**$22,000**

Sources: East Contra Costa Habitat Conservancy, Save Mount Diablo, Contra Costa County Assessor, and Hausrath Economics Group

Table B.6

LAND ACQUISITION ANALYSIS - Price per acre for parcels 5 - 10 acres (nominal dollars)
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

Transaction ID	Project/Property Name	Year of Sale	Acres	Purchase Price/Market Value	Price/Value per acre
EBRPD/ECCC Habitat Conservancy Land Acquisitions					
18	Affinito - part (appraisal)	2012 (2010)	6.50	$215,000	$33,077
Save Mount Diablo					
SMD 6	Marsh Creek 1	2007	8.92	$315,000	$35,314
SMD 10	Dry Creek	2010	5.18	$84,000	$16,216
SMD 16	Marsh Creek 5	2011	7.37	$125,000	$16,972
SMD 18	Marsh Creek 6	2011	5.74	$395,000	$68,815
SMD 19	Marsh Creek 7	2011	7.57	$574,000	$75,826
Weighted Average					**$42,933**
Contra Costa County Assessor's Data - Rural land use, unimproved or improvements less than 5 percent of value					
Assessor 2	Brentwood	2015	5.00	$225,000	$45,000
Assessor 3	Clayton	2015	5.01	$220,000	$43,912
Assessor 4	Brentwood	2014	5.02	$250,000	$49,801
Assessor 5	Knightsen	2016	5.81	$275,000	$47,332
Assessor 6	Clayton	2015	6.42	$295,000	$45,950
Assessor 7	Brentwood	2014	6.45	$262,500	$40,698
Assessor 8	Knightsen	2015	8.55	$335,000	$39,190
Assessor 9	Knightsen	2013	8.87	$210,000	$23,675
Assessor 10	Knightsen	2016	9.33	$295,000	$31,618
Assessor 11	Brentwood	2013	9.44	$220,000	$23,305
Assessor 12	Knightsen	2016	9.49	$295,000	$31,085
Assessor 13	Brentwood	2016	9.72	$405,000	$41,667
Weighted Average					**$36,893**
Overall Weighted Average					**$38,314**
				Land Cost Factor for 2017 Update:	**$38,000**

Note: Affinito value reflects the appraised market value of the 6.5 acre parcel in a five-parcel acquisition that closed in February 2012. The value of that land as an unimproved parcel was appraised independently in 2010.

Sources: East Contra Costa Habitat Conservancy, Save Mount Diablo, Contra Costa County Assessor, and Hausrath Economics Group

Table B.7

LAND ACQUISITION ANALYSIS - Price per acre for parcels less than 5 acres (nominal dollars)
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

Transaction ID	Project/Property Name	Year of Sale	Acres	Purchase Price/Market Value	Price/Value per acre
EBRPD/ECCC Habitat Conservancy Land Acquisitions					
18	Affinito - A (appraisal)	2012 (2010)	3.94	$195,000	$49,492
18	Affinito - B (appraisal)	2012 (2010)	2.69	$175,000	$65,056
18	Affinito - C (appraisal)	2012 (2010)	1.89	$165,000	$87,302
24	Alaimo	2013	2.31	$185,000	$80,087
29	Clayton Radio LLC	2015	2.02	$75,000	$37,129
Save Mount Diablo					
SMD 8	Marsh Creek 4	2008	2.65	$325,000	$122,642
Contra Costa County Assessor's Data - Rural land use, unimproved					
Assessor 1	Brentwood	2015	1.57	$120,000	$76,433
Overall Weighted Average					**$72,642**
				Land Cost Factor for 2017 Update:	**$55,000**

Note: The Affinito A, B, and C values reflects the appraised market values of each of the three small parcels in a five-parcel acquisition tht closed in February 2012. The unimproved parcels were appraised independently in 2010.

Only a small number of parcels less than 5 acres might be acquired as part of the acquisition strategy to fill gaps between larger parcels. Following the rationale presented in "NCCP/HCP Land Cost Data", Technical Memorandum to John Kopchik, prepared by Economic & Planning Systems, August 3, 2006 and included in Appendix G: HCP/NCCP Cost Data, the value assumption is based on a per-acre premium above the average value for the 5 - 10 acre parcels ($38,000 for this 2017 update). In the 2006 analysis, the premium was about 40 percent. This 2017 analysis assumes a roughly similar premium, resulting in the $55,000 per acre land cost factor for parcels less than five acres.

Sources: East Contra Costa Habitat Conservancy, Save Mount Diablo, Contra Costa County Assessor, and Hausrath Economics Group

Table B.8

LAND ACQUISITION ANALYSIS - Basis for price per acre calculation for parcels inside the Urban Limit Line
EAST CONTRA COSTA COUNTY HCP/NCCP
2017 Update

Item	Value		Source
Average Sales Price Per Single Family Unit	$590,000	a	New Home Sales 2016 Antioch, Brentwood, Oakley, and Pittsburg
Units per Gross Acre	4.7	b	Average Lot Size of 7,000 sqft and net to gross ratio of 75 percent
Total Development Value	$2,753,614	c=a*b	Calculated
Raw Entitled Land Value as % of Development Value	9.0%	d	Based on standard 10 percent ratio, adjusted down slightly based on real estate broker conversations
Raw Entitled Land Value	$247,825	e=c*d	Calculated
Discount Rate	12%	f	Average land speculator discount rate
Category 10 - 12.5 years to entitlement/ development	$60,106	g=e/(1+f)^12.5	Calculated
Category 7 - 22.5 years to entitlement/ development	$19,353	h=e/(1+f)^22.5	Calculated

Note: This table updates the cost factors in the calculations for this land cost factor as established in the August 3, 2006 Technical Memorandum from Economic & Planning Systems, "NCCP/HCP Land Cost Data". The average sales price for new single family units is updated to reflect current market conditions.

This table calculates the average values for cost categories 7 and 10, Following the methodology established in 2006, the values for categories 8 and 11 are discounted 40 percent from the value for a level site and the values for categories 9 and 12 are discounted 75 percent from the average for the level site.

Sources: "Annual New Home Sale Data for Selected Contra Costa County Cities ," from CoreLogic provided by DataquickNews; Hausrath Economics Group

APPENDIX C: INITIAL UDA COST MODEL UPDATE

The following tables provide comprehensive documentation for the cost model update based on estimated impacts for the initial urban development area.

East Contra Costa County HCP/NCCP
2017 Update
Implementation Cost Data and Assumptions with Initial Urban Development Area

Summary of East Contra Costa HCP Implementation Costs for Initial Urban Development Area
2017 Update
(2016 dollars rounded to the nearest $10,000)

Total Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total (2016)**
Program Administration	$160,000	$6,800,000	$5,760,000	$4,630,000	$4,640,000	$4,650,000	$26,630,000
Land Acquisition	$170,000	$88,930,000	$36,960,000	$30,500,000	$30,500,000	$30,500,000	$217,550,000
Planning and Design	$0	$1,930,000	$2,110,000	$1,640,000	$1,060,000	$1,060,000	$7,810,000
Habitat Restoration/Creation	$0	$3,910,000	$11,290,000	$9,410,000	$9,410,000	$9,410,000	$43,430,000
Environmental Compliance	$0	$770,000	$1,060,000	$990,000	$820,000	$0	$3,640,000
Preserve Management and Maintenance	$0	$1,930,000	$5,270,000	$5,470,000	$7,620,000	$8,690,000	$28,990,000
Monitoring, Research, and Adaptive Management	$0	$900,000	$2,410,000	$2,770,000	$3,230,000	$3,580,000	$12,890,000
Remedial Measures	$0	$0	$330,000	$200,000	$760,000	$1,800,000	$3,080,000
Contingency	$0	$0	$1,060,000	$960,000	$1,090,000	$1,170,000	$4,280,000
Total	**$330,000**	**$105,170,000**	**$66,250,000**	**$56,570,000**	**$59,130,000**	**$60,860,000**	**$348,300,000**

Capital Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total (2016)**
Program Administration	INCLUDED IN STAFF AND OVERHEAD COSTS						
Land Acquisition: acquisition and site improvements	$0	$86,370,000	$35,160,000	$29,400,000	$29,400,000	$29,400,000	$209,720,000
Planning and Design	$0	$0	$0	$0	$0	$0	$0
Habitat Restoration/Creation	$0	$0	$6,990,000	$5,820,000	$5,820,000	$5,820,000	$24,460,000
Preserve Management and Maintenance	$0	$0	$0	$0	$0	$0	$0
Monitoring, Research, and Adaptive Management	$0	$0	$0	$0	$0	$0	$0
Remedial Measures	$0	$0	$330,000	$200,000	$760,000	$1,800,000	$3,080,000
Total	**$0**	**$86,370,000**	**$42,480,000**	**$35,420,000**	**$35,980,000**	**$37,020,000**	**$237,260,000**

Operational Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total (2016)**
Program Administration	$160,000	$6,800,000	$5,760,000	$4,630,000	$4,640,000	$4,650,000	$26,630,000
Land Acquisition: transactional costs	$170,000	$2,560,000	$1,800,000	$1,100,000	$1,100,000	$1,100,000	$7,830,000
Planning and Design	$0	$1,930,000	$2,110,000	$1,640,000	$1,060,000	$1,060,000	$7,810,000
Habitat Restoration/Creation	$0	$3,910,000	$4,300,000	$3,590,000	$3,590,000	$3,590,000	$18,970,000
Environmental Compliance	$0	$770,000	$1,060,000	$990,000	$820,000	$0	$3,640,000
Preserve Management and Maintenance	$0	$1,930,000	$5,270,000	$5,470,000	$7,620,000	$8,690,000	$28,990,000
Monitoring, Research, and Adaptive Management	$0	$900,000	$2,410,000	$2,770,000	$3,230,000	$3,580,000	$12,890,000
Contingency	$0	$0	$1,060,000	$960,000	$1,090,000	$1,170,000	$4,280,000
Total	**$330,000**	**$18,800,000**	**$23,770,000**	**$21,150,000**	**$23,150,000**	**$23,840,000**	**$111,040,000**

Summary of East Contra Costa HCP Implementation Costs for Initial Urban Development Area
2017 Update
(2016 dollars not rounded)

Total Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total**
Program Administration	$159,352	$6,795,011	$5,763,667	$4,625,183	$4,636,476	$4,647,769	$26,627,458
Land Acquisition	$165,742	$88,927,630	$36,962,450	$30,497,618	$30,497,618	$30,497,618	$217,548,675
Planning and Design	$0	$1,931,148	$2,114,064	$1,635,020	$1,064,870	$1,064,870	$7,809,972
Habitat Restoration/Creation	$0	$3,909,578	$11,291,201	$9,409,334	$9,409,334	$9,409,334	$43,428,780
Environmental Compliance	$0	$770,553	$1,064,764	$992,070	$817,070	$0	$3,644,457
Preserve Management and Maintenance	$0	$1,929,601	$5,273,082	$5,469,235	$7,619,235	$8,694,235	$28,985,388
Monitoring, Research, and Adaptive Management	$0	$897,309	$2,410,961	$2,769,446	$3,225,504	$3,581,812	$12,885,034
Remedial Measures	$0	$0	$329,018	$200,632	$755,469	$1,799,321	$3,084,440
Contingency	$0	$0	$1,062,909	$963,855	$1,085,207	$1,168,676	$4,280,646
Total	**$325,094**	**$105,160,830**	**$66,272,115**	**$56,562,393**	**$59,110,782**	**$60,863,635**	**$348,294,849**

Capital Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total**
Program Administration	INCLUDED IN STAFF AND OVERHEAD COSTS						
Land Acquisition: acquisition and site improvements	$0	$86,372,000	$35,161,110	$29,395,531	$29,395,531	$29,395,531	$209,719,704
Planning and Design	$0	$0	$0	$0	$0	$0	$0
Habitat Restoration/Creation	$0	$0	$6,988,585	$5,823,821	$5,823,821	$5,823,821	$24,460,049
Preserve Management and Maintenance	$0	$0	$0	$0	$0	$0	$0
Monitoring, Research, and Adaptive Management	$0	$0	$0	$0	$0	$0	$0
Remedial Measures	$0	$0	$329,018	$200,632	$755,469	$1,799,321	$3,084,440
Total	**$0**	**$86,372,000**	**$42,478,713**	**$35,419,985**	**$35,974,821**	**$37,018,674**	**$237,264,193**

Operational Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total**
Program Administration	$159,352	$6,795,011	$5,763,667	$4,625,183	$4,636,476	$4,647,769	$26,627,458
Land Acquisition: due diligence, transaction costs	$165,742	$2,555,630	$1,801,340	$1,102,086	$1,102,086	$1,102,086	$7,828,970
Planning and Design	$0	$1,931,148	$2,114,064	$1,635,020	$1,064,870	$1,064,870	$7,809,972
Habitat Restoration/Creation	$0	$3,909,578	$4,302,615	$3,585,513	$3,585,513	$3,585,513	$18,968,731
Environmental Compliance	$0	$770,553	$1,064,764	$992,070	$817,070	$0	$3,644,457
Preserve Management and Maintenance	$0	$1,929,601	$5,273,082	$5,469,235	$7,619,235	$8,694,235	$28,985,388
Monitoring, Research, and Adaptive Management	$0	$897,309	$2,410,961	$2,769,446	$3,225,504	$3,581,812	$12,885,034
Contingency	$0	$0	$1,062,909	$963,855	$1,085,207	$1,168,676	$4,280,646
Total	**$325,094**	**$18,788,830**	**$23,793,402**	**$21,142,408**	**$23,135,961**	**$23,844,961**	**$111,030,655**

NOTE: Original unit cost estimates for the 2006 HCP/NCCP were in 2005 dollars, inflated to 2006 dollars for use in the plan document.

Consumer Price Index - All Urban Consumers
Original Data Value

Series Id: CUURA422SA0

Data extracted on: March 29, 2017 (8:35:58 PM)

Not Seasonally Adjusted
Area: San Francisco-Oakland-San Jose, CA
Item: All items
Base Period: 1982-84=100
Years: 2005 to 2017

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	HALF1	HALF2	2016 dollars
2005		201.2		202.5		201.2		203.0		205.9		203.4	202.7	201.5	203.9	0.7610
2006		207.1		208.9		209.1		210.4		211.0		210.4	209.2	207.9	210.6	0.7855
2007		213.688		215.842		216.123		216.240		217.949		218.485	216.048	214.736	217.361	0.8112
2008		219.612		222.074		225.181		225.411		225.824		218.528	222.767	221.730	223.804	0.8364
2009		222.166		223.854		225.692		225.801		226.051		224.239	224.395	223.305	225.484	0.8425
2010		226.145		227.697		228.110		227.954		228.107		227.658	227.469	226.994	227.944	0.8540
2011		229.981		234.121		233.646		234.608		235.331		234.327	233.390	232.082	234.698	0.8763
2012		236.880		238.985		239.806		241.170		242.834		239.533	239.650	238.099	241.201	0.8998
2013		242.677		244.675		245.935		246.072		246.617		245.711	245.023	243.894	246.152	0.9199
2014		248.615		251.495		253.317		253.354		254.503		252.273	251.985	250.507	253.463	0.9461
2015		254.910		257.622		259.117		259.917		261.019		260.289	258.572	256.723	260.421	0.9708
2016		262.600		264.565		266.041		267.853		270.306		269.483	266.344	263.911	268.777	1.0000
2017		271.626														

Employment Cost Index (NAICS)
Original Data Value

Series Id: CIU2010000120000I
Not seasonally adjusted
Series Title: Total compensation for Private industry workers in
Ownership: Private industry workers
Component: Total compensation
Occupation: Professional and related occupations
Industry: All workers
Subcategory: All workers
Area: United States (National)
Periodicity: Index number
Years: 2005 to 2016

Year	Qtr1	Qtr2	Qtr3	Qtr4	2016 dollars
2005	98.0	98.8	99.5	100.0	0.7893
2006	101.0	101.8	103.1	103.9	0.8200
2007	104.9	105.9	106.7	107.3	0.8469
2008	108.3	109.0	109.9	110.3	0.8706
2009	111.0	111.1	111.4	111.4	0.8792
2010	112.2	112.6	113.3	113.5	0.8958
2011	114.6	115.1	115.4	115.7	0.9132
2012	116.8	117.3	117.7	118.2	0.9329
2013	118.9	119.5	120.2	120.5	0.9511
2014	121.0	121.9	122.5	122.9	0.9700
2015	123.7	124.1	124.5	124.9	0.9858
2016	125.7	126.2	126.7	126.7	1.0000

California Construction Cost Index, Department of General Services

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	2016 dollars		
2006	4620	4603	4597	4600	4599	4593	4609	4616	4619	4867	4891	4877	4,674	0.74759		
2007	4869	4868	4871	4872	4886	4842	4849	4851	4942	4943	4978	4981	4,896	0.78306		
2008	4983	4983	4999	5004	5023	5065	5135	5142	5194	5393	5375	5322	5,135	0.82126		
2009	5309	5295	5298	5296	5288	5276	5263	5265	5264	5259	5259	5262	5,278	0.84413		
2010	5260	5262	5268	5270	5378	5394	5401	5401	5381	5591	5599	5596	5,400	0.86368		
2011	5592	5624	5627	5636	5637	5643	5654	5667	5668	5675	5680	5680	5,649	0.90342		
2012	5683	5683	5738	5740	5755	5754	5750	5778	5777	5780	5779	5768	5,749	0.91944		
2013	5774	5782	5777	5786	5796	5802	5804	5801	5802	5911	5903	5901	5,820	0.93083	1.24%	
2014	5898	5896	5953	5956	5957	5961	5959	5959	5959	5969	5981	5977	5,952	0.95197	2.27%	
2015	6073	6077	6069	6062	6069	6055	6055	6055	6113	6114	6109	6108	6,080	0.97241	2.15%	
2016	6106	6132	6248	6249	6240	6238	6245	6244	6267	6343	6344	6373	6,252	1.00000	2.84%	8.49%
2017	6373	6373	6373													

The California Construction Cost index is developed based upon Building Cost Index (BCI) cost indices for San Francisco and Los Angeles produced by Engineering News Record (ENR) and reported in the second issue each month for the previous month. This table is updated at the end of each month.

The ENR BCI reports cost trends for specific construction trade labor and materials in the California marketplace.

This page last updated: 4/17/17

Available at: https://www.documents.dgs.ca.gov/resd/PMB/CCCI/Old/cccitable_2017/CCCIMasterListing_4-2017.pdf

Legend

red numbers are assumptions or data entered directly into the worksheet
blue numbers are links from other worksheets in the workbook
black numbers are calculations based on the above numbers

Cost factors are colored coded by primary source considered:

EBRPD (for HCP)
CCWD (for HCP)
Average of CCWD/EBRPD
ECCC Habitat Conservancy
J&S and EPS (for HCP)
AECOM, 2012
Updated by HEG, 2017
Updated with input from H.T. Harvey, 2017
Other estimated factors
Actual costs start-up and years 1 - 9
Estimate of EBRPD contributions to operational costs, start up and years 1-9
Summary actuals supercede model detail

Acres Acquired, Managed, and Restored within HCP/NCCP Preserves for Initial Urban Development Area
2017 Update

	Initial UDA	Source
Total acres acquired/managed	24,250	(Table 5-9: mid-point of range)
Pond acres acquired	14	(Table 5-5a)

Acres Acquired and Managed by Time Period

	Implementation Period (Years)							
	0		1-9	10-15 (6 yr period)	16-20	21-25	26-30	Total
Total reserve acres acquired per period	-		10,987	3,789	3,158	3,158	3,158	24,250
Total reserve acres managed, per period			8,083	4,042	4,042	4,042	4,042	24,250
Total reserve acres managed, cumulative	-		8,083	12,125	16,167	20,208	24,250	24,250
Pond acres acquired per period			10.86	0.9	0.7	0.7	0.7	14
Pond acres added to management per period			4.67	2.3	2.3	2.3	2.3	14
Pond acres managed cumulative, including restoration	-		4.71	13.0	20.4	27.7	35.0	35.0

Assumptions:

Actual acquisition accounted for in years 1-5 and 6-9; the net remaining requirement is allocated evenly over the remaining 21 years of the permit term.

Management and monitoring on acquired land and ponds has not kept pace with actual acquisition; land is assumed to come under management in 6 equal increments over the 30-yea

13,349.6	Total acres acquired through 2016
1,682.3	Easement acres on parcels acquired through 2016
680.0	Other acres (outside acquisition zones) not credited to reserve through 2016
10,987.2	Total acres acquired and credited toward reserve

Land Cover Type Restored/Created by Time Period

	Implementation Period (Years)							
Land Cover Type (acres except where noted)	0		1-9	10-15 (6 yr period)	16-20	21-25	26-30	Total
oak savanna	-		-	12.0	10.0	10.0	10.0	42.0
riparian woodland/scrub	-		4.04	13.1	10.9	10.9	10.9	50.0
perennial wetland (jurisdictional boundary)	-		0.16	9.2	7.6	7.6	7.6	32.2
seasonal wetland (jurisdictional boundary)	-		5.79	11.3	9.4	9.4	9.4	45.2
alkali wetland (jurisdictional boundary)	-		2.12	5.6	4.7	4.7	4.7	21.8
slough/channel	-		-	20.6	17.1	17.1	17.1	72.0
open water	-		-	-	-	-	-	-
ponds	-		0.04	6.0	5.0	5.0	5.0	21.0
streams (miles)	-		1.10	1.0	0.8	0.8	0.8	4.6
Total (acres)	-		**12.82**	**78.3**	**65.3**	**65.3**	**65.3**	**287.0**

Assumptions:

Actual restoration accounted for in years 1-9; the net remaining requirement is allocated evenly over the next 21 years of the permit term.

For total acre calculation, streams are assumed to be 5 feet wide

30% % of perennial, seasonal or alkali wetland complex acreage assumed to be jurisdictional wetland; for compensatory restoration

Defining sites:	average acres/site or linear feet/site (streams)	% requiring substantial soil disturbance
riparian/woodland scrub sites by acreage conversion:	3	20%
wetlands and pond sites by acreage conversion	2.0	80%
stream sites by linear feet conversion:	1,000	90%

Restoration sites that require significant soil disturbance by land-cover type USED IN MONITORING COST ESTIMATE

	Implementation Period (Years)							
Land Cover Type Restoration Sites	0		1-9	10-15 (6 yr period)	16-20	21-25	26-30	Total
riparian woodland/scrub	-		0.3	0.9	0.7	0.7	0.7	3.3
perennial wetland	-		0.1	3.7	3.1	3.1	3.1	12.9
seasonal wetland	-		2.3	4.5	3.8	3.8	3.8	18.1
alkali wetland	-		0.8	2.2	1.9	1.9	1.9	8.7
ponds	-		-	8.2	6.9	6.9	6.9	28.8
streams (miles/acres converted to sites)	-		5.2	4.8	4.0	4.0	4.0	21.9
Total sites for monitoring cost estimate	-		8.7	24.3	20.2	20.2	20.2	93.7

Assumptions:

Average acres/site and percent of sites requiring substantial soil disturbance calculated in table above.

Seasonal, perennial, and alkali wetland acreages in Tables 5-16 and 5-17 are for wetland complexes; for cost estimates and revenue projections the wetted acres of these complexes are assumed to be 30% of the total acres.

Summary of HCP/NCCP Personnel
2017 Update

	2012 UPDATE STAFFING								2017 UPDATE STAFFING							POST PERMIT STAFFING
	Number of FTEs								Number of FTEs							Number of FTEs
UPDATE STAFFING	0	1-5	6-10	11-15	16-20	21-25	26-30		0	1-5	6-9	10-15	16-20	21-25	26-30	
Administrative staffing									**Administrative staffing**							
Principal Planner			0.50	0.80	0.80	0.80	0.80					0.60	0.60	0.60	0.60	0.50
Senior Planner			0.30	0.50	0.50	0.50	0.50					-				
Senior GIS Planner			0.25	0.25	0.25	0.25	0.25					0.05	0.05	0.05	0.05	0.05
Associate Planner			0.80	-	-	-	-					1.85	1.85	1.85	1.85	0.50
Assistant Planner/Planning Technician			0.25	0.50	0.50	0.50	0.50					0.30	0.30	0.30	0.30	0.15
Accountant			0.25	0.25	0.25	0.25	0.25					0.40	0.40	0.40	0.40	0.20
Admin – Secretary (included in rates)			-	-	-	-	-					-	-	-	-	-
IT Support Staff (included in rates)			-	-	-	-	-					-	-	-	-	-
Total			2.35	2.30	2.30	2.30	2.30	Total				3.20	3.20	3.20	3.20	1.40
Land acquisition staffing									**Land acquisition staffing**							
Principal Planner			0.20	0.20	0.20	0.20	0.20					0.15	0.15	0.15	0.15	-
Senior GIS Planner												0.05	0.05	0.05	0.05	-
Associate Planner												0.30	0.20	0.20	0.20	-
Total			0.20	0.20	0.20	0.20	0.20	Total				0.50	0.40	0.40	0.40	-
Planning and design, restoration, and monitoring staffing									**Planning and design, restoration, and monitoring staffing**							
Principal Planner			0.10	-	-	-	-					0.05	0.05	0.05	0.05	-
Senior GIS Planner												0.05	0.05	0.05	0.05	-
Senior Planner			0.20	-	-	-	-					-	-	-	-	-
Senior Scientist			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Associate Planner			0.17	0.33	0.33	0.33	0.33					0.30	0.30	0.30	0.30	-
Technical Support			0.17	0.67	0.67	0.67	0.33					-	-	-	-	-
Total			0.80	1.33	1.33	1.33	1.00	Total				0.40	0.40	0.40	0.40	-
Habitat restoration and creation staffing									**Habitat restoration and creation staffing**							
Principal Planner			0.10	-	-	-	-					0.05	0.05	0.05	0.05	-
Associate Planner/Project Manager			0.20	-	-	-	-					0.30	0.30	0.30	0.30	-
Senior Scientist			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Project Manager			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Technical Support			0.17	0.67	0.67	0.67	0.33					-	-	-	-	-
Total			0.80	1.33	1.33	1.33	1.00	Total				0.35	0.35	0.35	0.35	-
Environmental compliance staffing									**Environmental compliance staffing**							
Principal Planner			-	-	-	-	-					0.05	0.05	0.05	-	-
Associate Planner												0.10	0.10	0.10	-	-
Total			-	-	-	-	-	Total				0.15	0.15	0.15	-	-
Preserve management and maintenance staffing									**Preserve management and maintenance staffing**							
Principal Planner			0.10	-	-	-	-					0.025	0.025	0.025	0.025	0.025
Senior Planner			0.20	-	-	-	-					-	-	-	-	-
Associate Planner/Preserve Manager			1.00	1.00	1.00	1.00	1.00					0.05	0.05	0.05	0.05	0.05
Preserve Maintenance Staff			3.00	4.00	6.00	7.00	8.00					4.00	5.00	7.00	8.00	8.00
Total			4.30	5.00	7.00	8.00	9.00	Total				4.075	5.075	7.075	8.075	8.075
Monitoring and research staffing									**Monitoring and research staffing**							
Principal Planner			-	-	-	-	-					0.025	0.025	0.025	0.025	0.025
Senior Planner			0.10	-	-	-	-					-	-	-	-	-
Senior Scientist			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Associate Planner			0.17	0.33	0.33	0.33	0.33					0.05	0.30	0.33	0.33	-
Technical Support			0.17	0.67	0.67	0.67	0.33					-	-	-	-	-
Total			0.60	1.33	1.33	1.33	1.00	Total				0.075	0.325	0.358	0.358	0.025
Overall Staffing Plan									**Overall Staffing Plan**							
Principal Planner			1.00	1.00	1.00	1.00	1.00					0.95	0.95	0.95	0.90	0.55
Senior Planner			1.00	0.50	0.50	0.50	0.50					-	-	-	-	-
Senior GIS Planner			0.25	0.25	0.25	0.25	0.25					0.15	0.15	0.15	0.15	0.05
Associate Planner/Preserve Manager			0.80	-	-	-	-					2.95	3.10	3.13	3.03	0.55
Assistant Planner/Planning Technician			0.25	0.50	0.50	0.50	0.50					0.30	0.30	0.30	0.30	0.15
Accountant			0.25	0.25	0.25	0.25	0.25					0.40	0.40	0.40	0.40	0.20
Admin – Secretary (included in rates)			-	-	-	-	-					-	-	-	-	-
IT Support Staff (included in rates)			-	-	-	-	-					-	-	-	-	-
Senior Scientist			0.50	1.00	1.00	1.00	1.00					-	-	-	-	-
Project Manager			0.50	1.00	1.00	1.00	1.00					-	-	-	-	-
Technical Support			0.50	2.00	2.00	2.00	1.00					-	-	-	-	-
Preserve Manager			1.00	1.00	1.00	1.00	1.00					-	-	-	-	-
Preserve Maintenance Staff			3.00	4.00	6.00	7.00	8.00					4.00	5.00	7.00	8.00	8.00
Total			**9.05**	**11.50**	**13.50**	**14.50**	**14.50**	Total				**8.75**	**9.90**	**11.93**	**12.78**	**9.50**

HCP/NCCP Program Administration for Initial Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Capital Costs								
Capital Subtotal	**INCLUDED IN STAFF AND OVERHEAD COSTS**							
Operational Costs								
Staff and overhead				$4,587,012	$3,822,510	$3,822,510	$3,822,510	
Other administrative costs				$36,000	$30,000	$30,000	$30,000	
Vehicle / mileage allowance				$9,000	$7,500	$7,500	$7,500	
Travel				$36,000	$30,000	$30,000	$30,000	
Insurance				$120,000	$100,000	$100,000	$100,000	
Legal assistance				$600,000	$300,000	$300,000	$300,000	
Financial analysis assistance				$65,000	$65,000	$65,000	$65,000	
Financial audit (annual)				$120,000	$100,000	$100,000	$100,000	
In-lieu funding for law enforcement and firefighting				$40,655	$45,173	$56,466	$67,759	
Public relations and outreach				$150,000	$125,000	$125,000	$125,000	
Operational Subtotal	**$159,352**	**$3,328,033**	**$3,466,978**	**$5,763,667**	**$4,625,183**	**$4,636,476**	**$4,647,769**	
Total	**$159,352**	**$3,328,033**	**$3,466,978**	**$5,763,667**	**$4,625,183**	**$4,636,476**	**$4,647,769**	**$26,627,458**

Staff and Overhead

Position	Hourly Cost per FTE with Overhead & Support	Number of FTEs						
		0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.60	0.60	0.60	0.60
Senior Planner and support	$177				-	-	-	-
Senior GIS Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				1.85	1.85	1.85	1.85
Planning Technician and support	$104				0.30	0.30	0.30	0.30
Accountant and support	$133				0.40	0.40	0.40	0.40
	Total FTEs				3.20	3.20	3.20	3.20
	Total cost per year				$764,502	$764,502	$764,502	$764,502
	Total cost per period				$4,587,012	$3,822,510	$3,822,510	$3,822,510

Notes/Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Some actual costs for program administration staff and contractors through 2016 are included in actual costs under land acquisition, planning and design, preserve management, restoration, monitoring and environmental compliance.

1,880 hours per year

East Contra Costa County HCP/NCCP Cost Tables

Other Administrative Costs	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
CHCPC membership (IEH)				$30,000	$25,000	$25,000	$25,000
Miscellaneous equipment and supplies				$6,000	$5,000	$5,000	$5,000
Cost per period				$36,000	$30,000	$30,000	$30,000

Assumption:

$5,000	annual cost for CHCPC membership, based on actual Conservancy experience through 2016 (Institute for Ecological Health)
$1,000	annual cost based on actual Conservancy experience through 2016

Vehicle / Mileage Allowance	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost per period				$9,000	$7,500	$7,500	$7,500

Assumption:

$1,500	annual cost based on actual Conservancy experience through 2016

Travel	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost per period				$36,000	$30,000	$30,000	$30,000

Assumption:

$6,000	annual cost based on actual Conservancy experience through 2016

Insurance	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost per period				$120,000	$100,000	$100,000	$100,000

Assumption:

$20,000	annual cost based on actual Conservancy experience through 2016

Legal Assistance	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$600,000	$300,000	$300,000	$300,000	$1,500,000

Assumptions:

$100,000	Annual cost for legal assistance, years 10 - 15
$60,000	Annual cost for legal assistance, after year 15

Note: The legal assistance category covers legal assistance required for program administration and (for years 6 - 10) the environmental compliance category.
Legal assistance for land acquisition included in the due diligence cost factor in the land acquisition category.
Legal assistance is also estimated for the environmental compliance category.

East Contra Costa County HCP/NCCP Cost Tables

Financial Analysis Assistance

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$65,000	$65,000	$65,000	$65,000	$260,000

Assumptions:

$65,000	Cost per period for financial analysis assistance

Financial analyst review will occur periodically over the life of the Plan (years 3, 6, 10, 15, 20 and 25).

Note: The financial analyis assistance category covers the periodic assistance of a financial analyst to review the program's cost/revenue balance, ensure that charges are adjusted in line with changing land costs and ensure compliance with State requirements on collection of fees.

Annual Financial Audit

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$120,000	$100,000	$100,000	$100,000	$420,000

Assumptions:

$20,000	Cost per year for financial audit services based on Conservancy experience through 2016

Annual financial audit of the Conservancy's financial statements by an independent auditor are required by the JPA agreement and Government Code.

In-Lieu Payments for Law Enforcement and Firefighting

	Cost by Implementation Period (Years)						
	0	1-5	6-10	10-15	16-20	21-25	26-30
Total preserve area per period	-	-	8,083	12,125	16,167	20,208	24,250
In-lieu payments for law enforcement per year			$1,783	$2,675	$3,566	$4,458	$5,349
In-lieu payments for firefighting per year			$2,734	$4,101	$5,468	$6,835	$8,202
Total cost per year			$4,517	$6,776	$9,035	$11,293	$13,552
Cost per period			$22,586	$40,655.29	$45,173	$56,466	$67,759

Assumptions:

$4.53	In-lieu law enforcement funding per preserve acre
$2.96	In-lieu firefighting funding per preserve acre

In lieu costs per preserve acres are based on CCWD's annual in-lieu payments and the assumption that CCWD manages approximately 20,000 acres of preserve.

Public Relations/Outreach

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Total cost per year				$25,000	$25,000	$25,000	$25,000	$100,000
Cost per period				$150,000	$125,000	$125,000	$125,000	$525,000

HCP/NCCP Land Acquisition for Initial Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)						
Capital Costs	0	1-9	10-15	16-20	21-25	26-30	**Total**
Acquisition	$0	$86,372,000	$34,100,657	$28,417,214	$28,417,214	$28,417,214	$205,724,299
Site improvements	$0	$0	$1,060,453	$978,317	$978,317	$978,317	$3,995,405
Capital Subtotal	**$0**	**$86,372,000**	**$35,161,110**	**$29,395,531**	**$29,395,531**	**$29,395,531**	**$209,719,704**
Operational Costs							
Program staff and overhead	na	na	$778,320	$249,570	$249,570	$249,570	$1,527,030
Due diligence	$165,742	$2,555,630	$1,023,020	$852,516	$852,516	$852,516	$6,301,940
Operational Subtotal	**$165,742**	**$2,555,630**	**$1,801,340**	**$1,102,086**	**$1,102,086**	**$1,102,086**	**$7,828,970**
Total	**$165,742**	**$88,927,630**	**$36,962,450**	**$30,497,618**	**$30,497,618**	**$30,497,618**	**$217,548,675**

Acquisition Cost over 30-year Program, Actuals year 1 - 9 + Projections Years 10 - 30 (2016 dollars)

	Cost by Implementation Period (Years)							Estimated
Acquisition Analysis Zone	0	1-9	10-15	16-20	21-25	26-30	**Total**	**Remainder 10-30**
Zone 1	$0	$8,385,000	$3,685,131	$3,070,943	$3,070,943	$3,070,943	$21,282,960	$12,897,960
Zone 2	$0	$31,138,000	$12,806,707	$10,672,256	$10,672,256	$10,672,256	$75,961,473	$44,823,473
Zone 3	$0	$2,217,000	$326,188	$271,823	$271,823	$271,823	$3,358,656	$1,141,656
Zone 4	$0	$6,417,000	$9,158,247	$7,631,872	$7,631,872	$7,631,872	$38,470,864	$32,053,864
Zone 5	$0	$26,249,000	$6,673,142	$5,560,952	$5,560,952	$5,560,952	$49,604,998	$23,355,998
Zone 6 (incl. within ULL along Marsh Creek)	$0	$6,072,000	$1,095,489	$912,907	$912,907	$912,907	$9,906,210	$3,834,210
Outside Inventory Area	$0		$352,480	$293,733	$293,733	$293,733	$1,233,680	$1,233,680
Outside Acquisition Zones	$0	$5,894,000	$3,274	$2,728	$2,728	$2,728	$5,905,457	$11,457
Total	**$0**	**$86,372,000**	**$34,100,657**	**$28,417,214**	**$28,417,214**	**$28,417,214**	**$205,724,299**	**$119,352,299**
Assumptions:		42%						58%

Actual acquisition cost through year 9, in 2016 dollars. Updated 2016 land cost factors by cost category applied to remaining acquisition targets. Total remaining cost allocated evenly over remaining 21 years of the permit term.

See Appendix G and description of separate land cost model in Chapter 9.

Program Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.15	0.15	0.15	0.15
Senior GIS Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				0.30	0.20	0.20	0.20
Total FTEs					0.50	0.40	0.40	0.40
Total cost per year					$129,720	$49,914	$49,914	$49,914
Total cost per period					$778,320	$249,570	$249,570	$249,570

Notes/Assumptions:

Actual staff costs for years 0 - 9 are included in the due diligence actuals below.

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Due Diligence

Covers costs for appraisals, preliminary title report, escrow and other closing costs, boundary surveys, legal services, environmental and Phase 1 site assessment.
Includes Conservancy staff costs on land acquisition projects.
The 2006 cost model used more detailed unit costs. The result of applying those cost factors in the 2006 model was that due diligence represented about 4% of land acquisition costs.
For the 2012 and 2016 updates the model is simplified to assume due diligence costs (not including Conservancy staff costs) at 3% of land acquisition costs, roughly consistent with the experience of the Conservancy and EBRPD through 2016, during which time about 35 percent of the reserve goals for land acquisition took place. For years 10 -30, Conservancy staff time costs are separately estimated and included in Program Staff line item above.

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Due Diligence	$165,742	$1,504,429	$1,051,201	$1,023,020	$852,516	$852,516	$852,516	$6,301,940

Assumptions:

3.0%	Due diligence costs as a percentage of land acquisition cost.

Planning Surveys (Pre-Acquisition)

Based on Conservancy and EBRPD experience to date, initial property evaluation and planning is included in staff and consultant time.
Most significant field biological work is done post acquisition and is included as a monitoring cost.

Site Improvements

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Demolition of old facilities				$60,825	$50,688	$50,688	$50,688
Repair of boundary fence				$567,640	$567,640	$567,640	$567,640
Repair and replacement of gates				$204,626	$170,521	$170,521	$170,521
Signs (boundary, landbank, etc.)				$125,049	$104,208	$104,208	$104,208
Other security (e.g., boarding up barns)				$102,313	$85,261	$85,261	$85,261
Total				$1,060,453	$978,317	$978,317	$978,317

Assumptions:

Most demolition to date is a condition of the transaction and assigned to the seller. Other site improvement costs included in EBRPD operations and maintenance costs to date.

$8,026	Demolition of old facilities per 500 acres
$5,400	Repair and replacement of gates per 100 acres
$3,300	Signs (boundary, landbank, etc.) per 100 acres
$2,700	Other security (e.g., boarding up barns) per 100 acres
240	Estimated number of parcels acquired years 10 - 30 assuming 100 acres per parcel
15,000	Average parcel boundary length in linear feet (from GIS analysis, grouping adjacent parcels with the same landowner)
$5.26	Average cost per linear foot for boundary fence repair
15%	Proportion of boundary fence that needs repair

HCP/NCCP Management and Restoration Planning and Design for Initial Urban Development Area

2017 Update

(2016 dollars)

	Cost by Implementation Period (Years)							
Capital costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Vehicle purchase (included in overhead and contractor cost)								
Capital subtotal				**$0**	**$0**	**$0**	**$0**	
Operational costs								
Program staff and overhead				$578,664	$482,220	$482,220	$482,220	
Technical staff and overhead				$0	$0	$0	$0	
Travel				$15,000	$12,500	$12,500	$12,500	
Contractors				$1,520,400	$1,140,300	$570,150	$570,150	
Operational subtotal	**$0**	**$1,262,793**	**$668,355**	**$2,114,064**	**$1,635,020**	**$1,064,870**	**$1,064,870**	
Total	**$0**	**$1,262,793**	**$668,355**	**$2,114,064**	**$1,635,020**	**$1,064,870**	**$1,064,870**	**$7,809,972**

Program Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.05	0.05	0.05	0.05
Senior GIS Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				0.30	0.30	0.30	0.30
Total FTEs					0.40	0.40	0.40	0.40
Total cost per year					$96,444	$96,444	$96,444	$96,444
Total cost per period					$578,664	$482,220	$482,220	$482,220

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies, .

Technical Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Senior scientist and support	$177				-	-	-	-
Planning Technician and support	$104				-	-	-	-
Total FTEs					-	-	-	-
Total cost per year					$0	$0	$0	$0
Total cost per period					$0	$0	$0	$0

Notes/Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Travel (shared with restoration and monitoring)

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Total cost per period				$15,000	$12,500	$12,500	$12,500

Assumption:

$6,250	annual cost based on Conservancy 2017 budget
0.40	proportion of travel costs that are used for planning (40% used for restoration and included in the restoration spreadsheet, and 20% used for monitoring and included in the monitoring spreadsheet)

Contractors

	Contract value per period						
Contractor category	0	1-5	6-9	10-15	16-20	21-25	26-30
Management planning				$760,200	$570,150	$0	$0
Restoration planning				$760,200	$570,150	$570,150	$570,150
Total per period			$0	$1,520,400	$1,140,300	$570,150	$570,150

Assumptions:

Restoration designs included in habitat restoration/creation cost as of 2017 update.

The management and restoration planning and design staff and contractors will conduct the following activities:

Management Planning

Management plans prepared for cropland/pasture preserves
Management plans prepared for natural area preserves
Grazing leases developed or renewed
Jurisdictional wetland delineation
Exotic Plant Control Program (Preserve System-wide)
Fire management/control plan (System-wide)

Restoration Planning & Design (restoration construction designs included in the habitat restoration/creation cost category)

Pond creation plan and construction designs
Wetland creation plan and construction designs
Stream restoration plan and construction designs
Oak savanna restoration plan and construction designs
Riparian woodland/scrub restoration plan and construction designs

HCP/NCCP Habitat Restoration/Creation for Initial Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
Capital Costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Creation/Restoration				$6,988,585	$5,823,821	$5,823,821	$5,823,821	
Vehicle purchase (included in overhead and contractor cost)								
Capital Subtotal				**$6,988,585**	**$5,823,821**	**$5,823,821**	**$5,823,821**	
Operational Costs								
Program staff and overhead				$478,836	$399,030	$399,030	$399,030	
Technical staff and overhead				$0	$0	$0	$0	
Travel				$15,000	$12,500	$12,500	$12,500	
Contractors				$3,808,779	$3,173,983	$3,173,983	$3,173,983	
Operational Subtotal	**$0**	**$2,439,332**	**$1,470,246**	**$4,302,615**	**$3,585,513**	**$3,585,513**	**$3,585,513**	
Total	**$0**	**$2,439,332**	**$1,470,246**	**$11,291,201**	**$9,409,334**	**$9,409,334**	**$9,409,334**	**$43,428,780**

Land Cover Type Restored/Created

	Implementation Period (Years)							
Land Cover Type (acres)	**0**		**1-9**	10-15	16-20	21-25	26-30	Total
oak savanna	-		-	12.0	10.0	10.0	10.0	42.0
riparian woodland/scrub	-		4.0	13.1	10.9	10.9	10.9	50.0
perennial wetland	-		0.2	9.2	7.6	7.6	7.6	32.2
seasonal wetland	-		5.8	11.3	9.4	9.4	9.4	45.2
alkali wetland	-		2.1	5.6	4.7	4.7	4.7	21.8
slough/channel	-		-	20.6	17.1	17.1	17.1	72.0
open water	-		-	-	-	-	-	-
ponds	-		0.0	6.0	5.0	5.0	5.0	21.0
streams (miles)	-		1.1	1.0	0.8	0.8	0.8	4.6
Total (acres)	-		12.8	78.3	65.3	65.3	65.3	287.0

Cost of Restoration/Creation Construction

			Cost by Implementation Period (Years)						
Land Cover Type	Units	Cost per unit	0		1-9	10-15	16-20	21-25	26-30
oak savanna	acres	$15,000				$216,000	$180,000	$180,000	$180,000
riparian woodland/scrub	acres	$42,199				$664,966	$554,138	$554,138	$554,138
perennial wetland	acres	$68,846				$756,282	$630,235	$630,235	$630,235
seasonal wetland	acres	$82,115				$1,109,535	$924,613	$924,613	$924,613
alkali wetland	acres	$83,094				$560,668	$467,224	$467,224	$467,224
slough/channel	acres	$62,538				$1,543,789	$1,286,491	$1,286,491	$1,286,491
open water	acres	$91,251				$0	$0	$0	$0
ponds	acres	$91,251				$655,754	$546,462	$546,462	$546,462
streams	linear feet	$234				$1,481,590	$1,234,659	$1,234,659	$1,234,659
	Total					$6,988,585	$5,823,821	$5,823,821	$5,823,821

Assumptions:

Construction costs depend mostly on the amount, depth, and linear extent of earthwork expected, and whether water control structure are required. Plant propagation, seeding, and watering also included.

For 2017 update, unit costs increased based on change in the California Construction Cost Index published by the State of California Department of General Services. Available at: https://www.documents.dgs.ca.gov/resd/PMB/CCCI/Old/cccitable_2017/CCCIMasterListing_4-2017.pdf

20%	Contingency factor for restoration projects; assumed higher than the standard contingency because of the higher degree of uncertainty in this portion of the conservation program.

East Contra Costa County HCP/NCCP Cost Tables

Program Staff and Overhead

Position	Hourly Cost per FTE with Overhead & Support	Number of FTEs 0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				0.30	0.30	0.30	0.30
Total FTEs					0.35	0.35	0.35	0.35
Total cost per year					$79,806	$79,806	$79,806	$79,806
Total cost per period					$478,836	$399,030	$399,030	$399,030
1,880	hours per year							

Technical Staff and Overhead

Position	Hourly Cost per FTE with Overhead &	Number of FTEs 0	1-5	6-9	10-15	16-20	21-25	26-30
Senior scientist and support	$177				-	-	-	-
Associate Planner and support	$112				-	-	-	-
Planning Technician and support	$104				-	-	-	-
Total FTEs					-	-	-	-
Total cost per year					$0	$0	$0	$0
Cost per period					$0	$0	$0	$0

Assumptions:

Habitat Conservancy staff select sites, hire and oversee consultants for plans, specifcations, and implementation. Staff shared with other implementation tasks; the amount listed is the estimated portion to support wetland mitigation creation/restoration.

Cost includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Travel (shared with planning and monitoring)

	Cost by Implementation Period (Years) 0	1-5	6-9	10-15	16-20	21-25	26-30
Total cost per period				$15,000	$12,500	$12,500	$12,500

Assumption:

$6,250	annual cost based on Conservancy 2017 budget
0.40	proportion of travel costs that are used for restoration (40% used for planning and included in the planning spreadsheet, and 20% used for monitoring and included in the monitoring spreadsheet)

Contractors

Contractor category	Cost by Implementation Period (Years) 0	1-5	6-9	10-15	16-20	21-25	26-30
Design, plans, specifications, and engineering				$2,306,233	$1,921,861	$1,921,861	$1,921,861
Bid assistance				$104,829	$87,357	$87,357	$87,357
Construction oversight				$698,859	$582,382	$582,382	$582,382
Post-construction maintenance				$698,859	$582,382	$582,382	$582,382
Cost per period				$3,808,779	$3,173,983	$3,173,983	$3,173,983

Assumptions:

33%	percent of total construction cost required to complete restoration design and plans, specifications, engineering and provide allowance for remedial measures
1.50%	percent of total construction cost required for bid assistance
10%	percent of total construction cost required for construction oversight
10%	percent of total construction cost required for post construction maintenance

The total area of restoration that occurs in each period will be designed as three different projects (approximately 14 acres each).

Design, plan, specification, and engineering work, bid assistance, and construction oversight will be conducted in the period in which construction takes place.

Two years of post-construction maintenance will be conducted in the period after construction takes place to maintain irrigation systems, conducting weeding, etc. Management costs after success criteria are met is included in development fee paid for same site (wetland mitigation fee is in addition).

HCP/NCCP Environmental Compliance for Initial Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
Operational Costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Program staff and overhead				$226,164	$188,470	$188,470	$0	
Legal assistance				$210,000	$175,000	$0	$0	
NEPA/CEQA				$493,300	$493,300	$493,300	$0	
CWA 404				$0	$0	$0	$0	
CWA 401				$24,700	$24,700	$24,700	$0	
CDFG 1602				$20,500	$20,500	$20,500	$0	
NHPA				$53,200	$53,200	$53,200	$0	
Other	**$0**	**$632,307**	**$138,246**	$36,900	$36,900	$36,900	$0	
Total	**$0**	**$632,307**	**$138,246**	**$1,064,764**	**$992,070**	**$817,070**	**$0**	**$3,644,457**

Program Staff and Overhead

	Hourly Cost per FTE with	Number of FTEs						
Position	Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.05	0.05	0.05	-
Associate Planner and support	$112				0.10	0.10	0.10	-
	Total FTEs				0.15	0.15	0.15	-
	Total cost per year				$37,694	$37,694	$37,694	$0
	Total cost per period				$226,164	$188,470	$188,470	$0

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Legal Assistance	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$210,000	$175,000	$0	$0	$385,000

Assumptions:

$35,000 Annual cost for legal assistance with wetland permitting, years 10 - 20

Number of Projects Requiring Environmental Compliance

		Number							
Project size	Size Range	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Small/simple	up to 10 acres or up to 0.1 stream miles				4	4	4	-	20
Medium/more complex	10.1-50 acres or 0.1-0.5 stream miles				4	4	4	-	20
Large/most complex	over 50 acres or 0.5 stream miles				2	2	2	-	10
	Total projects				10	10	10	-	30

Assumptions:

Of the total of approximately 50 projects that would require environmental compliance, 1/5 would require compliance in each 5-year period between years 1 and 25.

East Contra Costa County HCP/NCCP Cost Tables

Environmental Compliance Cost per Project Size and Compliance Category (2016 dollars)

Project size	Size Range	Estimate Project Cost within DFG jurisdiction		Project Impacts to Wetlands for CWA 401		Compliance Category					
				Minimum	Maximum	CEQA	CWA 404	CWA 401	CDFG 1602	NHPA	Other
Small/simple	up to 10 acres or up to 0.1 stream miles	$ 2,000	$ 25,000	0.001	0.01	$6,490	$0	$1,800	$983	$3,245	$3,077
Medium/more complex	10.1-50 acres or 0.1-0.5 stream miles	$ 25,001	$ 100,000	0.0121	0.07	$51,923	$0	$2,340	$2,109	$4,543	$3,692
Large/most complex	over 50 acres or 0.5 stream miles	$ 100,001	$500,000 or more	0.073	0.30	$129,809	$0	$4,063	$4,048	$11,034	$4,923

Assumptions:

Assumed wetland impact determined by AECOM based experience with typical projects that would be expected to be implemented by the Conservancy. For example wetland restoration/creation projects, stream restoration projects, adaptive management measures for existing wetland features and facilities improvements. In general, it is expected that impacts to wetlands and streams would be avoided if at all possible. Of the stream length indicated, assumed only 10% of that length would be impacted and an average stream width of 10 feet.

For NEPA/CEQA, 401/404 and 1602 compliance, varying costs have more to do with project complexity than with project size.
Clean Water Act 401 and 1602 permits will be done on a per-project basis
Cultural compliance permits will be done on a per-project basis.

Contra Costa Conservancy staff will prepare permit applications and notification for the 401, 404 and 1600 applications, thereby resulting in no consultant cost for permit preparation. This table also assumes that the permits for Water Quality Certification (CWA 401) and Streambed Alteration Agreement (DFG 1602) will not be secured under programmatic or Master permit processes.

Permitted projects would be completed within the time limit allotted for the permits; no extensions or re-application would be required.
The "other" compliance category could include county grading permits, road encroachment permits, or other local approvals.

NEPA/CEQA
Depending on the level of detail that is provided for specific projects, they may or may not be able to be covered under the HCP EIR/EIS.
For those without sufficient detail, additional environmental documentation may need to be prepared.
It is likely that the majority of those would be in the form of mitigated negative declarations.
Because it is difficult to provide a cost estimate for a project without knowing details such as location, size, etc., the following are some rough numbers based on level of controversy:
Small scale non-controversial projects = Cat Excl/Cat Exemp
Medium scale more controversial projects = IS MND/EA FONSI
Larger scale more controversial projects = EIR/EIS
All land acquisitions would be a categorical exemption under CEQA as well as under NEPA, when NEPA applies.

401/404
The cost of conducting wetland delineations is not included under CWA 404/401 compliance; it is expected that delineation would be covered under land acquisition costs.
Each project implemented under the HCP will qualify for compliance under the USACE 404 regional permit program for the inventory area; there is no fee for 404 permit applications
Tasks associated with Section 402 compliance are not included in this cost estimate.
CWA 401 fee cost estimate is based on impacts to jurisdictional waters of the state rather than project size. Fee is an average based on the minimum and maximum expected impacts. State Water Resources Control Board Fiscal Year 2016-2017 Water Quality Certification Dredge and Fill Application Fee Calculator (Effective Date 11/16/2016) Available:
http://www.waterboards.ca.gov/water_issues/programs/cwa401/

NHPA
Archaeological surveys can be conducted at an intensive level at a rate of 40 acres per person per day.
No more than one cultural resource will be identified per 40 acres or part thereof.
This scope of work and cost estimate does not include tasks necessary for significance evaluations and resolution of adverse effects.

CDFG 1602
DFG 1602 costs are estimated based on the assumed cost of project activities within DFW jurisdiction per Fish and Game Code Sections 1600-1616, and the fee schedule corresponding to the project costs. Average cost based on mean of minimum and maximum fee amounts for standard agreements.
California Department of Fish and Wildlife Lake and Streambed Alteration Agreements and Fees, Effective October 1, 2016. Available:
https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=130459&inline

HCP/NCCP Preserve Management and Maintenance for Initial Urban Development Area
2017 Update
(2016 dollars)

	Implementation Period (Years)							
Capital Costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Vehicle purchase								
Equipment - capital								
Field facilities				Covered in facilities maintenance line item below.				
Contractors - capital								
Recreation facilities								
Capital Subtotal				**$0**	**$0**	**$0**	**$0**	
Operational Costs								
Program staff and overhead				$49,914	$41,595	$41,595	$41,595	
Preserve staff and overhead				$3,447,168	$3,577,640	$4,987,640	$5,692,640	
Facilities Maintenance/Vehicles and equipment				$1,776,000	$1,850,000	$2,590,000	$2,960,000	
Equipment - operational				$0	$0	$0	$0	
Facilities maintenance and utilities								
Water pumping				Covered in facilities maintenance line item above.				
Contractors - operational								
Recreation - operational				$0	$0	$0	$0	
Operational Subtotal	**$0**	**$386,065**	**$1,543,536**	**$5,273,082**	**$5,469,235**	**$7,619,235**	**$8,694,235**	
Total	**$0**	**$386,065**	**$1,543,536**	**$5,273,082**	**$5,469,235**	**$7,619,235**	**$8,694,235**	**$28,985,388**

NOTE: Costs for years 1 - 9 include expenditures by the East Bay Regional Park District on land maintenance activities on Conservancy properties (staff costs, maintenance supplies, maintenance services from inception throught 2016. Details provided by the East Contra Costa County Habitat Conservancy.

Program Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and Support	$177				0.025	0.025	0.025	0.025
Senior Planner and Support	$177				-	-	-	-
Total FTEs					0.025	0.025	0.025	0.025
Total cost per year					$8,319	$8,319	$8,319	$8,319
Total cost per period					$49,914	$41,595	$41,595	$41,595

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Preserve Staff and Overhead

			Number of FTEs						
Position	Preserve area per position (acres)	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Preserve Manager and support		$112				0.05	0.05	0.05	0.05
Preserve maintenance staff	3,000	$75				4.0	5.0	7.0	8.0
Total FTEs						4.05	5.05	7.05	8.05
Total cost per year						$574,528	$715,528	$997,528	$1,138,528
Total cost per period						$3,447,168	$3,577,640	$4,987,640	$5,692,640

Notes/Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year, excluding vacation

Preserve maintenance including capital and operational costs for all maintenance activities (new cost approach for 2017 update)

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
				4.0	5.0	7.0	8.0
Total cost per year				$296,000	$370,000	$518,000	$592,000
Total cost per period				$1,776,000	$1,850,000	$2,590,000	$2,960,000

Notes/Assumptions:

Annual cost per FTE	$74,000

For 2017 update, revised the approach to this component of the cost estimate. Replaced detailed estimates of schedules for vehicle and equipment purchases, field facilities construction, and various maintenance activities with a per-FTE factor derived from analysis of the EBRPD budget for the Maintenance and Skilled Trades Department within the Parks Operations Division. This department acquires, manages, and services the vehicles, trailers, landscaping equipment, heavy equipment, police vehicles, boats and fire apparatus needed to manage and maintain EBRPD properties. The department also repairs and maintains buildings and utilities infrastructure, including water utilities, roads and trails, and sanitation systems.

Vehicles, Maintenance, and Fuel - Captured in annual cost per FTE above (May 2017)

	Purchase price per vehicle	Fuel cost per vehicle per year	Maintenance cost per vehicle per year	Number of vehicles, per period						
				0	1-5	6-9	10-15	16-20	21-25	26-30
Total number of FTEs							4.05	5.05	7.05	8.05
New trucks purchased	$27,600	$1,200	$1,300				0	0	0	0
Old trucks retired							0	0	0	0
Total trucks							0	0	0	0
New 4WDs purchased	$46,000	$2,400	$2,000				0	0	0	0
Old 4WDs retired							0	0	0	0
Total 4WDs							0	0	0	0
New ATVs purchased	$7,900	$330	$390				0	0	0	0
Old ATVs retired							0	0	0	0
Total ATVs							0	0	0	0
New dump trucks purchased	$39,400	$530	$530				0	0	0	0
Old dump trucks retired							0	0	0	0
Total dump trucks							0	0	0	0
New tractors purchased	$52,600	$660	$1,310				0	0	0	0
Old tractors retired							0	0	0	0
Total tractors							0	0	0	0
New auger, mower, scraper for tractor	$52,600	$0	$130				0	0	0	0
Old auger, mower, scraper retired							0	0	0	0
Total auger, mower, scraper							0	0	0	0
New small tractors	$18,400	$390	$390				0	0	0	0
Old small tractors retired							0	0	0	0
Total small tractors							0	0	0	0
New light 4WD vehicles	$13,100	$330	$330				0	0	0	0
Old light 4WD vehicles retired							0	0	0	0
Total light 4WD vehicles							0	0	0	0
Total vehicle purchase cost per period							$0	$0	$0	$0
Total vehicle fuel and maintenance per year							$0	$0	$0	$0
Total vehicle fuel and maintenance per period							$0	$0	$0	$0

Assumptions:

Cost of 4WD truck includes cost of fire pumper, chain saw, sprayer, and small tool set for vehicle.

Equipment and Materials - Captured in annual cost per FTE above (May 2017)

	Number of new units bought per period						
	0		1-9	10-15	16-20	21-25	26-30
New preserve area managed per period			8,083	4,042	4,042	4,042	4,042
Total preserve area managed per period			8,083	12,125	16,167	20,208	24,250
Capital cost of equipment and materials per year				$0	$0	$0	$0
Operational cost of equipment and materials per year				$0	$0	$0	$0
Total capital cost per period				$0	$0	$0	$0
Total operational cost per period				$0	$0	$0	$0

Assumptions:

$0	Capital cost of equipment and materials per 1,000 preserve acres per year.
$0	Operational cost of equipment and materials per 1,000 preserve acres per year.

Capital costs include the capital component of fire fighting equipment/gear, small tools (pliers, wrenches, screwdrivers, etc.), glasses, gloves, hard hats, rain gear, irrigation supplies, cargo container, landscape plants and grass, oak trees, lumber, and truck hauling services.
Operational costs include the operational component of fire fighting equipment/gear, small tools (pliers, wrenches, screwdrivers, etc.), glasses, gloves, hard hats, rain gear, irrigation supplies, cargo container, landscape plants and grass, oak trees, lumber, and truck hauling services.
Operational costs also include portable radios, small pumps, piping, generator, saw, and demolition hammers.

Field Facilities - Captured in annual cost per FTE above (May 2017)

	0		1-9	10-15	16-20	21-25	26-30
Total preserve area managed per period			8,083	12,125	16,167	20,208	24,250
Total field offices/parking areas				-	-	-	-
New field offices/parking areas				-	-	-	-
Cost per period for offices/workshops				$0	$0	$0	$0

Assumptions:

10,000	Number of acres per workshop/parking area
$556,000	Cost to build a workshop/parking area

Note: Field facilities contain an area for equipment storage, a manager's office, a shared office, a locker room, and restrooms.
Based on experience to date, cost assumes donated portable building, with costs representing transportation, installation, utilities, etc.

Facilities Maintenance and Utilities - Captured in annual cost per FTE above (May 2017)

	Cost per facility per year	0	1-5	6-9	10-15	16-20	21-25	26-30
Total facilities per period		-		-	-	-	-	-
Maintenance cost per year	$9,900				$0	$0	$0	$0
Utilities cost per year	$5,300				$0	$0	$0	$0
Total cost per year					$0	$0	$0	$0
Total cost per period					$0	$0	$0	$0

Water Pumping - Captured in annual cost per FTE above (May 2017)

	0	1-5	6-9	10-15	16-20	21-25	26-30
Total preserve area managed				12,125	16,167	20,208	24,250
Total cost per year				$0	$0	$0	$0
Total cost per period				$0	$0	$0	$0

$0	Annual cost for pump and well drilling per 1,000 acres

Contractors - operational: for 2017 update assume included in preserve management staffing cost

	Contract value per 5-year period						
Contractor category	0	1-5	6-9	10-15	16-20	21-25	26-30
Total pond area managed				13	20	28	35
Total preserve area managed				12,125	16,167	20,208	24,250
Routine dirt road maintenance				$0	$0	$0	$0
Feral pig management				$0	$0	$0	$0
Pond maintenance				$0	$0	$0	$0
Weed management				$0	$0	$0	$0
Other maintenance services				$0	$0	$0	$0
Total per period				$0	$0	$0	$0

Assumptions:

$0	Cost for pond maintenance (dredging) per acre of pond every 5 years.
$0	Cost of dirt road maintenance per 100 miles of road per year.
100	miles of dirt roads on preserves
4	miles of dirt roads per 1,000 acres of preserve
$0	Cost of feral pig management per year per 1,000 acres managed
$0	Cost of weed management per 1,000 acres of preserve per year.
$0	Cost for other maintenance services per 1,000 acres of preserve per year.

Other maintenance services include mowing, grading, pest control, disking for fire breaks, fencing, alarms, janitorial services
(pond maintenance subtracted based on the yearly pond maintenance costs above)

Contractors - capital - Captured in annual cost per FTE above (May 2017)

	Contract value per period						
Contractor category	0	1-5	6-9	10-15	16-20	21-25	26-30
Total preserve area managed				12,125	16,167	20,208	24,250
Construction services				$0	$0	$0	$0

Assumptions:

$0	Cost for construction services per 1,000 preserve acres per year

Construction services includes roadway design, paving, fencing, grading, weather station, and boundary surveying services

Recreation Facilities and Maintenance

	0	1-5	6-9	10-15	16-20	21-25	26-30
Total facilities per period				-	-	-	-
Facilities cost - capital, per period				$0	$0	$0	$0
Facilities cost - maintenance and operations				$0	$0	$0	$0
Total facilities capital cost				$0	$0	$0	$0
Total cost per year				$0	$0	$0	$0
Total cost per period				$0	$0	$0	$0

Assumptions:
For this estimate, assumed costs covered by the East Bay Regional Park District.

$0	Cost per unit for recreation facilities.
$0	Annual maintenance and operations cost for recreation facilities

HCP/NCCP Monitoring, Research, and Adaptive Management for Initial Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
Capital costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Vehicle purchase (included in overhead and contractor cost)								
Capital Subtotal				**$0**	**$0**	**$0**	**$0**	
Operational Costs								
Program staff and overhead				$113,082	$357,435	$392,528	$392,528	
Technical staff and overhead				$0	$0	$0	$0	
Travel				$7,500	$6,250	$6,250	$6,250	
Field data collection (contractors)				$1,530,879	$1,741,261	$2,162,226	$2,518,534	
Directed research				$570,000	$475,000	$475,000	$475,000	
Adaptive management				$189,500	$189,500	$189,500	$189,500	
Operational Subtotal	**$0**	**$466,449**	**$430,860**	**$2,410,961**	**$2,769,446**	**$3,225,504**	**$3,581,812**	
Total	**$0**	**$466,449**	**$430,860**	**$2,410,961**	**$2,769,446**	**$3,225,504**	**$3,581,812**	**$12,885,034**

Program Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.025	0.025	0.025	0.025
Associate Planner and support	$112				0.05	0.30	0.33	0.33
Total FTEs					0.075	0.325	0.358	0.358
Total cost per year					$18,847	$71,487	$78,506	$78,506
Total cost per period					$113,082	$357,435	$392,528	$392,528

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Technical Staff and Overhead (shared with planning and restoration/creation)

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead &	0	1-5	6-9	10-15	16-20	21-25	26-30
Senior scientist and support	$177				-	-	-	-
Technical support	$104				-	-	-	-
Total FTEs					-	-	-	-
Total cost per year					$0	$0	$0	$0
Cost per period					$0	$0	$0	$0

Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Travel (shared with planning and restoration/creation)

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Total cost per period				$7,500	$6,250	$6,250	$6,250

Assumption:

$6,250	annual cost based on Conservancy 2017 budget
0.20	Proportion of travel costs that are used for monitoring (40% used for planning and included in the planning spreadsheet, and 40% used for restoration and included in the restoration spreadsheet).

Field Data Collection (Contractors)

On-going and Construction Monitoring

	0		1-9	10-15	16-20	21-25	26-30
Total acres of land added to reserve for management and monitoring each period			8,083	4,042	4,042	4,042	4,042
New acres created/restored per period			13	78	65	65	65
Number of restoration sites per period			9	24	20	20	20
Number of preserve covered activities requiring pre-construction surveys and construction monitoring per period (sites)			2	6	5	5	5

				Average area requiring monitoring per year (acres or sites) and average annual cost per period						
Monitoring type	Cost per unit	Unit		0	1-5	6-9	10-15	16-20	21-25	26-30
pre-construction surveys	$2,694	1	site				5	5	5	5
subtotal							$13,470	$13,470	$13,470	$13,470
construction monitoring	$5,957	1	site				1	1	1	1
subtotal							$5,957	$5,957	$5,957	$5,957
post-acquisition biological inventories	$18	1	acre				674	808	808	808
subtotal							$12,236	$14,683	$14,683	$14,683
monitoring: restoration, creation and enhancement sites	$10,776	10	acres				3	19	29	27
subtotal							$3,233	$20,474	$31,250	$29,095
status and trends monitoring: key covered species and ecosystems	$18	1	acre				12,125	16,167	20,208	24,250
subtotal							$220,251	$293,668	$367,084	$440,501
Total cost per year							$255,147	$348,252	$432,445	$503,707
Total cost per period							$1,530,879	$1,741,261	$2,162,226	$2,518,534

Assumptions:

Implementing entity monitoring staff will plan, coordinate, and report on the monitoring categories described below.

Contractors will conduct the field monitoring and data analysis.

Implementation monitoring will be conducted by the GIS/Database technician in conjunction with the other monitoring staff. The cost for the GIS/database technician's time will be covered by the program administration cost category. The cost for the monitoring staffs' time is assumed to be included in the other monitoring categories.

Preconstruction surveys are assumed to occur prior to construction of covered activites on the Preserve System. Preconstruction surveys are for the following species only: Townsend's big-eared bat, San Joaquin kit fox, golden eagle, burrowing owl, Swainson's hawk, and covered shrimp species. Surveys are assumed to require **one visit by two associate biologists** at **$160/hour** each. They are assumed to occur in the same 5-year period in which construction occurs. Assumes negative findings.

Construction monitoring is assumed to occur periodically during construction of covered activities and conservation measures. An average of **seven visits by one staff biologist** at **$100/hour** is assumed.

10%	% of times construction surveys are anticipated to be required for covered activities within the preserve system (it is anticipated that Implementing Entity will whenever possible avoid habitat and breeding season of covered species).
0.25	Ratio of area of other covered activities in preserves to area created/restored.

Planning, preconstruction surveys and construction monitoring for covered activities outside of preserves will be paid for by developers.

Post-acquisition inventories will build on planning surveys. Inventory will include mapping of noxious weeds.

Monitoring of restoration, creation, and enhancement sites is assumed to occur **4 times per year** for the 5-year period following the restoration activity and will require **two associate biologists at $160/hr for one 8-hour day each visit**. It will include species-response monitoring. It is assumed to begin in the 5-year period after the creation/restoration/enhancement takes place.

Status and trends monitoring is assumed to occur after preserve land is purchased through year 30. Status and trend monitoring will build on planning surveys and post-acquisition inventories, when appropriate.

Directed Research

	0	1-5	6-9	10-15	16-20	21-25	26-30
Average cost per year to fund directed research				$95,000	$95,000	$95,000	$95,000
Total cost per period				$570,000	$475,000	$475,000	$475,000

Adaptive Management

	0	1-5	6-9	10-15	16-20	21-25	26-30
Average Independent Conservation Assessment Team cost per period				$31,500	$31,500	$31,500	$31,500
Average Science Advisors cost per period				$158,000	$158,000	$158,000	$158,000
Total cost per period				$189,500	$189,500	$189,500	$189,500

Assumptions:

Adaptive management experiments are covered under the monitoring staff and directed research categories.

It is assumed that the Independent Conservation Assessment Team will meet once every 4 years and have:

5	members
$6,300	stipend per member per 5-year period

It is assumed that the Science Advisors will contain:

10	members
$15,800	stipend per member per 5-year period

Field monitoring and analysis contractors

	Associate Biologist	Staff Biologist		
Base cost per hour	$160	$100	$ per hour	
Direct Expenses	$5	$3	3%	of labor cost
Travel	$27	$27	$ per day	
assuming	50	50	miles	
and	$0.54	$0.54	$ per mile	
Hours per day	8	8	hours per day	
Total cost per hour including expenses and amortized per diem and travel	$168.38	$106.38	$ per hour	

Assumptions:

Bay Area billing rate, assuming all work will be conducted from a local office (no per diem needed).

Remedial Measures for Initial Urban Development Area

2017 Update

(2016 dollars)

	Implementation Period (Years)							
Capital costs	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Remedial measures	$0	$0	$0	$329,018	$200,632	$755,469	$1,799,321	$3,084,440
Total	**$0**	**$0**	**$0**	**$329,018**	**$200,632**	**$755,469**	**$1,799,321**	**$3,084,440**

Note: Actual costs are included in habitat restoration/creation cost category

Remedial Measures

	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost of created/restored habitat per period		$2,439,332	$1,470,246	$6,988,585	$5,823,821	$5,823,821	$5,823,821
Cost for remedial measures for created/restored habitat per period				$243,933	$147,025	$698,859	$1,747,146
Area of new preserve not including created/restored habitat per period	-	7,682	3,292	3,711	3,093	3,093	3,093
Cost for remedial measures for preserves per period				$55,084	$23,608	$26,610	$22,175
Cost for other remedial measures per period				$30,000	$30,000	$30,000	$30,000
Total cost per period				$329,018	$200,632	$755,469	$1,799,321

Assumptions:

2%	Percent of annual preserve management and maintenance cost assumed to be needed for preserve remedial actions.
10%	Percent of created/restored habitat for which remedial measures will be required.
$359	Cost per acre for preserve management and maintenance in years 26-30.
70%	Percent of land acquisition in years 1 - 9 occurring in years 1 - 5

Remedial actions are assumed to occur in the second 5-year period after habitat is created/restored or preserve land is purchased, with the exception of remedial actions for habitat created/restored in years 21-30. The cost for these remedial actions is included in years 26-30 so that it can be included in this cost estimate.

The remedial cost for preserve lands is assumed to be a percentage of the cost per acre for preserve management and maintenance in years 26-30, and is assumed to be needed once, in the second 5-year period after the preserve land is purchased.

The cost for other remedial measures includes the costs for restoration or maintenance of preserve areas because of other changed circumstances, such as wildfire.

Contingency for Initial Urban Development Area
2017 Update
(2016 dollars)

	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Total cost of program excluding land acquisition and habitat restoration capital costs	$0	$0	$0	$21,258,171	$19,277,099	$21,704,136	$23,373,520	$85,612,926
Contingency fund	**$0**	**$0**	**$0**	**$1,062,909**	**$963,855**	**$1,085,207**	**$1,168,676**	**$4,280,646**

Assumptions:

5.0% Percent of total program funding needed for contingency

Post-Permit Costs for Initial Urban Development Area

2017 Update

(2016 dollars)

Post-Permit Costs

Cost Category	Annual Costs	Assumptions
Total Cost		
Program Administration	$424,686	
Land Acquisition	$0	
Planning and Design	$0	
Habitat Restoration/Creation	$0	
Environmental Compliance	$0	
Preserve Management and Maintenance	$1,738,847	
Monitoring, Research, and Adaptive Management	$358,181	
Remedial Measures	$0	
Contingency	$0	
Total	**$2,521,714**	

Capital Costs	Annual Costs	Assumptions
Program Administration	$0	Included in staff and overhead costs
Land Acquisition: acquisition and site improvements	$0	Acquisition complete during permit term
Planning and Design	$0	Planning and design work complete during permit term
Habitat Restoration/Creation	$0	Restoration/creation projects constructed during permit term
Preserve Management and Maintenance	$0	Captured in annual operating costs
Monitoring, Research, and Adaptive Management	$0	Captured in annual operating costs
Remedial Measures	$0	Not required, post permit
Total	**$0**	

Operational Costs	Annual Costs	Assumptions
Program Administration	$424,686	Reduced staffing and no legal and finanical contractor costs.
Land Acquisition: due diligence, transaction costs	$0	Acquisition complete during permit term
Planning and Design	$0	Planning and design work complete during permit term
Habitat Restoration/Creation	$0	Restoration/creation projects constructed during permit term
Environmental Compliance	$0	Not required, post permit
Preserve Management and Maintenance	$1,738,847	Assume 100 percent of annual average costs in years 26 - 30
Monitoring, Research, and Adaptive Management	$358,181	Assume 50 percent of annual average costs in years 26 - 30
Contingency	$0	Not required, post permit
Total	**$2,521,714**	

Total preserve acres	**24,250**
Annual average cost per acre managed	**$104**
Percent of average annual cost years 26 - 30	**21%**

APPENDIX D: MAXIMUM UDA COST MODEL UPDATE

The following tables provide comprehensive documentation for the cost model update based on estimated impacts for the maximum urban development area.

East Contra Costa County HCP/NCCP
2017 Update
Implementation Cost Data and Assumptions with Maximum Urban Development Area

Summary of East Contra Costa HCP Implementation Costs for Maximum Urban Development Area
2017 Update
(2016 dollars rounded to the nearest $10,000)

Total Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total (2016)**
Program Administration	$160,000	$6,800,000	$5,770,000	$4,640,000	$4,650,000	$4,660,000	$26,680,000
Land Acquisition	$170,000	$88,930,000	$51,540,000	$42,670,000	$42,670,000	$42,670,000	$268,650,000
Planning and Design	$0	$1,930,000	$2,110,000	$1,640,000	$1,060,000	$1,060,000	$7,810,000
Habitat Restoration/Creation	$0	$3,910,000	$13,670,000	$11,390,000	$11,390,000	$11,390,000	$51,750,000
Environmental Compliance	$0	$770,000	$1,060,000	$990,000	$820,000	$0	$3,640,000
Preserve Management and Maintenance	$0	$1,930,000	$6,560,000	$7,620,000	$8,690,000	$10,840,000	$35,650,000
Monitoring, Research, and Adaptive Management	$0	$900,000	$2,770,000	$3,200,000	$3,790,000	$4,220,000	$14,880,000
Remedial Measures	$0	$0	$330,000	$200,000	$920,000	$2,190,000	$3,650,000
Contingency	$0	$0	$1,190,000	$1,130,000	$1,210,000	$1,360,000	$4,890,000
Total	**$330,000**	**$105,170,000**	**$85,000,000**	**$73,480,000**	**$75,200,000**	**$78,390,000**	**$417,600,000**

Capital Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total (2016)**
Program Administration	INCLUDED IN STAFF AND OVERHEAD COSTS						
Land Acquisition: acquisition and site improvements	$0	$86,370,000	$49,330,000	$41,220,000	$41,220,000	$41,220,000	$259,370,000
Planning and Design	$0	$0	$0	$0	$0	$0	$0
Habitat Restoration/Creation	$0	$0	$8,530,000	$7,110,000	$7,110,000	$7,110,000	$29,850,000
Preserve Management and Maintenance	$0	$0	$0	$0	$0	$0	$0
Monitoring, Research, and Adaptive Management	$0	$0	$0	$0	$0	$0	$0
Remedial Measures	$0	$0	$330,000	$200,000	$920,000	$2,190,000	$3,650,000
Total	**$0**	**$86,370,000**	**$58,190,000**	**$48,530,000**	**$49,250,000**	**$50,520,000**	**$292,870,000**

Operational Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total (2016)**
Program Administration	$160,000	$6,800,000	$5,770,000	$4,640,000	$4,650,000	$4,660,000	$26,680,000
Land Acquisition: transactional costs	$170,000	$2,560,000	$2,220,000	$1,450,000	$1,450,000	$1,450,000	$9,280,000
Planning and Design	$0	$1,930,000	$2,110,000	$1,640,000	$1,060,000	$1,060,000	$7,810,000
Habitat Restoration/Creation	$0	$3,910,000	$5,140,000	$4,280,000	$4,280,000	$4,280,000	$21,900,000
Environmental Compliance	$0	$770,000	$1,060,000	$990,000	$820,000	$0	$3,640,000
Preserve Management and Maintenance	$0	$1,930,000	$6,560,000	$7,620,000	$8,690,000	$10,840,000	$35,650,000
Monitoring, Research, and Adaptive Management	$0	$900,000	$2,770,000	$3,200,000	$3,790,000	$4,220,000	$14,880,000
Contingency	$0	$0	$1,190,000	$1,130,000	$1,210,000	$1,360,000	$4,890,000
Total	**$330,000**	**$18,800,000**	**$26,820,000**	**$24,950,000**	**$25,950,000**	**$27,870,000**	**$124,730,000**

Summary of East Contra Costa HCP Implementation Costs for Maximum Urban Development Area
2017 Update
(2016 dollars not rounded)

Total Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total**
Program Administration	$159,352	$6,795,011	$5,773,643	$4,636,266	$4,650,330	$4,664,394	$26,678,996
Land Acquisition	$165,742	$88,927,630	$51,541,900	$42,670,811	$42,670,811	$42,670,811	$268,647,705
Planning and Design	$0	$1,931,148	$2,114,064	$1,635,020	$1,064,870	$1,064,870	$7,809,972
Habitat Restoration/Creation	$0	$3,909,578	$13,668,995	$11,390,829	$11,390,829	$11,390,829	$51,751,061
Environmental Compliance	$0	$770,553	$1,064,764	$992,070	$817,070	$0	$3,644,457
Preserve Management and Maintenance	$0	$1,929,601	$6,563,082	$7,619,235	$8,694,235	$10,844,235	$35,650,388
Monitoring, Research, and Adaptive Management	$0	$897,309	$2,769,384	$3,204,307	$3,788,148	$4,223,749	$14,882,897
Remedial Measures	$0	$0	$329,103	$200,669	$921,333	$2,194,046	$3,645,151
Contingency	$0	$0	$1,187,771	$1,128,603	$1,211,024	$1,363,789	$4,891,187
Total	**$325,094**	**$105,160,830**	**$85,012,706**	**$73,477,810**	**$75,208,651**	**$78,416,724**	**$417,601,814**

Capital Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total**
Program Administration	INCLUDED IN STAFF AND OVERHEAD COSTS						
Land Acquisition: acquisition and site improvements	$0	$86,372,000	$49,326,489	$41,223,665	$41,223,665	$41,223,665	$259,369,485
Planning and Design	$0	$0	$0	$0	$0	$0	$0
Habitat Restoration/Creation	$0	$0	$8,527,611	$7,106,343	$7,106,343	$7,106,343	$29,846,639
Preserve Management and Maintenance	$0	$0	$0	$0	$0	$0	$0
Monitoring, Research, and Adaptive Management	$0	$0	$0	$0	$0	$0	$0
Remedial Measures	$0	$0	$329,103	$200,669	$921,333	$2,194,046	$3,645,151
Total	**$0**	**$86,372,000**	**$58,183,203**	**$48,530,677**	**$49,251,341**	**$50,524,054**	**$292,861,275**

Operational Costs

	Implementation Period (Years)						
Cost Category	0	1-9	10-15	16-20	21-25	26-30	**Total**
Program Administration	$159,352	$6,795,011	$5,773,643	$4,636,266	$4,650,330	$4,664,394	$26,678,996
Land Acquisition: due diligence, transaction costs	$165,742	$2,555,630	$2,215,411	$1,447,146	$1,447,146	$1,447,146	$9,278,220
Planning and Design	$0	$1,931,148	$2,114,064	$1,635,020	$1,064,870	$1,064,870	$7,809,972
Habitat Restoration/Creation	$0	$3,909,578	$5,141,384	$4,284,487	$4,284,487	$4,284,487	$21,904,422
Environmental Compliance	$0	$770,553	$1,064,764	$992,070	$817,070	$0	$3,644,457
Preserve Management and Maintenance	$0	$1,929,601	$6,563,082	$7,619,235	$8,694,235	$10,844,235	$35,650,388
Monitoring, Research, and Adaptive Management	$0	$897,309	$2,769,384	$3,204,307	$3,788,148	$4,223,749	$14,882,897
Contingency	$0	$0	$1,187,771	$1,128,603	$1,211,024	$1,363,789	$4,891,187
Total	**$325,094**	**$18,788,830**	**$26,829,503**	**$24,947,133**	**$25,957,310**	**$27,892,670**	**$124,740,539**

NOTE: Original unit cost estimates for the 2006 HCP/NCCP were in 2005 dollars, inflated to 2006 dollars for use in the plan document.

Consumer Price Index - All Urban Consumers
Original Data Value

Series Id: CUURA422SA0

Data extracted on: March 29, 2017 (8:35:58 PM)

Not Seasonally Adjusted
Area: San Francisco-Oakland-San Jose, CA
Item: All items
Base Period: 1982-84=100
Years: 2005 to 2017

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	HALF1	HALF2	2016 dollars
2005		201.2		202.5		201.2		203.0		205.9		203.4	202.7	201.5	203.9	0.7610
2006		207.1		208.9		209.1		210.7		211.0		210.4	209.2	207.9	210.6	0.7855
2007		213.688		215.842		216.123		216.240		217.949		218.485	216.048	214.736	217.361	0.8112
2008		219.612		222.074		225.181		225.411		225.824		218.528	222.767	221.730	223.804	0.8364
2009		222.166		223.854		225.692		225.801		226.051		224.239	224.395	223.305	225.484	0.8425
2010		226.145		227.697		228.110		227.954		228.107		227.658	227.469	226.994	227.944	0.8540
2011		229.981		234.121		233.646		234.608		235.331		234.327	233.390	232.082	234.698	0.8763
2012		236.880		238.985		239.806		241.170		242.834		239.533	239.650	238.099	241.201	0.8998
2013		242.677		244.675		245.935		246.072		246.617		245.711	245.023	243.894	246.152	0.9199
2014		248.615		251.495		253.317		253.354		254.503		252.273	251.985	250.507	253.463	0.9461
2015		254.910		257.622		259.117		259.917		261.019		260.289	258.572	256.723	260.421	0.9708
2016		262.600		264.565		266.041		267.853		270.306		269.483	266.344	263.911	268.777	1.0000
2017		271.626														

Employment Cost Index (NAICS)
Original Data Value

Series Id: CIU2010000120000I
Not seasonally adjusted
Series Title: Total compensation for Private industry workers in
Ownership: Private industry workers
Component: Total compensation
Occupation: Professional and related occupations
Industry: All workers
Subcategory: All workers
Area: United States (National)
Periodicity: Index number
Years: 2005 to 2016

Year	Qtr1	Qtr2	Qtr3	Qtr4	2016 dollars
2005	98.0	98.8	99.5	100.0	0.7893
2006	101.0	101.8	103.1	103.9	0.8200
2007	104.9	105.9	106.7	107.3	0.8469
2008	108.3	109.0	109.9	110.3	0.8706
2009	111.0	111.1	111.4	111.4	0.8792
2010	112.2	112.6	113.3	113.5	0.8958
2011	114.6	115.1	115.4	115.7	0.9132
2012	116.8	117.3	117.7	118.2	0.9329
2013	118.9	119.5	120.2	120.5	0.9511
2014	121.0	121.9	122.5	122.9	0.9700
2015	123.7	124.1	124.5	124.9	0.9858
2016	125.7	126.2	126.7	126.7	1.0000

California Construction Cost Index, Department of General Services

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	2016 dollars		
2006	4620	4603	4597	4600	4599	4593	4609	4616	4619	4867	4891	4877	4,674	0.74759		
2007	4869	4868	4871	4872	4886	4842	4849	4851	4942	4943	4978	4981	4,896	0.78306		
2008	4983	4983	4999	5004	5023	5065	5135	5142	5194	5393	5375	5322	5,135	0.82126		
2009	5309	5295	5298	5296	5288	5276	5263	5265	5264	5259	5259	5262	5,278	0.84413		
2010	5260	5262	5268	5270	5378	5394	5401	5401	5381	5591	5599	5596	5,400	0.86368		
2011	5592	5624	5627	5636	5637	5643	5654	5667	5668	5675	5680	5680	5,649	0.90342		
2012	5683	5683	5738	5740	5755	5754	5750	5778	5777	5780	5779	5768	5,749	0.91944		
2013	5774	5782	5777	5786	5796	5802	5804	5801	5802	5911	5903	5901	5,820	0.93083	1.24%	
2014	5898	5896	5953	5956	5957	5961	5959	5959	5959	5969	5981	5977	5,952	0.95197	2.27%	
2015	6073	6077	6069	6062	6069	6055	6055	6055	6113	6114	6109	6108	6,080	0.97241	2.15%	
2016	6106	6132	6248	6249	6240	6238	6245	6244	6267	6343	6344	6373	6,252	1.00000	2.84%	8.49%
2017	6373	6373	6373													

The California Construction Cost index is developed based upon Building Cost Index (BCI) cost indices for San Francisco and Los Angeles produced by Engineering News Record (ENR) and reported in the second issue each month for the previous month. This table is updated at the end of each month.

The ENR BCI reports cost trends for specific construction trade labor and materials in the California marketplace.

This page last updated: 4/17/17

Available at: https://www.documents.dgs.ca.gov/resd/PMB/CCCI/Old/cccitable_2017/CCCIMasterListing_4-2017.pdf

Legend

red numbers are assumptions or data entered directly into the worksheet
blue numbers are links from other worksheets in the workbook
black numbers are calculations based on the above numbers

Cost factors are colored coded by primary source considered:

EBRPD (for HCP)
CCWD (for HCP)
Average of CCWD/EBRPD
ECCC Habitat Conservancy
J&S and EPS (for HCP)
AECOM, 2012
Updated by HEG, 2017
Updated with input from H.T. Harvey, 2017
Other estimated factors
Actual costs start-up and years 1 - 9
Estimate of EBRPD contributions to operational costs, start up and years 1-9
Summary actuals supercede model detail

Acres Acquired, Managed, and Restored within HCP/NCCP Preserves for Maximum Urban Development Area
2017 Update

	Maximum UDA	Source
Total acres acquired/managed	30,200	(Table 5-9: mid-point of range)
Pond acres acquired	16	(Table 5-5a)

Acres Acquired and Managed by Time Period

	Implementation Period (Years)							
	0		1-9	10-15 (6 yr period)	16-20	21-25	26-30	Total
Total reserve acres acquired per period	-		10,987	5,489	4,574	4,574	4,574	30,200
Total reserve acres managed, per period			10,067	5,033	5,033	5,033	5,033	30,200
Total reserve acres managed, cumulative	-		10,067	15,100	20,133	25,167	30,200	30,200
Pond acres acquired per period			10.86	1.5	1.2	1.2	1.2	16
Pond acres added to management per period			5.33	2.7	2.7	2.7	2.7	16
Pond acres managed cumulative, including restoration	-		5.37	14.3	22.2	30.1	38.0	38.0

Assumptions:

Actual acquisition accounted for in years 1-5 and 6-9; the net remaining requirement is allocated evenly over the remaining 21 years of the permit term.

Management and monitoring on acquired land and ponds has not kept pace with actual acquisition; land is assumed to come under management in 6 equal increments over the 30-year perr

13,349.6	Total acres acquired through 2016
1,682.3	Easement acres on parcels acquired through 2016
680.0	Other acres (outside acquisition zones) not credited to reserve through 2016
10,987.2	Total acres acquired and credited toward reserve

Land Cover Type Restored/Created by Time Period

	Implementation Period (Years)							
Land Cover Type (acres except where noted)	0		1-9	10-15 (6 yr period)	16-20	21-25	26-30	Total
oak savanna	-		-	47.1	39.3	39.3	39.3	165.0
riparian woodland/scrub	-		4.04	14.6	12.1	12.1	12.1	55.0
perennial wetland (jurisdictional boundary)	-		0.16	9.2	7.7	7.7	7.7	32.5
seasonal wetland (jurisdictional boundary)	-		5.79	13.7	11.4	11.4	11.4	53.6
alkali wetland (jurisdictional boundary)	-		2.12	6.1	5.1	5.1	5.1	23.6
slough/channel	-		-	20.6	17.1	17.1	17.1	72.0
open water	-		-	-	-	-	-	-
ponds	-		0.04	6.3	5.2	5.2	5.2	22.0
streams (miles)	-		1.10	1.3	1.1	1.1	1.1	5.8
Total (acres)	-		12.82	**118.4**	**98.7**	**98.7**	**98.7**	**427.2**

Assumptions:

Actual restoration accounted for in years 1-9; the net remaining requirement is allocated evenly over the next 21 years of the permit term.

For total acre calculation, streams are assumed to be 5 feet wide

30%	% of perennial, seasonal or alkali wetland complex acreage assumed to be jurisdictional wetland; for compensatory restoration only.

Defining sites:	average acres/site or linear feet/site (streams)	% requiring substantial soil disturbance
riparian/woodland scrub sites by acreage conversion:	3	20%
wetlands and pond sites by acreage conversion	2.0	80%
stream sites by linear feet conversion:	1,000	90%

Restoration sites that require significant soil disturbance by land-cover type USED IN MONITORING COST ESTIMATE

	Implementation Period (Years)							
Land Cover Type Restoration Sites	0		1-9	10-15 (6 yr period)	16-20	21-25	26-30	Total
riparian woodland/scrub	-		0.3	1.0	0.8	0.8	0.8	3.7
perennial wetland	-		0.1	3.7	3.1	3.1	3.1	13.0
seasonal wetland	-		2.3	5.5	4.6	4.6	4.6	21.4
alkali wetland	-		0.8	2.5	2.0	2.0	2.0	9.4
ponds	-		-	8.2	6.9	6.9	6.9	28.8
streams (miles/acres converted to sites)	-		5.2	6.4	5.3	5.3	5.3	27.6
Total sites for monitoring cost estimate	-		8.7	27.2	22.7	22.7	22.7	103.9

Assumptions:

Average acres/site and percent of sites requiring substantial soil disturbance calculated in table above.

Seasonal, perennial, and alkali wetland acreages in Tables 5-16 and 5-17 are for wetland complexes; for cost estimates and revenue projections the wetted acres of these complexes are assumed to be 30% of the total acres.

Summary of HCP/NCCP Personnel
2017 Update

	2012 UPDATE STAFFING								2017 UPDATE STAFFING							POST PERMIT STAFFING
	Number of FTEs								Number of FTEs							Number of FTEs
UPDATE STAFFING	0	1-5	6-10	11-15	16-20	21-25	26-30		0	1-5	6-9	10-15	16-20	21-25	26-30	
Administrative staffing									**Administrative staffing**							
Principal Planner			0.50	0.80	0.80	0.80	0.80					0.60	0.60	0.60	0.60	0.50
Senior Planner			0.30	0.50	0.50	0.50	0.50					-				
Senior GIS Planner			0.25	0.25	0.25	0.25	0.25					0.05	0.05	0.05	0.05	0.05
Associate Planner			0.80	-	-	-	-					1.85	1.85	1.85	1.85	0.50
Assistant Planner/Planning Technician			0.25	0.50	0.50	0.50	0.50					0.30	0.30	0.30	0.30	0.15
Accountant			0.25	0.25	0.25	0.25	0.25					0.40	0.40	0.40	0.40	0.20
Admin – Secretary (included in rates)			-	-	-	-	-					-	-	-	-	-
IT Support Staff (included in rates)			-	-	-	-	-					-	-	-	-	-
Total			2.35	2.30	2.30	2.30	2.30	Total				3.20	3.20	3.20	3.20	1.40
Land acquisition staffing									**Land acquisition staffing**							
Principal Planner			0.20	0.20	0.20	0.20	0.20					0.15	0.15	0.15	0.15	-
Senior GIS Planner												0.05	0.05	0.05	0.05	-
Associate Planner												0.30	0.20	0.20	0.20	-
Total			0.20	0.20	0.20	0.20	0.20	Total				0.50	0.40	0.40	0.40	-
Planning and design, restoration, and monitoring staffing									**Planning and design, restoration, and monitoring staffing**							
Principal Planner			0.10	-	-	-	-					0.05	0.05	0.05	0.05	-
Senior GIS Planner												0.05	0.05	0.05	0.05	-
Senior Planner			0.20	-	-	-	-					-	-	-	-	-
Senior Scientist			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Associate Planner			0.17	0.33	0.33	0.33	0.33					0.30	0.30	0.30	0.30	-
Technical Support			0.17	0.67	0.67	0.67	0.33					-	-	-	-	-
Total			0.80	1.33	1.33	1.33	1.00	Total				0.40	0.40	0.40	0.40	-
Habitat restoration and creation staffing									**Habitat restoration and creation staffing**							
Principal Planner			0.10	-	-	-	-					0.05	0.05	0.05	0.05	-
Associate Planner/Project Manager			0.20	-	-	-	-					0.30	0.30	0.30	0.30	-
Senior Scientist			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Project Manager			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Technical Support			0.17	0.67	0.67	0.67	0.33					-	-	-	-	-
Total			0.80	1.33	1.33	1.33	1.00	Total				0.35	0.35	0.35	0.35	-
Environmental compliance staffing									**Environmental compliance staffing**							
Principal Planner			-	-	-	-	-					0.05	0.05	0.05	-	-
Associate Planner												0.10	0.10	0.10	-	-
Total			-	-	-	-	-	Total				0.15	0.15	0.15	-	-
Preserve management and maintenance staffing									**Preserve management and maintenance staffing**							
Principal Planner			0.10	-	-	-	-					0.025	0.025	0.025	0.025	0.025
Senior Planner			0.20	-	-	-	-					-	-	-	-	-
Associate Planner/Preserve Manager			1.00	1.00	1.00	1.00	1.00					0.05	0.05	0.05	0.05	0.05
Preserve Maintenance Staff			3.00	4.00	6.00	7.00	8.00					5.00	7.00	8.00	10.00	10.00
Total			4.30	5.00	7.00	8.00	9.00	Total				5.075	7.075	8.075	#####	10.075
Monitoring and research staffing									**Monitoring and research staffing**							
Principal Planner			-	-	-	-	-					0.025	0.025	0.025	0.025	0.025
Senior Planner			0.10	-	-	-	-					-	-	-	-	-
Senior Scientist			0.17	0.33	0.33	0.33	0.33					-	-	-	-	-
Associate Planner			0.17	0.33	0.33	0.33	0.33					0.05	0.30	0.33	0.33	-
Technical Support			0.17	0.67	0.67	0.67	0.33					-	-	-	-	-
Total			0.60	1.33	1.33	1.33	1.00	Total				0.075	0.325	0.358	0.358	0.025
Overall Staffing Plan									**Overall Staffing Plan**							
Principal Planner			1.00	1.00	1.00	1.00	1.00					0.95	0.95	0.95	0.90	0.55
Senior Planner			1.00	0.50	0.50	0.50	0.50					-	-	-	-	-
Senior GIS Planner			0.25	0.25	0.25	0.25	0.25					0.15	0.15	0.15	0.15	0.05
Associate Planner/Preserve Manager			0.80	-	-	-	-					2.95	3.10	3.13	3.03	0.55
Assistant Planner/Planning Technician			0.25	0.50	0.50	0.50	0.50					0.30	0.30	0.30	0.30	0.15
Accountant			0.25	0.25	0.25	0.25	0.25					0.40	0.40	0.40	0.40	0.20
Admin – Secretary (included in rates)			-	-	-	-	-					-	-	-	-	-
IT Support Staff (included in rates)			-	-	-	-	-					-	-	-	-	-
Senior Scientist			0.50	1.00	1.00	1.00	1.00					-	-	-	-	-
Project Manager			0.50	1.00	1.00	1.00	1.00					-	-	-	-	-
Technical Support			0.50	2.00	2.00	2.00	1.00					-	-	-	-	-
Preserve Manager			1.00	1.00	1.00	1.00	1.00					-	-	-	-	-
Preserve Maintenance Staff			3.00	4.00	6.00	7.00	8.00					5.00	7.00	8.00	10.00	10.00
Total			**9.05**	**11.50**	**13.50**	**14.50**	**14.50**	Total				**9.75**	**11.90**	**12.93**	**14.78**	**11.50**

HCP/NCCP Program Administration for Maximum Urban Development Area

2017 Update

(2016 dollars)

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Capital Costs								
Capital Subtotal	**INCLUDED IN STAFF AND OVERHEAD COSTS**							
Operational Costs								
Staff and overhead				$4,587,012	$3,822,510	$3,822,510	$3,822,510	
Other administrative costs				$36,000	$30,000	$30,000	$30,000	
Vehicle / mileage allowance				$9,000	$7,500	$7,500	$7,500	
Travel				$36,000	$30,000	$30,000	$30,000	
Insurance				$120,000	$100,000	$100,000	$100,000	
Legal assistance				$600,000	$300,000	$300,000	$300,000	
Financial analysis assistance				$65,000	$65,000	$65,000	$65,000	
Financial audit (annual)				$120,000	$100,000	$100,000	$100,000	
In-lieu funding for law enforcement and firefighting				$50,631	$56,256	$70,320	$84,384	
Public relations and outreach				$150,000	$125,000	$125,000	$125,000	
Operational Subtotal	**$159,352**	**$3,328,033**	**$3,466,978**	**$5,773,643**	**$4,636,266**	**$4,650,330**	**$4,664,394**	
Total	**$159,352**	**$3,328,033**	**$3,466,978**	**$5,773,643**	**$4,636,266**	**$4,650,330**	**$4,664,394**	**$26,678,996**

Staff and Overhead

Position	Hourly Cost per FTE with Overhead & Support	Number of FTEs						
		0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.60	0.60	0.60	0.60
Senior Planner and support	$177				-	-	-	-
Senior GIS Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				1.85	1.85	1.85	1.85
Planning Technician and support	$104				0.30	0.30	0.30	0.30
Accountant and support	$133				0.40	0.40	0.40	0.40
	Total FTEs				3.20	3.20	3.20	3.20
	Total cost per year				$764,502	$764,502	$764,502	$764,502
	Total cost per period				$4,587,012	$3,822,510	$3,822,510	$3,822,510

Notes/Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Some actual costs for program administration staff and contractors through 2016 are included in actual costs under land acquisition, planning and design, preserve management, restoration, monitoring and environmental compliance.

1,880 hours per year

East Contra Costa County HCP/NCCP Cost Tables

Other Administrative Costs	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
CHCPC membership (IEH)				$30,000	$25,000	$25,000	$25,000
Miscellaneous equipment and supplies				$6,000	$5,000	$5,000	$5,000
Cost per period				$36,000	$30,000	$30,000	$30,000

Assumption:

$5,000	annual cost for CHCPC membership, based on actual Conservancy experience through 2016 (Institute for Ecological Health)
$1,000	annual cost based on actual Conservancy experience through 2016

Vehicle / Mileage Allowance	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost per period				$9,000	$7,500	$7,500	$7,500

Assumption:

$1,500	annual cost based on actual Conservancy experience through 2016

Travel	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost per period				$36,000	$30,000	$30,000	$30,000

Assumption:

$6,000	annual cost based on actual Conservancy experience through 2016

Insurance	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost per period				$120,000	$100,000	$100,000	$100,000

Assumption:

$20,000	annual cost based on actual Conservancy experience through 2016

Legal Assistance	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$600,000	$300,000	$300,000	$300,000	$1,500,000

Assumptions:

$100,000	Annual cost for legal assistance, years 10 - 15
$60,000	Annual cost for legal assistance, after year 15

Note: The legal assistance category covers legal assistance required for program administration and (for years 6 - 10) the environmental compliance category.
Legal assistance for land acquisition included in the due diligence cost factor in the land acquisition category.
Legal assistance is also estimated for the environmental compliance category.

East Contra Costa County HCP/NCCP Cost Tables

Financial Analysis Assistance

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$65,000	$65,000	$65,000	$65,000	$260,000

Assumptions:

$65,000	Cost per period for financial analysis assistance

Financial analyst review will occur periodically over the life of the Plan (years 3, 6, 10, 15, 20 and 25).

Note: The financial analyis assistance category covers the periodic assistance of a financial analyst to review the program's cost/revenue balance, ensure that charges are adjusted in line with changing land costs and ensure compliance with State requirements on collection of fees.

Annual Financial Audit

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$120,000	$100,000	$100,000	$100,000	$420,000

Assumptions:

$20,000	Cost per year for financial audit services based on Conservancy experience through 2016

Annual financial audit of the Conservancy's financial statements by an independent auditor are required by the JPA agreement and Government Code.

In-Lieu Payments for Law Enforcement and Firefighting

	Cost by Implementation Period (Years)						
	0	1-5	6-10	10-15	16-20	21-25	26-30
Total preserve area per period	-	-	10,067	15,100	20,133	25,167	30,200
In-lieu payments for law enforcement per year			$2,221	$3,331	$4,441	$5,552	$6,662
In-lieu payments for firefighting per year			$3,405	$5,107	$6,810	$8,512	$10,215
Total cost per year			$5,626	$8,438	$11,251	$14,064	$16,877
Cost per period			$28,128	$50,630.51	$56,256	$70,320	$84,384

Assumptions:

$4.53	In-lieu law enforcement funding per preserve acre
$2.96	In-lieu firefighting funding per preserve acre

In lieu costs per preserve acres are based on CCWD's annual in-lieu payments and the assumption that CCWD manages approximately 20,000 acres of preserve.

Public Relations/Outreach

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Total cost per year				$25,000	$25,000	$25,000	$25,000	$100,000
Cost per period				$150,000	$125,000	$125,000	$125,000	$525,000

HCP/NCCP Land Acquisition for Maximum Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)						
Capital Costs	0	1-9	10-15	16-20	21-25	26-30	**Total**
Acquisition	$0	$86,372,000	$47,903,038	$39,919,198	$39,919,198	$39,919,198	$254,032,633
Site improvements	$0	$0	$1,423,450	$1,304,467	$1,304,467	$1,304,467	$5,336,851
Capital Subtotal	**$0**	**$86,372,000**	**$49,326,489**	**$41,223,665**	**$41,223,665**	**$41,223,665**	**$259,369,485**
Operational Costs							
Program staff and overhead	na	na	$778,320	$249,570	$249,570	$249,570	$1,527,030
Due diligence	$165,742	$2,555,630	$1,437,091	$1,197,576	$1,197,576	$1,197,576	$7,751,190
Operational Subtotal	**$165,742**	**$2,555,630**	**$2,215,411**	**$1,447,146**	**$1,447,146**	**$1,447,146**	**$9,278,220**
Total	**$165,742**	**$88,927,630**	**$51,541,900**	**$42,670,811**	**$42,670,811**	**$42,670,811**	**$268,647,705**

Acquisition Cost over 30-year Program, Actuals year 1 - 9 + Projections Years 10 - 30 (2016 dollars)

	Cost by Implementation Period (Years)							Estimated
Acquisition Analysis Zone	0	1-9	10-15	16-20	21-25	26-30	**Total**	**Remainder 10-30**
Zone 1	$0	$8,385,000	$4,362,019	$3,635,016	$3,635,016	$3,635,016	$23,652,065	$15,267,065
Zone 2	$0	$31,138,000	$13,767,038	$11,472,532	$11,472,532	$11,472,532	$79,322,635	$48,184,635
Zone 3	$0	$2,217,000	$326,188	$271,823	$271,823	$271,823	$3,358,656	$1,141,656
Zone 4	$0	$6,417,000	$14,517,791	$12,098,160	$12,098,160	$12,098,160	$57,229,270	$50,812,270
Zone 5	$0	$26,249,000	$11,382,988	$9,485,823	$9,485,823	$9,485,823	$66,089,456	$39,840,456
Zone 6 (incl. within ULL along Marsh Creek)	$0	$6,072,000	$2,814,940	$2,345,783	$2,345,783	$2,345,783	$15,924,289	$9,852,289
Outside Inventory Area	$0		$356,064	$296,720	$296,720	$296,720	$1,246,224	$1,246,224
Outside Acquisition Zones	$0	$5,894,000	$376,011	$313,342	$313,342	$313,342	$7,210,038	$1,316,038
Total	**$0**	**$86,372,000**	**$47,903,038**	**$39,919,198**	**$39,919,198**	**$39,919,198**	**$254,032,633**	**$167,660,633**
Assumptions:		34%						66%

Actual acquisition cost through year 9, in 2016 dollars. Updated 2016 land cost factors by cost category applied to remaining acquisition targets. Total remaining cost allocated evenly over remaining 21 years of the permit term.

See Appendix G and description of separate land cost model in Chapter 9.

Program Staff and Overhead

Position	Hourly Cost per FTE with Overhead & Support	Number of FTEs						
		0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.15	0.15	0.15	0.15
Senior GIS Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				0.30	0.20	0.20	0.20
Total FTEs					0.50	0.40	0.40	0.40
Total cost per year					$129,720	$49,914	$49,914	$49,914
Total cost per period					$778,320	$249,570	$249,570	$249,570

Notes/Assumptions:

Actual staff costs for years 0 - 9 are included in the due diligence actuals below.

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Due Diligence

Covers costs for appraisals, preliminary title report, escrow and other closing costs, boundary surveys, legal services, environmental and Phase 1 site assessment.
Includes Conservancy staff costs on land acquisition projects.
The 2006 cost model used more detailed unit costs. The result of applying those cost factors in the 2006 model was that due diligence represented about 4% of land acquisition costs.
For the 2012 and 2016 updates the model is simplified to assume due diligence costs (not including Conservancy staff costs) at 3% of land acquisition costs, roughly consistent with the experience of the Conservancy and EBRPD through 2016, during which time about 35 percent of the reserve goals for land acquisition took place. For years 10 -30, Conservancy staff time costs are separately estimated and included in Program Staff line item above.

	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Due Diligence	$165,742	$1,504,429	$1,051,201	$1,437,091	$1,197,576	$1,197,576	$1,197,576	$7,751,190

Assumptions:

3.0%	Due diligence costs as a percentage of land acquisition cost.

Planning Surveys (Pre-Acquisition)

Based on Conservancy and EBRPD experience to date, initial property evaluation and planning is included in staff and consultant time.
Most significant field biological work is done post acquisition and is included as a monitoring cost.

Site Improvements

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Demolition of old facilities				$88,113	$73,427	$73,427	$73,427
Repair of boundary fence				$709,550	$709,550	$709,550	$709,550
Repair and replacement of gates				$296,426	$247,021	$247,021	$247,021
Signs (boundary, landbank, etc.)				$181,149	$150,958	$150,958	$150,958
Other security (e.g., boarding up barns)				$148,213	$123,511	$123,511	$123,511
Total				$1,423,450	$1,304,467	$1,304,467	$1,304,467

Assumptions:

Most demolition to date is a condition of the transaction and assigned to the seller. Other site improvement costs included in EBRPD operations and maintenance costs to date.

$8,026	Demolition of old facilities per 500 acres
$5,400	Repair and replacement of gates per 100 acres
$3,300	Signs (boundary, landbank, etc.) per 100 acres
$2,700	Other security (e.g., boarding up barns) per 100 acres
300	Estimated number of parcels acquired years 10 - 30 assuming 100 acres per parcel
15,000	Average parcel boundary length in linear feet (from GIS analysis, grouping adjacent parcels with the same landowner)
$5.26	Average cost per linear foot for boundary fence repair
15%	Proportion of boundary fence that needs repair

HCP/NCCP Management and Restoration Planning and Design for Maximum Urban Development Area

2017 Update

(2016 dollars)

	Cost by Implementation Period (Years)							
Capital costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Vehicle purchase (included in overhead and contractor cost								
Capital subtotal				**$0**	**$0**	**$0**	**$0**	
Operational costs								
Program staff and overhead				$578,664	$482,220	$482,220	$482,220	
Technical staff and overhead				$0	$0	$0	$0	
Travel				$15,000	$12,500	$12,500	$12,500	
Contractors				$1,520,400	$1,140,300	$570,150	$570,150	
Operational subtotal	**$0**	**$1,262,793**	**$668,355**	**$2,114,064**	**$1,635,020**	**$1,064,870**	**$1,064,870**	
Total	**$0**	**$1,262,793**	**$668,355**	**$2,114,064**	**$1,635,020**	**$1,064,870**	**$1,064,870**	**$7,809,972**

Program Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.05	0.05	0.05	0.05
Senior GIS Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				0.30	0.30	0.30	0.30
Total FTEs					0.40	0.40	0.40	0.40
Total cost per year					$96,444	$96,444	$96,444	$96,444
Total cost per period					$578,664	$482,220	$482,220	$482,220

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies, .

Technical Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Senior scientist and support	$177				-	-	-	-
Planning Technician and support	$104				-	-	-	-
Total FTEs					-	-	-	-
Total cost per year					$0	$0	$0	$0
Total cost per period					$0	$0	$0	$0

Notes/Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Travel (shared with restoration and monitoring)

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Total cost per period				$15,000	$12,500	$12,500	$12,500

Assumption:

$6,250	annual cost based on Conservancy 2017 budget
0.40	proportion of travel costs that are used for planning (40% used for restoration and included in the restoration spreadsheet, and 20% used for monitoring and included in the monitoring spreadsheet)

Contractors

	Contract value per period						
Contractor category	0	1-5	6-9	10-15	16-20	21-25	26-30
Management planning				$760,200	$570,150	$0	$0
Restoration planning				$760,200	$570,150	$570,150	$570,150
Total per period			$0	$1,520,400	$1,140,300	$570,150	$570,150

Assumptions:

Restoration designs included in habitat restoration/creation cost as of 2017 update.

The management and restoration planning and design staff and contractors will conduct the following activities:

Management Planning

Management plans prepared for cropland/pasture preserves
Management plans prepared for natural area preserves
Grazing leases developed or renewed
Jurisdictional wetland delineation
Exotic Plant Control Program (Preserve System-wide)
Fire management/control plan (System-wide)

Restoration Planning & Design (restoration construction designs included in the habitat restoration/creation cost category)

Pond creation plan and construction designs
Wetland creation plan and construction designs
Stream restoration plan and construction designs
Oak savanna restoration plan and construction designs
Riparian woodland/scrub restoration plan and construction designs

HCP/NCCP Habitat Restoration/Creation for Maximum Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
Capital Costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Creation/Restoration				$8,527,611	$7,106,343	$7,106,343	$7,106,343	
Vehicle purchase (included in overhead and contractor cost								
Capital Subtotal				**$8,527,611**	**$7,106,343**	**$7,106,343**	**$7,106,343**	
Operational Costs								
Program staff and overhead				$478,836	$399,030	$399,030	$399,030	
Technical staff and overhead				$0	$0	$0	$0	
Travel				$15,000	$12,500	$12,500	$12,500	
Contractors				$4,647,548	$3,872,957	$3,872,957	$3,872,957	
Operational Subtotal	**$0**	**$2,439,332**	**$1,470,246**	**$5,141,384**	**$4,284,487**	**$4,284,487**	**$4,284,487**	
Total	**$0**	**$2,439,332**	**$1,470,246**	**$13,668,995**	**$11,390,829**	**$11,390,829**	**$11,390,829**	**$51,751,061**

Land Cover Type Restored/Created

	Implementation Period (Years)							
Land Cover Type (acres)	**0**		**1-9**	10-15	16-20	21-25	26-30	Total
oak savanna	-		-	47.1	39.3	39.3	39.3	165.0
riparian woodland/scrub	-		4.0	14.6	12.1	12.1	12.1	55.0
perennial wetland	-		0.2	9.2	7.7	7.7	7.7	32.5
seasonal wetland	-		5.8	13.7	11.4	11.4	11.4	53.6
alkali wetland	-		2.1	6.1	5.1	5.1	5.1	23.6
slough/channel	-		-	20.6	17.1	17.1	17.1	72.0
open water	-		-	-	-	-	-	-
ponds	-		0.0	6.3	5.2	5.2	5.2	22.0
streams (miles)	-		1.1	1.3	1.1	1.1	1.1	5.8
Total (acres)	-		12.8	118.4	98.7	98.7	98.7	427.2

Cost of Restoration/Creation Construction

			Cost by Implementation Period (Years)						
Land Cover Type	Units	Cost per unit	0		1-9	10-15	16-20	21-25	26-30
oak savanna	acres	$15,000				$848,571	$707,143	$707,143	$707,143
riparian woodland/scrub	acres	$42,199				$737,308	$614,423	$614,423	$614,423
perennial wetland	acres	$68,846				$763,364	$636,136	$636,136	$636,136
seasonal wetland	acres	$82,115				$1,346,026	$1,121,688	$1,121,688	$1,121,688
alkali wetland	acres	$83,094				$611,949	$509,958	$509,958	$509,958
slough/channel	acres	$62,538				$1,543,789	$1,286,491	$1,286,491	$1,286,491
open water	acres	$91,251				$0	$0	$0	$0
ponds	acres	$91,251				$687,040	$572,533	$572,533	$572,533
streams	linear feet	$234				$1,989,564	$1,657,970	$1,657,970	$1,657,970
	Total					$8,527,611	$7,106,343	$7,106,343	$7,106,343

Assumptions:

Construction costs depend mostly on the amount, depth, and linear extent of earthwork expected, and whether water control structure are required. Plant propagation, seeding, and watering also included.

For 2017 update, unit costs increased based on change in the California Construction Cost Index published by the State of California Department of General Services. Available at: https://www.documents.dgs.ca.gov/resd/PMB/CCCI/Old/cccitable_2017/CCCIMasterListing_4-2017.pdf

20%	Contingency factor for restoration projects; assumed higher than the standard contingency because of the higher degree of uncertainty in this portion of the conservation program.

East Contra Costa County HCP/NCCP Cost Tables

Program Staff and Overhead

Position	Hourly Cost per FTE with Overhead & Support	Number of FTEs 0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.05	0.05	0.05	0.05
Associate Planner and support	$112				0.30	0.30	0.30	0.30
Total FTEs					0.35	0.35	0.35	0.35
Total cost per year					$79,806	$79,806	$79,806	$79,806
Total cost per period					$478,836	$399,030	$399,030	$399,030
1,880	hours per year							

Technical Staff and Overhead

Position	Hourly Cost per FTE with Overhead &	Number of FTEs 0	1-5	6-9	10-15	16-20	21-25	26-30
Senior scientist and support	$177				-	-	-	-
Associate Planner and support	$112				-	-	-	-
Planning Technician and support	$104				-	-	-	-
Total FTEs					-	-	-	-
Total cost per year					$0	$0	$0	$0
Cost per period					$0	$0	$0	$0

Assumptions:

Habitat Conservancy staff select sites, hire and oversee consultants for plans, specifcations, and implementation. Staff shared with other implementation tasks; the amount listed is the estimated portion to support wetland mitigation creation/restoration.

Cost includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Travel (shared with planning and monitoring)

	Cost by Implementation Period (Years) 0	1-5	6-9	10-15	16-20	21-25	26-30
Total cost per period				$15,000	$12,500	$12,500	$12,500

Assumption:

$6,250	annual cost based on Conservancy 2017 budget
0.40	proportion of travel costs that are used for restoration (40% used for planning and included in the planning spreadsheet, and 20% used for monitoring and included in the monitoring spreadsheet)

Contractors

Contractor category	Cost by Implementation Period (Years) 0	1-5	6-9	10-15	16-20	21-25	26-30
Design, plans, specifications, and engineering				$2,814,112	$2,345,093	$2,345,093	$2,345,093
Bid assistance				$127,914	$106,595	$106,595	$106,595
Construction oversight				$852,761	$710,634	$710,634	$710,634
Post-construction maintenance				$852,761	$710,634	$710,634	$710,634
Cost per period				$4,647,548	$3,872,957	$3,872,957	$3,872,957

Assumptions:

33%	percent of total construction cost required to complete restoration design and plans, specifications, engineering and provide allowance for remedial measures
1.50%	percent of total construction cost required for bid assistance
10%	percent of total construction cost required for construction oversight
10%	percent of total construction cost required for post construction maintenance

The total area of restoration that occurs in each period will be designed as three different projects (approximately 14 acres each).

Design, plan, specification, and engineering work, bid assistance, and construction oversight will be conducted in the period in which construction takes place.

Two years of post-construction maintenance will be conducted in the period after construction takes place to maintain irrigation systems, conducting weeding, etc. Management costs after success criteria are met is included in development fee paid for same site (wetland mitigation fee is in addition).

HCP/NCCP Preserve Management and Maintenance for Maximum Urban Development Area
2017 Update
(2016 dollars)

	Implementation Period (Years)							
Capital Costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Vehicle purchase								
Equipment - capital								
Field facilities								
Contractors - capital								
Recreation facilities								
Capital Subtotal				**$0**	**$0**	**$0**	**$0**	
Operational Costs								
Program staff and overhead				$49,914	$41,595	$41,595	$41,595	
Preserve staff and overhead				$4,293,168	$4,987,640	$5,692,640	$7,102,640	
Facilities Maintenance/Vehicles and equipment				$2,220,000	$2,590,000	$2,960,000	$3,700,000	
Equipment - operational				$0	$0	$0	$0	
Facilities maintenance and utilities								
Water pumping								
Contractors - operational								
Recreation - operational				$0	$0	$0	$0	
Operational Subtotal	**$0**	**$386,065**	**$1,543,536**	**$6,563,082**	**$7,619,235**	**$8,694,235**	**$10,844,235**	
Total	**$0**	**$386,065**	**$1,543,536**	**$6,563,082**	**$7,619,235**	**$8,694,235**	**$10,844,235**	**$35,650,388**

Covered in facilities maintenance line item below.

Covered in facilities maintenance line item above.

NOTE: Costs for years 1 - 9 include expenditures by the East Bay Regional Park District on land maintenance activities on Conservancy properties (staff costs, maintenance supplies, maintenance services from inception throught 2016. Details provided by the East Contra Costa County Habitat Conservancy.

Program Staff and Overhead

Position	Hourly Cost per FTE with Overhead & Support	Number of FTEs						
		0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and Support	$177				0.025	0.025	0.025	0.025
Senior Planner and Support	$177				-	-	-	-
Total FTEs					0.025	0.025	0.025	0.025
Total cost per year					$8,319	$8,319	$8,319	$8,319
Total cost per period					$49,914	$41,595	$41,595	$41,595

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Preserve Staff and Overhead

Position	Preserve area per position (acres)	Hourly Cost per FTE with Overhead & Support	Number of FTEs						
			0	1-5	6-9	10-15	16-20	21-25	26-30
Preserve Manager and support		$112				0.05	0.05	0.05	0.05
Preserve maintenance staff	3,000	$75				5.0	7.0	8.0	10.0
Total FTEs						5.05	7.05	8.05	10.05
Total cost per year						$715,528	$997,528	$1,138,528	$1,420,528
Total cost per period						$4,293,168	$4,987,640	$5,692,640	$7,102,640

Notes/Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year, excluding vacation

Preserve maintenance including capital and operational costs for all maintenance activities (new cost approach for 2017 update)

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
				5.0	7.0	8.0	10.0
Total cost per year				$370,000	$518,000	$592,000	$740,000
Total cost per period				$2,220,000	$2,590,000	$2,960,000	$3,700,000

Notes/Assumptions:

Annual cost per FTE	$74,000

For 2017 update, revised the approach to this component of the cost estimate. Replaced detailed estimates of schedules for vehicle and equipment purchases, field facilities construction, and various maintenance activities with a per-FTE factor derived from analysis of the EBRPD budget for the Maintenance and Skilled Trades Department within the Parks Operations Division. This department acquires, manages, and services the vehicles, trailers, landscaping equipment, heavy equipment, police vehicles, boats and fire apparatus needed to manage and maintain EBRPD properties. The department also repairs and maintains buildings and utilities infrastructure, including water utilities, roads and trails, and sanitation systems.

Vehicles, Maintenance, and Fuel - Captured in annual cost per FTE above (May 2017)

	Purchase price per vehicle	Fuel cost per vehicle per year	Maintenance cost per vehicle per year	Number of vehicles, per period						
				0	1-5	6-9	10-15	16-20	21-25	26-30
Total number of FTEs							5.05	7.05	8.05	10.05
New trucks purchased	$27,600	$1,200	$1,300				0	0	0	0
Old trucks retired							0	0	0	0
Total trucks							0	0	0	0
New 4WDs purchased	$46,000	$2,400	$2,000				0	0	0	0
Old 4WDs retired							0	0	0	0
Total 4WDs							0	0	0	0
New ATVs purchased	$7,900	$330	$390				0	0	0	0
Old ATVs retired							0	0	0	0
Total ATVs							0	0	0	0
New dump trucks purchased	$39,400	$530	$530				0	0	0	0
Old dump trucks retired							0	0	0	0
Total dump trucks							0	0	0	0
New tractors purchased	$52,600	$660	$1,310				0	0	0	0
Old tractors retired							0	0	0	0
Total tractors							0	0	0	0
New auger, mower, scraper for tractor	$52,600	$0	$130				0	0	0	0
Old auger, mower, scraper retired							0	0	0	0
Total auger, mower, scraper							0	0	0	0
New small tractors	$18,400	$390	$390				0	0	0	0
Old small tractors retired							0	0	0	0
Total small tractors							0	0	0	0
New light 4WD vehicles	$13,100	$330	$330				0	0	0	0
Old light 4WD vehicles retired							0	0	0	0
Total light 4WD vehicles							0	0	0	0
Total vehicle purchase cost per period							$0	$0	$0	$0
Total vehicle fuel and maintenance per year							$0	$0	$0	$0
Total vehicle fuel and maintenance per period							$0	$0	$0	$0

Assumptions:

Cost of 4WD truck includes cost of fire pumper, chain saw, sprayer, and small tool set for vehicle.

Equipment and Materials - Captured in annual cost per FTE above (May 2017)

	Number of new units bought per period						
	0		1-9	10-15	16-20	21-25	26-30
New preserve area managed per period			10,067	5,033	5,033	5,033	5,033
Total preserve area managed per period			10,067	15,100	20,133	25,167	30,200
Capital cost of equipment and materials per year				$0	$0	$0	$0
Operational cost of equipment and materials per year				$0	$0	$0	$0
Total capital cost per period				$0	$0	$0	$0
Total operational cost per period				$0	$0	$0	$0

Assumptions:

$0	Capital cost of equipment and materials per 1,000 preserve acres per year.
$0	Operational cost of equipment and materials per 1,000 preserve acres per year.

Capital costs include the capital component of fire fighting equipment/gear, small tools (pliers, wrenches, screwdrivers, etc.), glasses, gloves, hard hats, rain gear, irrigation supplies, cargo container, landscape plants and grass, oak trees, lumber, and truck hauling services.
Operational costs include the operational component of fire fighting equipment/gear, small tools (pliers, wrenches, screwdrivers, etc.), glasses, gloves, hard hats, rain gear, irrigation supplies, cargo container, landscape plants and grass, oak trees, lumber, and truck hauling services.
Operational costs also include portable radios, small pumps, piping, generator, saw, and demolition hammers.

Field Facilities - Captured in annual cost per FTE above (May 2017)

	0		1-9	10-15	16-20	21-25	26-30
Total preserve area managed per period			10,067	15,100	20,133	25,167	30,200
Total field offices/parking areas				-	-	-	-
New field offices/parking areas				-	-	-	-
Cost per period for offices/workshops				$0	$0	$0	$0

Assumptions:

10,000	Number of acres per workshop/parking area
$556,000	Cost to build a workshop/parking area

Note: Field facilities contain an area for equipment storage, a manager's office, a shared office, a locker room, and restrooms.
Based on experience to date, cost assumes donated portable building, with costs representing transportation, installation, utilities, etc.

Facilities Maintenance and Utilities - Captured in annual cost per FTE above (May 2017)

	Cost per facility per year	0	1-5	6-9	10-15	16-20	21-25	26-30
Total facilities per period		-		-	-	-	-	-
Maintenance cost per year	$9,900				$0	$0	$0	$0
Utilities cost per year	$5,300				$0	$0	$0	$0
Total cost per year					$0	$0	$0	$0
Total cost per period					$0	$0	$0	$0

Water Pumping - Captured in annual cost per FTE above (May 2017)

	0	1-5	6-9	10-15	16-20	21-25	26-30
Total preserve area managed				15,100	20,133	25,167	30,200
Total cost per year				$0	$0	$0	$0
Total cost per period				$0	$0	$0	$0

$0	Annual cost for pump and well drilling per 1,000 acres

Contractors - operational: for 2017 update assume included in preserve management staffing cost

	Contract value per 5-year period						
Contractor category	0	1-5	6-9	10-15	16-20	21-25	26-30
Total pond area managed				14	22	30	38
Total preserve area managed				15,100	20,133	25,167	30,200
Routine dirt road maintenance				$0	$0	$0	$0
Feral pig management				$0	$0	$0	$0
Pond maintenance				$0	$0	$0	$0
Weed management				$0	$0	$0	$0
Other maintenance services				$0	$0	$0	$0
Total per period				$0	$0	$0	$0

Assumptions:

$0	Cost for pond maintenance (dredging) per acre of pond every 5 years.
$0	Cost of dirt road maintenance per 100 miles of road per year.
100	miles of dirt roads on preserves
3	miles of dirt roads per 1,000 acres of preserve
$0	Cost of feral pig management per year per 1,000 acres managed
$0	Cost of weed management per 1,000 acres of preserve per year.
$0	Cost for other maintenance services per 1,000 acres of preserve per year.

Other maintenance services include mowing, grading, pest control, disking for fire breaks, fencing, alarms, janitorial services
(pond maintenance subtracted based on the yearly pond maintenance costs above)

Contractors - capital - Captured in annual cost per FTE above (May 2017)

	Contract value per period						
Contractor category	0	1-5	6-9	10-15	16-20	21-25	26-30
Total preserve area managed				15,100	20,133	25,167	30,200
Construction services				$0	$0	$0	$0

Assumptions:

$0	Cost for construction services per 1,000 preserve acres per year

Construction services includes roadway design, paving, fencing, grading, weather station, and boundary surveying services

Recreation Facilities and Maintenance

	0	1-5	6-9	10-15	16-20	21-25	26-30
Total facilities per period				-	-	-	-
Facilities cost - capital, per period				$0	$0	$0	$0
Facilities cost - maintenance and operations				$0	$0	$0	$0
Total facilities capital cost				$0	$0	$0	$0
Total cost per year				$0	$0	$0	$0
Total cost per period				$0	$0	$0	$0

Assumptions:
For this estimate, assumed costs covered by the East Bay Regional Park District.

$0	Cost per unit for recreation facilities.
$0	Annual maintenance and operations cost for recreation facilities

HCP/NCCP Monitoring, Research, and Adaptive Management for Maximum Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
Capital costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Vehicle purchase (included in overhead and contractor cost								
Capital Subtotal				**$0**	**$0**	**$0**	**$0**	
Operational Costs								
Program staff and overhead				$113,082	$357,435	$392,528	$392,528	
Technical staff and overhead				$0	$0	$0	$0	
Travel				$7,500	$6,250	$6,250	$6,250	
Field data collection (contractors)				$1,889,302	$2,176,122	$2,724,870	$3,160,471	
Directed research				$570,000	$475,000	$475,000	$475,000	
Adaptive management				$189,500	$189,500	$189,500	$189,500	
Operational Subtotal	**$0**	**$466,449**	**$430,860**	**$2,769,384**	**$3,204,307**	**$3,788,148**	**$4,223,749**	
Total	**$0**	**$466,449**	**$430,860**	**$2,769,384**	**$3,204,307**	**$3,788,148**	**$4,223,749**	**$14,882,897**

Program Staff and Overhead

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.025	0.025	0.025	0.025
Associate Planner and support	$112				0.05	0.30	0.33	0.33
Total FTEs					0.075	0.325	0.358	0.358
Total cost per year					$18,847	$71,487	$78,506	$78,506
Total cost per period					$113,082	$357,435	$392,528	$392,528

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Technical Staff and Overhead (shared with planning and restoration/creation)

		Number of FTEs						
Position	Hourly Cost per FTE with Overhead &	0	1-5	6-9	10-15	16-20	21-25	26-30
Senior scientist and support	$177				-	-	-	-
Technical support	$104				-	-	-	-
Total FTEs					-	-	-	-
Total cost per year					$0	$0	$0	$0
Cost per period					$0	$0	$0	$0

Assumptions:

Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

Travel (shared with planning and restoration/creation)

	Cost by Implementation Period (Years)						
	0	1-5	6-9	10-15	16-20	21-25	26-30
Total cost per period				$7,500	$6,250	$6,250	$6,250

Assumption:

$6,250	annual cost based on Conservancy 2017 budget
0.20	Proportion of travel costs that are used for monitoring (40% used for planning and included in the planning spreadsheet, and 40% used for restoration and included in the restoration spreadsheet).

Field Data Collection (Contractors)

On-going and Construction Monitoring

	0		1-9	10-15	16-20	21-25	26-30
Total acres of land added to reserve for management and monitoring each period			10,067	5,033	5,033	5,033	5,033
New acres created/restored per period			13	118	99	99	99
Number of restoration sites per period			9	27	23	23	23
Number of preserve covered activities requiring pre-construction surveys and construction monitoring per period (sites)			2	7	6	6	6

				Average area requiring monitoring **per year** (acres or sites) and average annual cost per period						
Monitoring type	Cost per unit	Unit		0	1-5	6-9	10-15	16-20	21-25	26-30
pre-construction surveys	$2,694	1	site				6	6	6	6
subtotal							$16,164	$16,164	$16,164	$16,164
construction monitoring	$5,957	1	site				1	1	1	1
subtotal							$5,957	$5,957	$5,957	$5,957
post-acquisition biological inventories	$18	1	acre				839	1,007	1,007	1,007
subtotal							$15,238	$18,286	$18,286	$18,286
monitoring: restoration, creation and enhancement sites	$10,776	10	acres				3	27	44	40
subtotal							$3,233	$29,095	$47,414	$43,104
status and trends monitoring: key covered species and ecosystems	$18	1	acre				15,100	20,133	25,167	30,200
subtotal							$274,292	$365,722	$457,153	$548,583
Total cost per year							$314,884	$435,224	$544,974	$632,094
Total cost per period							$1,889,302	$2,176,122	$2,724,870	$3,160,471

Assumptions:

Implementing entity monitoring staff will plan, coordinate, and report on the monitoring categories described below.

Contractors will conduct the field monitoring and data analysis.

Implementation monitoring will be conducted by the GIS/Database technician in conjunction with the other monitoring staff. The cost for the GIS/database technician's time will be covered by the program administration cost category. The cost for the monitoring staffs' time is assumed to be included in the other monitoring categories.

Preconstruction surveys are assumed to occur prior to construction of covered activites on the Preserve System. Preconstruction surveys are for the following species only: Townsend's big-eared bat, San Joaquin kit fox, golden eagle, burrowing owl, Swainson's hawk, and covered shrimp species. Surveys are assumed to require **one visit by two associate biologists** at **$160/hour** each. They are assumed to occur in the same 5-year period in which construction occurs. Assumes negative findings.

Construction monitoring is assumed to occur periodically during construction of covered activities and conservation measures. An average of **seven visits by one staff biologist** at **$100/hour** is assumed.

10%	% of times construction surveys are anticipated to be required for covered activities within the preserve system (it is anticipated that Implementing Entity will whenever possible avoid habitat and breeding season of covered species).
0.25	Ratio of area of other covered activities in preserves to area created/restored.

Planning, preconstruction surveys and construction monitoring for covered activities outside of preserves will be paid for by developers.

Post-acquisition inventories will build on planning surveys. Inventory will include mapping of noxious weeds.

Monitoring of restoration, creation, and enhancement sites is assumed to occur **4 times per year** for the 5-year period following the restoration activity and will require **two associate biologists at $160/hr for one 8-hour day each visit**. It will include species-response monitoring. It is assumed to begin in the 5-year period after the creation/restoration/enhancement takes place.

Status and trends monitoring is assumed to occur after preserve land is purchased through year 30. Status and trend monitoring will build on planning surveys and post-acquisition inventories, when appropriate.

Directed Research

	0	1-5	6-9	10-15	16-20	21-25	26-30
Average cost per year to fund directed research				$95,000	$95,000	$95,000	$95,000
Total cost per period				$570,000	$475,000	$475,000	$475,000

Adaptive Management

	0	1-5	6-9	10-15	16-20	21-25	26-30
Average Independent Conservation Assessment Team cost per period				$31,500	$31,500	$31,500	$31,500
Average Science Advisors cost per period				$158,000	$158,000	$158,000	$158,000
Total cost per period				$189,500	$189,500	$189,500	$189,500

Assumptions:
Adaptive management experiments are covered under the monitoring staff and directed research categories.
It is assumed that the Independent Conservation Assessment Team will meet once every 4 years and have:

5	members
$6,300	stipend per member per 5-year period

It is assumed that the Science Advisors will contain:

10	members
$15,800	stipend per member per 5-year period

Field monitoring and analysis contractors

	Associate Biologist	Staff Biologist		
Base cost per hour	$160	$100	$ per hour	
Direct Expenses	$5	$3	3%	of labor cost
Travel	$27	$27	$ per day	
assuming	50	50	miles	
and	$0.54	$0.54	$ per mile	
Hours per day	8	8	hours per day	
Total cost per hour including expenses and amortized per diem and travel	$168.38	$106.38	$ per hour	

Assumptions:
Bay Area billing rate, assuming all work will be conducted from a local office (no per diem needed).

HCP/NCCP Environmental Compliance for Maximum Urban Development Area
2017 Update
(2016 dollars)

	Cost by Implementation Period (Years)							
Operational Costs	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Program staff and overhead				$226,164	$188,470	$188,470	$0	
Legal assistance				$210,000	$175,000	$0	$0	
NEPA/CEQA				$493,300	$493,300	$493,300	$0	
CWA 404				$0	$0	$0	$0	
CWA 401				$24,700	$24,700	$24,700	$0	
CDFG 1602				$20,500	$20,500	$20,500	$0	
NHPA				$53,200	$53,200	$53,200	$0	
Other	**$0**	**$632,307**	**$138,246**	$36,900	$36,900	$36,900	$0	
Total	**$0**	**$632,307**	**$138,246**	**$1,064,764**	**$992,070**	**$817,070**	**$0**	**$3,644,457**

Program Staff and Overhead

	Hourly Cost per FTE with	Number of FTEs						
Position	Overhead & Support	0	1-5	6-9	10-15	16-20	21-25	26-30
Principal Planner and support	$177				0.05	0.05	0.05	-
Associate Planner and support	$112				0.10	0.10	0.10	-
	Total FTEs				0.15	0.15	0.15	-
	Total cost per year				$37,694	$37,694	$37,694	$0
	Total cost per period				$226,164	$188,470	$188,470	$0

Note: Hourly cost factor includes staff salary and benefits, salaries and benefits of administrative support staff (secretaries, clerks, IT staff, etc.) and associated overhead, including space and utility costs, office furniture, equipment, and supplies.

1,880 hours per year

Legal Assistance	Cost by Implementation Period (Years)							
	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Cost per period				$210,000	$175,000	$0	$0	$385,000

Assumptions:

$35,000 Annual cost for legal assistance with wetland permitting, years 10 - 20

Number of Projects Requiring Environmental Compliance

		Number							
Project size	Size Range	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Small/simple	up to 10 acres or up to 0.1 stream miles				4	4	4	-	20
Medium/more complex	10.1-50 acres or 0.1-0.5 stream miles				4	4	4	-	20
Large/most complex	over 50 acres or 0.5 stream miles				2	2	2	-	10
	Total projects				10	10	10	-	30

Assumptions:

Of the total of approximately 50 projects that would require environmental compliance, 1/5 would require compliance in each 5-year period between years 1 and 25.

East Contra Costa County HCP/NCCP Cost Tables

Environmental Compliance Cost per Project Size and Compliance Category (2016 dollars)

Project size	Size Range	Estimate Project Cost within DFG jurisdiction		Project Impacts to Wetlands for CWA 401		Compliance Category					
				Minimum	Maximum	CEQA	CWA 404	CWA 401	CDFG 1602	NHPA	Other
Small/simple	up to 10 acres or up to 0.1 stream miles	$ 2,000	$ 25,000	0.001	0.01	$6,490	$0	$1,800	$983	$3,245	$3,077
Medium/more complex	10.1-50 acres or 0.1-0.5 stream miles	$ 25,001	$ 100,000	0.0121	0.07	$51,923	$0	$2,340	$2,109	$4,543	$3,692
Large/most complex	over 50 acres or 0.5 stream miles	$ 100,001	$500,000 or more	0.073	0.30	$129,809	$0	$4,063	$4,048	$11,034	$4,923

Assumptions:

Assumed wetland impact determined by AECOM based experience with typical projects that would be expected to be implemented by the Conservancy. For example wetland restoration/creation projects, stream restoration projects, adaptive management measures for existing wetland features and facilities improvements. In general, it is expected that impacts to wetlands and streams would be avoided if at all possible. Of the stream length indicated, assumed only 10% of that length would be impacted and an average stream width of 10 feet.

For NEPA/CEQA, 401/404 and 1602 compliance, varying costs have more to do with project complexity than with project size.
Clean Water Act 401 and 1602 permits will be done on a per-project basis
Cultural compliance permits will be done on a per-project basis.

Contra Costa Conservancy staff will prepare permit applications and notification for the 401, 404 and 1600 applications, thereby resulting in no consultant cost for permit preparation. This table also assumes that the permits for Water Quality Certification (CWA 401) and Streambed Alteration Agreement (DFG 1602) will not be secured under programmatic or Master permit processes.

Permitted projects would be completed within the time limit allotted for the permits; no extensions or re-application would be required.
The "other" compliance category could include county grading permits, road encroachment permits, or other local approvals.

NEPA/CEQA
Depending on the level of detail that is provided for specific projects, they may or may not be able to be covered under the HCP EIR/EIS.
For those without sufficient detail, additional environmental documentation may need to be prepared.
It is likely that the majority of those would be in the form of mitigated negative declarations.
Because it is difficult to provide a cost estimate for a project without knowing details such as location, size, etc., the following are some rough numbers based on level of controversy:
Small scale non-controversial projects = Cat Excl/Cat Exemp
Medium scale more controversial projects = IS MND/EA FONSI
Larger scale more controversial projects = EIR/EIS
All land acquisitions would be a categorical exemption under CEQA as well as under NEPA, when NEPA applies.

401/404
The cost of conducting wetland delineations is not included under CWA 404/401 compliance; it is expected that delineation would be covered under land acquisition costs.
Each project implemented under the HCP will qualify for compliance under the USACE 404 regional permit program for the inventory area; there is no fee for 404 permit applications
Tasks associated with Section 402 compliance are not included in this cost estimate.
CWA 401 fee cost estimate is based on impacts to jurisdictional waters of the state rather than project size. Fee is an average based on the minimum and maximum expected impacts. State Water Resources Control Board Fiscal Year 2016-2017 Water Quality Certification Dredge and Fill Application Fee Calculator (Effective Date 11/16/2016) Available:
http://www.waterboards.ca.gov/water_issues/programs/cwa401/

NHPA
Archaeological surveys can be conducted at an intensive level at a rate of 40 acres per person per day.
No more than one cultural resource will be identified per 40 acres or part thereof.
This scope of work and cost estimate does not include tasks necessary for significance evaluations and resolution of adverse effects.

CDFG 1602
DFG 1602 costs are estimated based on the assumed cost of project activities within DFW jurisdiction per Fish and Game Code Sections 1600-1616, and the fee schedule corresponding to the project costs. Average cost based on mean of minimum and maximum fee amounts for standard agreements.
California Department of Fish and Wildlife Lake and Streambed Alteration Agreements and Fees, Effective October 1, 2016. Available:
https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=130459&inline

Remedial Measures for Maximum Urban Development Area

2017 Update

(2016 dollars)

	Implementation Period (Years)							
Capital costs	0	1-5	6-9	10-15	16-20	21-25	26-30	**Total**
Remedial measures	$0	$0	$0	$329,103	$200,669	$921,333	$2,194,046	$3,645,151
Total	**$0**	**$0**	**$0**	**$329,103**	**$200,669**	**$921,333**	**$2,194,046**	**$3,645,151**

Note: Actual costs are included in habitat restoration/creation cost category

Remedial Measures

	0	1-5	6-9	10-15	16-20	21-25	26-30
Cost of created/restored habitat per period		$2,439,332	$1,470,246	$8,527,611	$7,106,343	$7,106,343	$7,106,343
Cost for remedial measures for created/restored habitat per period				$243,933	$147,025	$852,761	$2,131,903
Area of new preserve not including created/restored habitat per period	-	7,682	3,292	5,371	4,476	4,476	4,476
Cost for remedial measures for preserves per period				$55,170	$23,644	$38,572	$32,143
Cost for other remedial measures per period				$30,000	$30,000	$30,000	$30,000
Total cost per period				$329,103	$200,669	$921,333	$2,194,046

Assumptions:	
2%	Percent of annual preserve management and maintenance cost assumed to be needed for preserve remedial actions.
10%	Percent of created/restored habitat for which remedial measures will be required.
$359	Cost per acre for preserve management and maintenance in years 26-30.
70%	Percent of land acquisition in years 1 - 9 occurring in years 1 - 5

Remedial actions are assumed to occur in the second 5-year period after habitat is created/restored or preserve land is purchased, with the exception of remedial actions for habitat created/restored in years 21-30. The cost for these remedial actions is included in years 26-30 so that it can be included in this cost estimate.

The remedial cost for preserve lands is assumed to be a percentage of the cost per acre for preserve management and maintenance in years 26-30, and is assumed to be needed once, in the second 5-year period after the preserve land is purchased.

The cost for other remedial measures includes the costs for restoration or maintenance of preserve areas because of other changed circumstances, such as wildfire.

Contingency Fund for Maximum Urban Development Area
2017 Update
(2016 dollars)

	0	1-5	6-9	10-15	16-20	21-25	26-30	Total
Total cost of program excluding land acquisition and habitat restoration capital costs	$0	$0	$0	$23,755,424	$22,572,053	$24,220,473	$27,275,781	$97,823,731
Contingency	**$0**	**$0**	**$0**	**$1,187,771**	**$1,128,603**	**$1,211,024**	**$1,363,789**	**$4,891,187**

Assumptions:

5.0% Percent of total program funding needed for contingency

Post-Permit Costs for Initial Urban Development Area

2017 Update

(2016 dollars)

Post-Permit Costs

Cost Category	Annual Costs	Assumptions
Total Cost		
Program Administration	$428,011	
Land Acquisition	$0	
Planning and Design	$0	
Habitat Restoration/Creation	$0	
Environmental Compliance	$0	
Preserve Management and Maintenance	$2,168,847	
Monitoring, Research, and Adaptive Management	$422,375	
Remedial Measures	$0	
Contingency	$0	
Total	**$3,019,233**	

Capital Costs	Annual Costs	Assumptions
Program Administration	$0	Included in staff and overhead costs
Land Acquisition: acquisition and site improvements	$0	Acquisition complete during permit term
Planning and Design	$0	Planning and design work complete during permit term
Habitat Restoration/Creation	$0	Restoration/creation projects constructed during permit term
Preserve Management and Maintenance	$0	Captured in annual operating costs
Monitoring, Research, and Adaptive Management	$0	Captured in annual operating costs
Remedial Measures	$0	Not required, post permit
Total	**$0**	

Operational Costs	Annual Costs	Assumptions
Program Administration	$428,011	Reduced staffing and no legal and finanical contractor costs.
Land Acquisition: due diligence, transaction costs	$0	Acquisition complete during permit term
Planning and Design	$0	Planning and design work complete during permit term
Habitat Restoration/Creation	$0	Restoration/creation projects constructed during permit term
Environmental Compliance	$0	Not required, post permit
Preserve Management and Maintenance	$2,168,847	Assume 100 percent of annual average costs in years 26 - 30
Monitoring, Research, and Adaptive Management	$422,375	Assume 50 percent of annual average costs in years 26 - 30
Contingency	$0	Not required, post permit
Total	**$3,019,233**	

Total preserve acres	**30,200**
Annual average cost per acre managed	**$100**
Percent of average annual cost years 26 - 30	**19%**

APPENDIX E: ENDOWMENT MODEL

Tables E.1 and **E.2** present the endowment model results for the initial and maximum UDA, respectively.

Table E.1: Endowment Fund - Initial Urban Development Area (2016 Dollars)

Year	2017	2018	2019	2020	2021	2022	2023	2024
	10	*11*	*12*	*13*	*14*	*15*	*16*	*17*
Opening Fund Balance[1]	$2,202,896	$4,497,108	$6,865,881	$9,311,640	$11,836,886	$14,444,203	$17,136,257	$19,915,803
Revenue	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078
Investment Earnings[2]	107,134	181,696	258,681	338,168	420,239	504,977	592,468	682,804
Total Revenues	$2,294,212	$2,368,774	$2,445,759	$2,525,246	$2,607,317	$2,692,055	$2,779,546	$2,869,882
Net Post-Permit Costs[3]	-	-	-	-	-	-	-	-
Net Cash Flow	$2,294,212	$2,368,774	$2,445,759	$2,525,246	$2,607,317	$2,692,055	$2,779,546	$2,869,882
Closing Fund Balance	$4,497,108	$6,865,881	$9,311,640	$11,836,886	$14,444,203	$17,136,257	$19,915,803	$22,785,685

Year	2026	2027	2028	2029	2030	2031	2032	2033
	18	*19*	*20*	*21*	*22*	*23*	*24*	*25*
Opening Fund Balance[1]	$22,785,685	$25,748,838	$28,808,292	$31,967,180	$35,228,731	$38,596,283	$42,073,279	$45,663,279
Revenue	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078
Investment Earnings[2]	776,075	872,377	971,810	1,074,473	1,180,474	1,289,919	1,402,922	1,519,597
Total Revenues	$2,963,153	$3,059,455	$3,158,888	$3,261,551	$3,367,552	$3,476,997	$3,590,000	$3,706,675
Net Post-Permit Costs[3]	-	-	-	-	-	-	-	-
Net Cash Flow	$2,963,153	$3,059,455	$3,158,888	$3,261,551	$3,367,552	$3,476,997	$3,590,000	$3,706,675
Closing Fund Balance	$25,748,838	$28,808,292	$31,967,180	$35,228,731	$38,596,283	$42,073,279	$45,663,279	$49,369,954

[1] Opening balance is fair share of total revenue contribution associated with prior development (Years 0-9).

[2] Interest earnings estimated based (Opening Fund Balance + (Annual Fee Revenue / 2)) x (Annual Interest Rate). Annual interest rate equals 3.25% real rate of return (net of inflation and administrative fees) based on estimates by National Fish and Wildlife Foundation for similar endowments.

[3] Annual post-permit costs are net of ongoing revenue from leases equal to 50 percent of average annual amount for years 5-9.

Sources: Appendix C (Post Permit Costs tab); National Fish and Wildlife Foundation.

Table E.1: Endowment Fund Cash Flow - Initial Urban Development Area (2016 Dollars) (continued)

Year	2033 26	2034 27	2035 28	2036 29	2037 30	Ongoing *31+*	Total Year 1 - 30
Opening Fund Balance	$49,369,954	$53,197,095	$57,148,619	$61,228,567	$65,441,113	$69,790,566	$2,202,896
Fee Revenue	2,187,078	2,187,078	2,187,078	2,187,078	2,187,078	-	45,928,632
Investment Earnings[2]	1,640,064	1,764,446	1,892,870	2,025,468	2,162,376	2,268,193	21,659,038
Total Revenues	$3,827,142	$3,951,524	$4,079,948	$4,212,546	$4,349,454	$2,268,193	$-
Net Post-Permit Costs[2]	-	-	-	-	-	2,268,193	-
Net Cash Flow	$3,827,142	$3,951,524	$4,079,948	$4,212,546	$4,349,454	$-	$-
Closing Fund Balance	$53,197,095	$57,148,619	$61,228,567	$65,441,113	$69,790,566	$69,790,566	$69,790,566

[1] Opening balance is fair share of total revenue contribution associated with prior development (Years 0-9).

[2] Interest earnings estimated based (Opening Fund Balance + (Annual Fee Revenue / 2)) x (Annual Interest Rate). Annual interest rate equals 3.25% real rate of return (net of inflation and administrative fees) based on estimates by National Fish and Wildlife Foundation for similar endowments.

[3] Annual post-permit costs are net of ongoing revenue from leases equal to 50 percent of average annual amount for years 5-9.

Sources: Appendix C (Post Permit Costs tab); National Fish and Wildlife Foundation.

Table E.2: Endowment Fund - Maximum Urban Development Area (2016 Dollars)

Year	2017	2018	2019	2020	2021	2022	2023	2024
	10	*11*	*12*	*13*	*14*	*15*	*16*	*17*
Opening Fund Balance[1]	$1,748,669	$4,577,926	$7,499,134	$10,515,281	$13,629,453	$16,844,836	$20,164,719	$23,592,498
Revenue	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094
Investment Earnings[2]	101,163	193,114	288,053	386,078	487,289	591,789	699,685	811,088
Total Revenues	$2,829,257	$2,921,208	$3,016,147	$3,114,172	$3,215,383	$3,319,883	$3,427,779	$3,539,182
Net Post-Permit Costs[3]	-	-	-	-	-	-	-	-
Net Cash Flow	$2,829,257	$2,921,208	$3,016,147	$3,114,172	$3,215,383	$3,319,883	$3,427,779	$3,539,182
Closing Fund Balance	$4,577,926	$7,499,134	$10,515,281	$13,629,453	$16,844,836	$20,164,719	$23,592,498	$27,131,680
Year	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
	18	*19*	*20*	*21*	*22*	*23*	*24*	*25*
Opening Fund Balance[1]	$27,131,680	$30,785,885	$34,558,852	$38,454,439	$42,476,634	$46,629,550	$50,917,436	$55,344,678
Revenue	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094
Investment Earnings[2]	926,111	1,044,873	1,167,494	1,294,101	1,424,822	1,559,792	1,699,148	1,843,034
Total Revenues	$3,654,205	$3,772,967	$3,895,588	$4,022,195	$4,152,916	$4,287,886	$4,427,242	$4,571,128
Net Post-Permit Costs[3]	-	-	-	-	-	-	-	-
Net Cash Flow	$3,654,205	$3,772,967	$3,895,588	$4,022,195	$4,152,916	$4,287,886	$4,427,242	$4,571,128
Closing Fund Balance	$30,785,885	$34,558,852	$38,454,439	$42,476,634	$46,629,550	$50,917,436	$55,344,678	$59,915,806

[1] Opening balance is fair share of total revenue contribution associated with prior development (Years 0-9).

[2] Interest earnings estimated based (Opening Fund Balance + (Annual Fee Revenue / 2)) x (Annual Interest Rate). Annual interest rate equals 3.25% real rate of return (net of inflation and administrative fees) based on estimates by National Fish and Wildlife Foundation for similar endowments.

[3] Annual post-permit costs are net of ongoing revenue from leases equal to 50 percent of average annual amount for years 5-9.

Sources: Appendix D (Post Permit Costs tab); National Fish and Wildlife Foundation.

Table E.2: Endowment Fund Cash Flow - Maximum Urban Development Area (2016 Dollars) (continued)

Year	2033	2034	2035	2036	2037	Ongoing	Total
	26	27	28	29	30	*31+*	Year 1 - 30
Opening Fund Balance[1]	$59,915,806	$64,635,495	$69,508,574	$74,540,028	$79,735,004	$85,098,817	$1,748,669
Revenue	2,728,094	2,728,094	2,728,094	2,728,094	2,728,094	-	57,289,973
Investment Earnings[2]	1,991,595	2,144,985	2,303,360	2,466,882	2,635,719	2,765,712	26,060,175
Total Revenues	$4,719,689	$4,873,079	$5,031,454	$5,194,976	$5,363,813	$2,765,712	$-
Net Post-Permit Costs[3]	-	-	-	-	-	2,765,712	-
Net Cash Flow	$4,719,689	$4,873,079	$5,031,454	$5,194,976	$5,363,813	$0	$-
Closing Fund Balance	$64,635,495	$69,508,574	$74,540,028	$79,735,004	$85,098,817	$85,098,817	$85,098,817

[1] Opening balance is fair share of total revenue contribution associated with prior development (Years 0-9).

[2] Interest earnings estimated based (Opening Fund Balance + (Annual Fee Revenue / 2)) x (Annual Interest Rate). Annual interest rate equals 3.25% real rate of return (net of inflation and administrative fees) based on estimates by National Fish and Wildlife Foundation for similar endowments.

[3] Annual post-permit costs are net of ongoing revenue from leases equal to 50 percent of average annual amount for years 5-9.

Sources: Appendix D (Post Permit Costs tab); National Fish and Wildlife Foundation.

APPENDIX F: ACTUAL REVENUE THROUGH 2016

The following tables provide detail for revenue received in Year 0-9 (2007 through 2016) of the Plan.

Table F.1 provides the index used to inflate actual costs and revenues from prior years to 2016 dollars. The index is based on changes in the Conservancy's mitigation fee schedule, thus replicating the same index used to reflect inflation in Plan costs. The Conservancy's fees are adjusted annually based on published price indices and periodically based on prior audits (the 2011 and 2013 audit).[26]

Table F.1: Inflation Index

Plan Year	Fee Adopted in Year…	Uses Inflation Index Data for Year…	Is Applied to Fiscal Data For Year…	Represents Current Dollars For Year…	Zone 1 Fee	Inflation Index	
9	2017	2016	2016	$2016	$13,491.41	1.0000	2017 Audit
8	2016	2015	2015	$2015	12,788.47	0.9479	
7	2015	2014	2014	$2014	11,877.42	0.8804	
6	2014	2013	2013	$2013	11,146.99	0.8262	
5	2013	2012	2012	$2012	10,076.00	0.7468	2013 Audit
4	2012	2011	2011	$2011	10,584.32	0.7845	
3	2011	2010	2010	$2010	10,662.15	0.7903	
2	2010	2009	2009	$2009	10,558.09	0.7826	
1	2009	2008	2008	$2008	10,731.11	0.7954	
0	2008	2007	2007	$2007	12,077.65	0.8952	
0	2007	2006	2006	$2006	12,456.88	0.9233	
0	2006	2005	2005	$2005	11,919.00	0.8835	2006 Plan

Note: Fees for all three UDA zones increase at the same rate. The Zone 1 fee is used in this table. Fees reflect those charged to Participating Special Entities by the Conservancy, and include both annual inflation adjustments and periodic adjustments based on prior audits, as required by the 2006 Plan.

Source: ECCC Habitat Conservancy.

Table F.2 shows actual revenue to date by source in current dollars (the year received) and inflated to 2016 dollars.

[26] See the 2006 Plan, Chapter 9, pp. 30-31 and Table 9-7.

Table F.2: Revenue Summary 2007-2016 (Years 0-9)

Year	Thru 2012	2013	2014	2015	2016	Total	Annual Avg.
Plan Year	0-5	6	7	8	9	0-9	6-9
			Current Dollars				
Mitigation Fees							
Development Fee	$1,335,717	$1,703,067	$514,563	$975,432	$794,365	$5,323,144	$996,857
Wetland Mitigation Fee	383,296	4,087	207,226	17,564	67,651	679,824	74,132
Rural Road Fee	1,065,044	122,792	70,351	18,529	35,818	1,312,534	61,873
Temporary Impact Fee	830,779	296,551	432,631	59,577	84,252	1,703,790	218,253
Subtotal	$3,614,836	$2,126,497	$1,224,771	$1,071,102	$982,086	$9,019,292	$1,351,114
Other Fees & Exactions							
Administrative Charges	182,004	62,452	35,448	25,816	8,658	314,378	33,094
Payments For Non-covered Activities	3,148,462	-	-	-	-	3,148,462	-
Other Development Exactions	812,310	146,502	38,298	141,709	20,160	1,158,979	86,667
Subtotal	$4,142,776	$208,954	$73,746	$167,525	$28,818	$4,621,819	$119,761
Local, State & Federal Funds							
State/Federal Funds	30,584,482	1,444,339	14,947,687	1,809,042	7,363,644	56,149,194	6,391,178
Local Land Capital Funds	15,602,742	18,500	5,098,850	224,250	789,700	21,734,042	1,532,825
Local Operating Funds	1,565,808	614,805	534,131	574,651	590,776	3,880,171	578,591
Subtotal	$47,753,032	$2,077,644	$20,580,668	$2,607,943	$8,744,120	$81,763,407	$8,502,594
Other Funds							
Interest Earnings	182,210	2,937	6,441	12,912	19,905	224,405	10,549
Miscellaneous	13,401	-	-	-	243	13,644	61
Subtotal	$195,611	$2,937	$6,441	$12,912	$20,148	$238,049	$10,610
Total	**$55,706,255**	**$4,416,032**	**$21,885,626**	**$3,859,482**	**$9,775,172**	**$95,642,567**	**$9,984,078**

Table F.2: Revenue Summary 2007-2016 (Years 0-9) (continued)

Year	Thru 2012	2013	2014	2015	2016	Total	Annual Avg.
Plan Year	0-5	6	7	8	9	0-9	6-9
Development Fee Index	*varies*	*0.7879*	*0.8716*	*0.9288*	*1.0000*		
			Constant Dollars (2016 $)				
Mitigation Fees							
Development Fee	$1,597,438	2,161,527	590,366	1,050,207	794,365	$6,193,903	$1,149,116
Wetland Mitigation Fee	462,897	5,187	237,754	18,910	67,651	792,399	82,376
Rural Road Fee	1,287,188	155,847	80,715	19,949	35,818	1,579,517	73,082
Temporary Impact Fee	991,153	376,382	496,364	64,144	84,252	2,012,295	255,286
Subtotal	$4,338,676	$2,698,943	$1,405,199	$1,153,210	$982,086	$10,578,114	$1,559,860
Other Fees & Exactions							
Administrative Charges	218,645	79,264	40,670	27,795	8,658	375,032	39,097
Payments For Non-Covered Activities	3,358,635	-	-	-	-	3,358,635	-
Other Development Exactions	978,158	185,940	43,940	152,572	20,160	1,380,770	100,653
Subtotal	$4,555,438	$265,204	$84,610	$180,367	$28,818	$5,114,437	$139,750
Local, State & Federal Funds							
State/Federal Funds	36,605,167	1,833,150	17,149,710	1,947,720	7,363,644	64,899,391	7,073,556
Local Land Capital Funds	18,384,051	23,480	5,849,989	241,441	789,700	25,288,661	1,726,153
Local Operating Funds	1,845,638	780,308	612,817	618,703	590,776	4,448,242	650,651
Subtotal	$56,834,856	$2,636,938	$23,612,516	$2,807,864	$8,744,120	$94,636,294	$9,450,360
Other Funds							
Interest Earnings	191,774	3,728	7,390	13,902	19,905	236,699	11,231
Miscellaneous	13,855	-	-	-	243	14,098	61
Subtotal	$205,629	$3,728	$7,390	$13,902	$20,148	$250,797	$11,292
Total	**$65,934,599**	**$5,604,813**	**$25,109,715**	**$4,155,343**	**$9,775,172**	**$110,579,642**	**$11,161,261**

Sources: ECCC Habitat Conservancy, Table F.1.