Appendix B

El Dorado County Oak Resources In-Lieu Fees Nexus Study

El Dorado County Oak Resources In-Lieu Fees Nexus Study

PUBLIC REVIEW DRAFT

Prepared by New Economics & Advisory

Updated June 21, 2016

List of Acronyms

ARC	American River Conservancy
CAL FIRE	California Department of Forestry and Fire Protection
CE	Conservation Easement
CEQA	California Environmental Quality Act
CIP	Capital Improvement Project
CPUC	California Public Utilities Commission
FRAP	Fire and Resource Assessment Program
GIS	Geographic Information Systems
HRS	Habitat Restoration Sciences, Inc.
Initial M&M	Initial Management and Monitoring
INRMP	Integrated Natural Resources Management Plan
IOT	Individual Oak Tree
LCO	Land Conservation Organization
Long-Term M&M	Long-Term Management and Monitoring
LOS	Level of Service
NACUBO	National Association of College and University Business Officers
ORMP	Oak Resources Management Plan
ORTR	Oak Resources Technical Report
OWA	Oak Woodland Area
OWMP	Oak Woodland Management Plan
PCA	Priority Conservation Area
PCCP	Placer County Conservation Plan
PLT	Placer Land Trust
PRC	California Public Resources Code
SACOG	Sacramento Area Council of Governments
SF	Sempervirens Fund
SFC	Sierra Foothill Conservancy
SRAS	State Responsibility Areas
SRL	Save the Redwoods League
STF	Sacramento Tree Foundation
SVC	Sacramento Valley Conservancy
TAZ	Transportation Area Zones

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1. Introduction

This Oak Resources Nexus Study (Nexus Study) has been prepared for El Dorado County (County) pursuant to the "Mitigation Fee Act" found in California Government Code 66000. The purpose of this Nexus Study is to establish the legal and policy basis to allow the County to offer two in-lieu fee options for new development within the County to mitigate impacts to these Oak Resources: Oak Woodland Areas (OWAs) and Individual Oak Trees (IOTs), (which include Heritage Oak Trees and Native Oak Trees). The In-Lieu Fees would provide one mitigation option for projects that impact Oak Resources; other mitigation options include replacement tree planting on- or off-site or conserving existing oak woodlands off-site, as described in the draft 2016 Oak Resources Management Plan (ORMP).

Oak Resources Conservation Strategy Background

The County's 2004 General Plan Environmental Impact Report identified substantial fragmentation and/or elimination of Oak Resources by residential and commercial development that would occur as a result of new development in El Dorado County[1]. The projected growth in the County increases the potential for significant oak woodland loss.

In 2008 the County prepared an Oak Woodland Management Plan (OWMP), which outlined the County's strategy for conservation of oak woodland areas. The in-lieu oak woodland mitigation fee was intended to be consistent with a future conservation fund to be established under the Integrated Natural Resources Management Plan (INRMP). The fee was established through an economic analysis that was presented to the Board in April 2008. However, a lawsuit challenging the County's approval of the OWMP and its implementing ordinance (Oak Tree Replacement Ordinance) ultimately resulted in the Board's rescission of the OWMP and its implementing ordinance in September 2012. At the same time, the County decided to update biological resources policies in the General Plan. As part of that update, a draft ORMP based on Board direction has been prepared, including a mitigation fee program for impacts to oak woodlands and individual oak trees. This 2016 Nexus Study reflects the parameters described in the draft ORMP prepared by Dudek in June 2016 and the draft Oak Resources Conservation Ordinance and has been prepared to support the in-lieu fee mitigation program component of the draft ORMP and its implementing ordinance.

The draft ORMP and its implementing ordinance also define mitigation requirements and options for impacts to Oak Resources, which include OWAs and IOTs. IOTs include individual Native Oak Trees and Heritage Trees.

[1] As cited in the draft Oak Resources Management Plan prepared by Dudek, June 2016, page 1.

Overview of 2008 In-Lieu Mitigation Fee

An in-lieu mitigation fee was originally developed concurrently with the 2008 OWMP. Calculation of the 2008 in-lieu fee utilized a Level of Service (LOS) methodology, as opposed to a Capital Improvement Program (CIP) methodology, as the basis for its technical approach. While a CIP approach relies on a fixed set of improvements—in this case a known number of acres that can be acquired for a known cost— the LOS approach relies on a service target or standard—in this case a mitigation ratio and mitigation cost per acre. The 2008 analysis relied on the OWMP standard of conserving existing oak canopy of equal or greater biological value as those lost at a conservation mitigation ratio of 2:1[2].

The 2008 analysis developed a per-acre cost for three broad oak woodland conservation activities: acquisition, management, and monitoring. The study estimated cost assumptions for each activity based on a variety of sources, and then applied these assumptions to a hypothetical conservation easement of approximately 125 acres in size. This parcel size was selected because it reflected the average parcel size within Priority Conservation Areas (PCAs)[3].

The OWMP in-lieu fee study established a total cost of $4,700 per acre of canopy impact to fund the acquisition, management, and ongoing monitoring of oak woodland. Based on the 2:1 mitigation ratio, the 2008 OWMP In-Lieu Fee was established at a rate of $9,400 per acre. **Figure 1.1** provides a summary of the cost and fee per acre.

[2] El Dorado County Oak Woodland Management Plan, April 2, 2008, page 9.

[3] Areas where oak woodland conservation efforts may be focused. The draft ORMP contains a map showing the location of PCAs.

1.1 2008 OWMP In-Lieu Mitigation Fee Rate
2008$

Activity	Amount Per Acre
Cost Components	
Acquisition [1]	$2,300
Management [2]	$1,200
Monitoring [3]	$1,200
Total Cost Per Acre	$4,700
Mitigation Ratio For In-Lieu Fee	2:1
Proposed Fee per Acre	**$9,400**

Prepared by New Economics & Advisory, June 2016.

[1] Conservation easement on rural land acquisition of 125 acres, which is the average parcel size within the PCAs. Acquisition costs include the easement land value (approximately $1,800, or 40% discount value) and conveyance costs.

[2] Includes biological survey/ baseline documentation, weed control, and fuels treatment.

[3] Includes endowment for on-going monitoring.

Source: El Dorado County Oak Woodland Management Plan, April 2, 2008, Page 10, Table 4.

The 2008 analysis did not include an in-lieu fee for individual Heritage Trees or Oak Trees.

As described previously, the 2008 OWMP In-Lieu Fee was only in effect for a limited time because the OWMP itself was the subject of litigation. The County has prepared a draft ORMP reflecting a number of policy changes directed by the County Board of Supervisors. This Nexus Study has been prepared to update the assumptions and costs in support of the in-lieu fee mitigation component of the draft ORMP.

New Proposed Fee: Purpose, Approach, and Amount

Purpose of the Nexus Study and Fee

The purpose of the 2016 El Dorado County Oak Resources Nexus Study is to determine in-lieu fee rates for mitigating impacts to eligible Oak Resources, including OWAs, and IOTs.

This Nexus Study proposes a fee designed to pay the full cost of the mitigation for development impacts, including Acquisition, Initial Management & Monitoring (Initial M&M), Long-Term Management & Monitoring (Long-Term M&M), and associated Administrative functions.

Nexus Study Approach

Typically one of two methodologies is utilized to prepare a nexus study: a CIP approach and a LOS approach. The CIP approach relies on a known amount of improvements that must be funded by the fee program and a known amount of new development that will participate in the fee program. The CIP approach is appropriate when the improvements and scale of new development is known. The LOS approach relies on an established level of service or performance measure (such as a required amount of library space per resident) and is used in cases where the amount of development is not certain. For this study, the levels of service evaluated are the mitigation ratios identified in the ORMP.

This 2016 Nexus Study is an update to the 2008 in-lieu mitigation fee study and continues to utilize a LOS methodology. LOS standards for Oak Resources mitigation, developed in the draft ORMP, are summarized in **Figure 1.2**. This 2016 Nexus Study also notes that the LOS approach remains preferable because the amount of OWAs and IOTs ultimately conserved by one or more Oak Resources Land Conservation Organization(s) (LCOs) with funds from Oak Resources In-Lieu Fees cannot be reasonably predicted at this time, for the following reasons:

- Impacts to Individual Oak Trees could occur as a result of improvements constructed on property that is already developed, unrelated to new development proposals; the County has no projections for the potential scale at which improvements to existing developed property may occur.
- The amount of impacts to Oak Resources as a result of new development is uncertain because it is not known to what extent land-use plans would avoid and/or lessen impacts to existing Oak Resources.
- For new projects that do impact Oak Resources, the mitigation requirement will depend on the percentage of woodland impact.
- The draft ORMP provides three options to mitigate impacts to Oak Resources. Developers can choose one of the three options to meet their mitigation requirements. The Oak Resources In-Lieu Fees represent one of the three options. It is not known in what proportion each option will be selected; therefore it is not known how much land would be conserved under the in-lieu fees.

Certain development activities are exempted from mitigation requirements, including small parcels that cannot be further subdivided, agricultural activities, creating defensible space/undertaking fire safe measures, qualified affordable housing projects, and certain public roads and public utility projects. **Section 7** of this Nexus Study describes these exemptions in more detail.

1.2 *Standards for Oak Woodland Resources*
2016 Draft ORMP

Standard	Oak Woodland Areas (OWAs)	Individual Oak Trees (IOTs)	
		Heritage Oak Trees	Native Oak Trees
Definition	Oak stand that contains greater than ten percent canopy cover. [1]	Native oak trees, outside of Oak Woodland Areas, with a single main trunk measuring measuring 36 dbh or greater, or with a multiple trunk with an aggregate trunk diameter measuring 36 inches or greater.	Individual oak tree, outside of Oak Woodland Areas, with a single main trunk measuring greater than 6 but less than 36 inches dbh, or with a multiple trunk with an aggregate trunk diameter measuring greater than 10 but less than 36 inches dbh.
Mitigation Ratio	00.1-50.0% of Oak Woodland Impact = 1:1 Ratio 50.1-75.0% of Oak Woodland Impact = 1.5:1 Ratio 75.1-100% of Oak Woodland Impact = 2:1 Ratio	Inch-for-inch replacement at a 3:1 ratio	Inch-for-inch replacement at a 1:1 ratio
Mitigation Obligations	Conservation, Tree Planting, Management & Monitoring	Conservation, Tree Planting, Management & Monitoring	Conservation, Tree Planting, Management & Monitoring
Duration of Conservation	Perpetuity	Seven (7) years	Seven (7) years

[1] The definition of OWAs also includes an oak stand that "may have historically contained greater than ten percent canopy cover," per Article 3.5 (commencing with Section 1360) of Chapter 4 of Division 2 of the Fish and Game Code. However, page 3 of the draft ORMP clarifies that ORMP conservation efforts focus on existing woodlands.

Prepared by New Economics & Advisory, June 2016.
Source: Draft ORMP, June 2016.

For oak woodland impacts that do not fall under an exemption category, mitigation options include on- or offsite tree planting, offsite conservation, and/or in-lieu fee payment. For IOT impacts (including Heritage Oak Trees and Native Oak Trees) that are not otherwise exempt, mitigation options include on- or offsite tree planting and/or in-lieu fee payment. This Nexus Study provides the justification for the in-lieu fee rate for each Oak Resource.

As described previously, the 2008 in-lieu mitigation fee study applied a series of cost estimate assumptions to a hypothetical 125-acre parcel to develop a per-acre fee. In contrast, this 2016 Nexus Study considers actual recent and/or current acquisition and management and monitoring costs faced by LCOs actively conserving oak woodland resources or other tree-dominated habitat. **Section 3** of this Nexus Study provides a complete list of existing LCOs actively acquiring and managing land for the purpose of conserving trees that were studied for purposes of identifying a range of costs. Data was sought for three major conservation activity categories: Acquisition, Initial M&M,

and Long-Term M&M. Once the cost ranges were established and reviewed, New Economics & Advisory, in consultation with County staff, determined that costs incurred by Placer Land Trust (PLT), American River Conservancy (ARC), and planning efforts related to the Placer County Conservation Plan (PCCP) should be prioritized because these organizations/studies provided data specific to oak woodland areas *and* operate primarily within El Dorado County or Placer County; therefore, their data represent the most accurate information pertaining to acquisition as well as management and monitoring costs. Moreover, compared to other adjacent counties (Sacramento County and/or Amador County), the attributes of Placer County's Oak Resources and development patterns are more similar to those of El Dorado County.

Costs incurred by these select LCOs are then averaged. This approach differs from the 2008 in-lieu fee analysis in that this 2016 Nexus Study takes into consideration costs for a variety of locations (rural and urban), terrains (canyon, valley, foothills), and sizes (small, ranch). Based on the recent and/or current costs incurred by these select LCOs, New Economics & Advisory developed an OWA In-Lieu Fee that includes the following components:

- Acquisition (via direct acquisition or conservation easements)
- Initial M&M
- Long-Term M&M
- Fee Program Administration

This 2016 Nexus Study also includes proposed fees for IOTs. Dudek and its subsidiary company, Habitat Restoration Sciences, Inc. (HRS), developed costs for acquisition and planting, as well as seven (7) years of management and monitoring, on a per diameter inch basis. Dudek and HRS researched current purchase prices for 1-gallon oak trees, applied industry standard assumptions for planting costs, and developed a per-acre cost of seven years of management of monitoring for a one-acre re-planting project.

This Nexus Study assumes that the County will administer the Oak Resources In-Lieu Fee program and remit fee revenues to existing or new LCO(s) dedicated to conserving Oak Resources (Oak Resources LCO). The Oak Resources LCO(s) will utilize In-Lieu Fees established herein to acquire and conserve Oak Resources.

Proposed Fee Rate Amounts

Figure 1.3 summarizes the total proposed fee rates for OWAs and IOTs. **Section 3** of this Nexus Study contains the assumptions and analysis supporting each of the OWA rates, while **Section 5** contains the assumptions and analysis supporting each of the IOT rates.

1.3 ***Summary of Fee Rates (2016$)***
El Dorado County Oak Woodland Nexus Study

Item	Oak Woodland Areas (OWAs) 0.01 - 50.0% Impact	50.01 - 75.0% Impact	75.01 - 100.0% Impact	Individual Oak Trees (IOTs) Heritage Oak Trees	Native Oak Trees
	per acre			*per diameter inch*	
Fee Rate	$8,285	$12,428	$16,570	$459	$153

Prepared by New Economics & Advisory, June 2016.

Oak Woodland Area In Lieu Fee (per acre)

The OWA In-Lieu Fee ranges from $8,285 to $16,570 per acre, depending on the mitigation ratio level. This rate funds the cost of land acquisition, Initial M&M (years 1-5), and Long-Term M&M (years 6-perpetuity).

Individual Oak Tree In Lieu Fee (per diameter inch)

The IOT In-Lieu Fee is $459 per diameter inch for Heritage Oak Trees and $153 per diameter inch for Native Oak Trees. This amount funds the cost of tree acquisition and planting as well as Initial M&M (years 1-7). This Nexus Study presumes that Long-Term M&M costs will be nominal and can be covered by the Oak Resources LCO(s) through maintenance of OWAs.

Administration and Implementation

As stated previously, it is anticipated that the County will collect in-lieu fees and transfer them to one or more Oak Resources LCOs, which will be in charge of acquiring, managing, and monitoring conservation areas and tree planting efforts funded by the in-lieu fees. The proposed fee rates identified above also include a 5 percent administration cost component for County staff to calculate fee obligations, collect fee revenues, transfer revenues to the entity managing conservation efforts, implement annual inflation updates, and periodically update the Nexus Study.

Documents Consulted for the Preparation of This Report

This 2016 Nexus Study references and/or relies upon a number of other documents and interviews with LCOs. **Appendix C** contains a complete list of sources and persons consulted.

Overview of Methodology

The approach utilized to develop the Oak Resources In-Lieu Fees includes the following general steps:

1. Identify the potential scale of new development that may impact existing Oak Resources.
2. For each Oak Resource, define the mitigation requirements and ratio(s).
3. Review the costs associated with mitigation for each Oak Resource. Convert costs to a per-acre basis for OWAs and per diameter inch for IOTs.
4. Establish a fee rate and nexus for each Oak Resource In-Lieu Fee.
5. Review administrative and implementation process for the Oak Resources In-Lieu Fee programs.

Organization of this Nexus Study

The remainder of this Nexus Study is organized in the following manner:

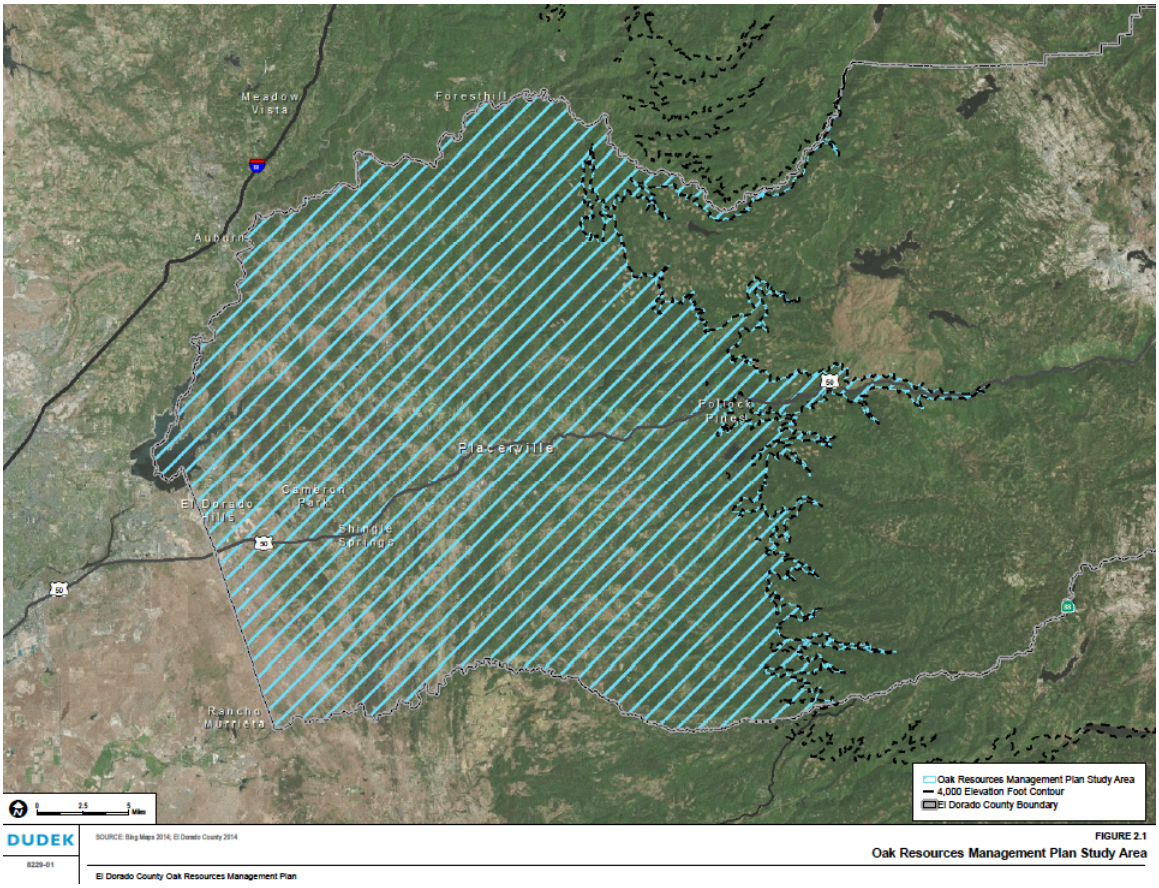
- **Section 2** provides an overview of potential housing unit and employment growth within El Dorado County.
- **Section 3** describes how oak woodland conservation costs were developed.
- **Section 4** establishes the nexus for the proposed OWA In-Lieu Fee.
- **Section 5** explains the development of individual oak tree replacement costs.
- **Section 6** establishes the nexus for the proposed IOT In-Lieu Fee.
- **Section 7** provides implementation procedures to administer the fee programs.
- **Appendix A** contains supporting calculations for OWA conservation costs.
- **Appendix B** contains supporting calculations for the endowment component of the OWA In-Lieu Fee.
- **Appendix C** contains a bibliography for this Nexus Study.

2. Fee Program Boundary, Eligibility, & Standards

This section provides an overview of the boundaries of the Oak Resources In-Lieu Fee program and reviews the type and potential scale of development that may elect to pay the fees.

Fee Program Boundaries

The boundaries for this Nexus Study are the same as those included in the draft ORMP, which include the area bordered by the County's administrative boundary to the north, west, and south and ending at the 4,000-foot elevation to the east as shown in **Figure 2.1.** This area contains the same categories of oak woodlands as described in the California Department of Forestry and Fire Protection's (CAL FIRE) Fire and Resource Assessment Program (FRAP) and addressed in the County's 2004 General Plan.



New Development Eligible for In-Lieu Fee Option

Mitigation requirements for impacts to OWAs will apply to any land development project requiring a discretionary entitlement from the County that is subject to review under CEQA and which will have an impact on Oak Resources within the draft ORMP boundaries. Mitigation requirements for IOTs will apply to any activity requiring a building permit or grading permit issued by El Dorado County and/or any action requiring discretionary development entitlements or approvals from El Dorado County within the draft ORMP boundaries. **Section 7** of this Nexus Study contains a description of development activities that are exempt from mitigation requirements for Oak Resources. For non-exempt activities, the draft ORMP provides options for mitigation:

- on- or offsite tree planting[4];
- off-site conservation;
- payment of the In-Lieu Fee; or
- a combination of the above.

The Oak Resources In-Lieu Fees will apply to any eligible, non-exempt development project that chooses to mitigate quantified impacts to Oak Resources by selecting the In-Lieu fee payment option.

Anticipated Growth Through 2035

The projected growth throughout the County is anticipated to impact oak resources. **Figure 2.2** summarizes the scale of development anticipated between 2014 and 2035 within unincorporated areas of the County's Western Slope (the area outside of the Lake Tahoe Basin[5]). This area includes a larger territory than the draft ORMP boundary but is the closest approximation for purposes of this Nexus Study.

Oak Resources Mitigation Standards

LOS standards for Oak Resources mitigation, developed in the draft ORMP, are summarized in **Figure 1.2** in **Section 1** of this Nexus Study. For OWAs, the mitigation ratio depends on the percentage of OWAs impacted. For IOTs, mitigation is based on the total tree trunk diameter inches removed.

[4] As noted in Section 2.2.2 of the draft ORMP, replacement planting shall not account for more than 50 percent of the oak woodland mitigation requirement, consistent with California Public Resources Code Section 21083.4..

[5] SACOG tracks data for multiple Transportation Area Zones (TAZs) that comprise the Western Slope; TAZ 13 appears to include a large area between the boundary of the draft ORMP and the Lake Tahoe Basin.

2.2 *El Dorado County Development Projections 2010-2035*

Category	Units/Jobs 2010	2020	2035	Growth 2010-2035
Housing Units [1]	59,668	66,102	77,077	17,409
Jobs [2]	32,597	38,539	48,675	16,078

Prepared by New Economics & Advisory, June 2016.

[1] From BAE 2035 Growth Projections Memorandum, Table 2: Projected Residential Growth Rates, 2010 to 2035. (Full report citation below). Projection based on historical average annual rate of new units (2000-2011).

[2] From BAE 2035 Growth Projections Memorandum, BAE Memorandum, Table 5: Projected New Jobs by Market Area, 2010-2035. (Full report citation below).

Source: BAE Urban Economics, 2035 Growth Projections Memorandum, March 14, 2013.

3. Costs to Conserve OWAs

New development that impacts existing OWAs will have three options to mitigate impacts: plant replacement trees on- or offsite, conserve oak woodlands off-site, and/or pay an In-Lieu Fee. This section of the Nexus Study describes the costs associated with mitigation through an In-Lieu OWA Fee.

Oak Woodland Areas Overview

Figure 3.1 provides a summary of the different types of Oak Woodland and the number of acres that currently exist in the draft ORMP Study Area (including within the PCAs).

3.1 ***Oak Woodland Types***
El Dorado County, 2016

Oak Woodland Type	ORMP Boundary Total (acres)	Percent
Blue Oak Woodland	46,521	18.9%
Blue Oak-Foothill Pine	64,740	26.2%
Coastal Oak Woodland	2	<0.1%
Montane Hardwood	98,930	40.1%
Montane Hardwood-Conifer	32,643	13.2%
Valley Oak Woodland	3,970	1.6%
Total	**246,806**	**100%**

Source: California Department of Forestry and Fire Protection (CAL FIRE) California Fire and Resource Assessment Program (FRAP) 2015.

Impacts to OWAs

As discussed in **Section 5** of the draft ORMP, the number of OWA acres impacted by a project, if any, will be identified in an Oak Resources Technical Report (ORTP) prepared by a qualified professional hired by the project applicant. Should it be determined that OWAs will be impacted, the development project will be subject to the mitigation ratios shown in **Figure 1.2** in **Section 1** of this Nexus Study.

Approach to Estimating Costs

As explained in **Section 1**, this Nexus Study considers actual recent and/or current acquisition and M&M costs faced by LCOs actively conserving oak woodland resources or other tree-dominated habitat. **Figure 3.2** lists these organizations and provides an

3.2 *Select Land Conservation Organizations (LCOs)*
Key Characteristics

Organization	Geographical Areas Covered	Accredited [1]	Entity Structure	Description of Habitat Conserved	Organization's Responsibilities
American River Conservancy (ARC)	Central Sierra Nevada Foothills (El Dorado, Amador, & Placer Counties)	No	501(c)3	Various habitat, recreation access, riparian corridors, oak savannahs.	Promote healthy ecosystems within the Upper American and Upper Cosumnes River watersheds.
Placer Land Trust (PLT)	Placer County (West Placer County)	Yes	501(c)3	Open spaces, natural areas, wildlife habitat, family farms, and working ranches.	Monitor, restore & manage properties to enhance the public value of properties, restore wildlife habitat, etc.
Placer County Conservation Plan (PCCP)	Placer County	N/A	N/A	Natural areas and landscapes containing oak woodland, aquatic and wetland ecosystems, valley foothill riparian, and vernal pool grasslands.	Protect habitat, wildlife, agricultural land, and retain the functionality of ecosystems.
Sempervirens Funds (SF)	Santa Cruz Mountains between Silicon Valley and the Pacific Ocean	Yes	501(c)3	Redwood forests and forest lands.	Conserve land, protect old-growth redwoods, and create refuge and recreation.
Sacramento Tree Foundation (STF)	Sacramento Region Counties	No	501(c)3	Native trees in 6 counties.	Conserve trees for neighborhoods, schools, parks and open spaces. Provide full-service tree mitigation programs and services.
Sierra Foothill Conservancy (SFC)	Fresno, Madera, Mariposa, and Merced	Yes	501(c)3	Wildlife and nature preserves in Sierra Nevada foothills	Protect, manage, administer, and preserve land and wildlife in the Central California area.
Save the Redwoods League (SRL)	Coastal Redwood counties: Humboldt, San Mateo, Napa, Mendocino, Sonoma, Tulare, Monterey, Santa Cruz, and Del Norte	Yes	501(c)3	Redwood forests and surrounding lands	Protect and restore redwood forests.
Sacramento Valley Conservancy (SVC)	Sacramento, Yolo, Sutter, Yuba, Placer, Amador, San Joaquin, Solano Counties	Yes	501(c)3	Open space	Create dedicated open space, facilitation of acquisition, conservation easements and other cooperative efforts.

Prepared by New Economics & Advisory, June 2016.
Sources: New Economics internet research, interviews, and land conservation organization feedback, April-June 2015.
[1] Accreditation through Land Trust Alliance as of May 2015.

indication of the geographic territory they serve, their structure, the type of habitat conserved, and their primary conservation role(s).

These organizations were selected because of their focus on conserving woodland habitat or other tree-dominated habitat. **Figure 3.3** provides an overview of the scale of habitat protected by these LCOs, how this habitat has been protected (via direct acquisition or conservation easement), and the scale of habitat actively managed by each organization. Because some organizations protect a variety of habitat land, (e.g. vernal pools, riparian corridors), acreage shown in this figure includes *all* land protected by the organization, not merely land protected for purposes of conserving woodland habitat.

For each of these LCOs, New Economics & Advisory collected data regarding recent land acquisitions, (including the cost and method), as well as annual management and monitoring costs. These costs were then translated into a "per-acre" basis. Data was gathered from each LCO's website, publicly available financial statements, and/or consultation with LCO staff. **Appendix A** contains the detailed technical research supporting financial calculations for each of the LCOs.

Conservation Activities Overview

This 2016 Nexus Study identifies three stages of conservation:

1. **Acquisition.** This first stage includes due diligence, planning for management and monitoring, and the actual land acquisition transaction.
2. **Initial M&M.** According to interviews with LCO staff, this second stage of conservation typically lasts up to 5 years and includes baseline documentation, fuel management, clearing of debris, establishment of fencing, active monitoring to ensure that OWAs or IOTs are maintained, etc.
3. **Long-Term M&M.** This third stage of conservation is the least onerous and involves periodic fuels management, invasive species management, and repairs on an as-needed basis.

Figure 3.4 provides examples of conservation activities during each of these stages.

3.3 LCO Land Protection Trends

Distribution of Land Holdings and Management

Description	Habitat Protected (Acres)				Acres Actively Managed [1]
	Owned in Fee Title	Held via CE	Other Ownership	Total Protected	
American River Conservancy (ARC)	13,661	1,740	9,583	24,984	15,401
% of Total	*55%*	*7%*	*38%*	*100%*	*62%*
Placer Land Trust (PLT)	3,737	4,029	-	7,766	4,825 [2]
% of Total	*48%*	*52%*	*0%*	*100%*	*62%*
Placer County Conservation Plan (PCCP)	N/A	N/A	N/A	48,250 [3]	N/A
% of Total	*N/A*	*N/A*	*N/A*	*100%*	*N/A*
Sempervirens Fund (SF)	5,180 [4]	354	5,179	10,713	10,713
% of Total	*48%*	*3%*	*48%*	*100%*	*100%*
Sacramento Tree Foundation (STF)	-	NA	NA	NA	30 [5]
% of Total	NA	NA	NA	NA	NA
Sierra Foothill Conservancy (SFC)	6,481	16,721	2,541	25,743	6,481
% of Total	*25%*	*65%*	*10%*	*100%*	*25%*
Save the Redwoods League (SRL)	2,950	22,986	33	200,000	14,454
% of Total	*1%*	*11%*	*0%*	*100%*	*7%*
Sacramento Valley Conservancy (SVC)	7,000	N/A	N/A	20,000	4,062 [6]
% of Total	*35%*	*N/A*	*N/A*	*100%*	*20%*

Prepared by New Economics & Advisory, June 2016.

[1] Each organization manages a combination of land owned in fee title and/or through contracts on land protected via conservation easements. Figures reflect a subset of total protected lands.

[2] Based on budgeted forecasts by acreage provided by Placer Land Trust staff for the 2016-2020 period.

[3] PCCP plans to acquire 48,250 acres of conservation land by 2065. This plan is still being prepared.

[4] Sempervirens Funds co-owns the land they manage. For purposes of this analysis New Economics includes only half of the land co-ownershiped with Peninsula Trust. Sempervirens places conservation easements on land it owns.

[5] In 2014, STF planted and cared for 4,450 trees. At about 150 trees per acre, STF estimates 30 acres of land under management.

[6] Acres managed under Deer Creek Hill Preserve.

Sources: New Economics internet research, interviews, and land conservation organization feedback, April-June 2015.

3.4 ***Typical Conservation Activities-- OWAs***
Acquisition, Management, and Monitoring

Acquisition	Initial M&M [1]	Long-Term M&M
Conservation Easement Acquisition	Biological Surveys/Baseline Documentation	License/Contract Agreement Mgmt.
Direct Property Acquisition	Fuel Load Mgmt.	Fuel Load Mgmt.
Legal Document Prep. & Review	Equipment & Materials Mgmt.	Volunteer Training/Coordination
Site Inspection	Database Mgmt./Reporting	Office Equipment/Computers Maint./Upgrades
Aerial Photos	Photo-Documentation	Endowment Mgmt.
Appraisals	Manage/Transition Cattle/Grazing Leases	Aerial Photos
Due Diligence Surveys/Analyses	Monitoring & Adaptive Management:	Administration/Overhead
Mitigation/CE Negotiations	Reforesting	Infrastructure/Property Maintenance:
	Exotic Species/Plant Removal	Debris/Trash Mgmt.
	Building Removal/Maint.	Weed Control
	Invasive Vegetation/Thatch Mgmt.	Cattle Grazing Monitoring & Mgmt.
	Invasive Species Mgmt.	Water Systems Maint.
		Fence Building & Repairs
		Trail Building & Maintenance
		Erosion/Road Repair & Improvements
		Recreation Use Enhancements

Prepared by New Economics & Advisory, June 2016.
[1] Some Initial M&M tasks are carried over to long-term management and monitoring with less intensity.
Sources: California Council of Land Trust website accessed May 2015; Land Trust Alliance website, accessed May 2015; New Economics internet research, interviews; and land conservation organization feedback, April-June 2015.

Acquisition (Year 0)

Acquisition of OWAs are expected to take one of two forms:

- **Direct Acquisition**. This Nexus Study presumes that the Oak Resources LCO(s) will hold fee title to property conserved through direct acquisition (instead of passing it along to another public agency or non-profit entity). This Nexus Study also assumes that properties conserved via direct acquisition will also be actively managed by the LCO. This assumption is consistent with current practices for many of the LCOs tracked in this analysis.
- **Acquisition of Conservation Easements (CEs)**. Properties protected through the purchase of CE's are expected to remain under the ownership of private landowners holding fee title to such properties. LCO interviews indicated that land protected through CEs is, in some cases, managed by the landowners but nearly always monitored (for compliance purposes) by the LCO. In other cases, the landowner and LCO enter into an M&M contract that specifies the range and cost of M&M services to be provided by the LCO. This 2016 Nexus Study presumes that OWAs protected through CE's will be subject to an active M&M contract between the land owner and Oak Resources LCO and that the LCO will provide the same level of M&M as land owned by the Oak Resources LCO.

In addition to the purchase price for acquisition of property or CE's, other costs included in this category include legal services, appraisals, due diligence, title insurance and escrow fees, and organizational staff time associated with acquisition efforts.

Direct Acquisition Costs

Figure 3.5 contains a summary of direct property acquisition cost trends for LCOs on a per-acre basis. These per-acre figures reflect acquisitions expressly made for purposes of conservation, predominantly within the last five years, and reflect nominal dollars.[6] **Appendix A** contains supporting acquisition information for each LCO, including the purchase price, other acquisition-related costs, and the size of the property. In some cases, LCO staff was able to articulate trends as well as specific transaction details. Recent conservation land costs among LCOs range from $1,000 to nearly $17,000 per acre, but most fall within a range of $2,800 to $12,000 per acre.

New Economics & Advisory then further reviewed per-acre costs incurred within El Dorado County and Placer County, given that these areas provide the most proximate approximations of cost likely to be incurred by one or more Oak Resources LCOs conserving OWAs with funds from Oak Resources In-Lieu Fees.[7] **Figure 3.5** lists data points from the following entities:

- **El Dorado County Assessor's Office.** The Assessor's Office provided a list of land transactions over the last five years for properties that contain OWAs. Of the information provided (see **Appendix A Table A1**), one transaction stood out as a viable comparable because a significant portion of the property contained OWA. This transaction, which dates back to 2012, is included in **Figure 3.5**. The other transactions contained relatively little OWA and their prices per acre reflect their "development" value, as opposed to their potential OWA value.
- **ARC.** ARC provided three direct acquisition transactions as well as a per-acre estimate that staff utilizes for planning purposes. These transactions varied in size from 1,000 to 10,000 acres. Because ARC is about to complete an unusually large land purchase, New Economics & Advisory applied a direct average approach when deriving a per-acre cost for this organization (shown- in **Appendix A Table A2.1**).
- **PLT.** PLT provided two direct acquisition transactions for land containing OWAs; these transactions varied in size from 80 acres to nearly 1,800 acres and costs include purchase price, legal fees, appraisal, title insurance and escrow fees, and staff and administrative time. **Appendix A Table A3.1** contains the detailed documentation of these transactions. Staff also provided their input on current per-acre market prices for oak woodland in different terrains within Placer County.

[6] Real estate transactions are not converted to a single year (i.e. 2016$) owing to varying market conditions over time and by market area. As a result, all transactions are shown in nominal dollars—or the cost incurred in the year they were incurred—and are not inflated to 2016$.

[7] For example, Save the Redwoods League (SRL) makes the bulk of its acquisitions along the California Coast for properties that contain redwood groves; coastal values tend to be significantly high compared to Central Valley values.

3.5 *Direct Acquisition Price Assumption*
LCOs (Nominal Dollars)

Organization	Recent Property Acquisitions: Acres Purchased [1]		Recent Property Acquisitions: Cost per Acre [2]	
All LCO Data				
El Dorado County Assessor Comparable Transaction	71		$2,047	
American River Conservancy (ARC)	12,139		$5,400	[3]
Planning Estimate Provided by Staff			$5,000	
Placer Land Trust (PLT)	1,853		$5,500	
Canyon Areas Estimate from Staff [4]	N/A		$3,000 - $4,000	
Foothill Areas Estimate from Staff [4]	N/A		$5,000 - $6,000	
Valley Areas Estimate from Staff [4]	N/A		$10,000 - $12,000	
Oak Woodland Areas Overall Estimate from Staff [3]			$5,500	
Sierra Foothill Conservancy (SFC)	2,291		$1,000	
Sacramento Valley Conservancy (SVC)	4,062		$2,812	
Placer County Conservation Plan (PCCP)	N/A		N/A	
Sacramento Tree Foundation (STF)	N/A	[5]	N/A	
Save the Redwoods League (SRL)	158		$16,772	
Sempervirens Fund (SF)	429		$8,886	
LCO Data Applied in this Analysis				
El Dorado County Assessor Comparable Transaction	71		$2,047	
American River Conservancy (ARC)	12,139		$5,400	
Planning Estimate Provided by Staff	N/A		$5,000	
Placer Land Trust (PLT)	1,853		$5,500	
Canyon Areas Estimate from Staff [4]	N/A		$3,000 - $4,000	
Foothill Areas Estimate from Staff [4]	N/A		$5,000 - $6,000	
Valley Areas Estimate from Staff [4]	N/A		$10,000 - $12,000	
Oak Woodland Areas Overall Estimate from Staff [3]			$5,500	
Direct Acquisition Price Applied for this Analysis (2016$) [6]			**$5,000**	

Prepared by New Economics & Advisory, June 2016.

[1] Reflects select recent purchases, based on information provided directly by organizations or taken from their published financial documents.

[2] Reflects weighted average cost of all recent acquisitions, unless otherwise noted.

[3] Reflects straight average of recent acquisitions because one large transaction would otherwise skew the result.

[4] As reported by PLT staff, May 2015.

[5] STF does not own or acquire property.

[6] While the data sources reflect figures expressed in nominal dollars over a period of multiple years, this analysis expresses the final figure as a 2016 dollar amount for purposes of calculating a fee rate.

Source: See Technical Appendix A for supporting calculations.

Data points developed from these three sources provides a narrower range of $2,000 - $12,000, with most points falling between $3,000 and $6,000. New Economics & Advisory selected a direct acquisition price of $5,000 per acre for purposes of this 2016 Nexus Study; this amount falls within the range of prices experienced and/or anticipated by the organizations actively conserving OWAs within closest proximity to El Dorado County and is aligned with the expertise of organizational staff. The selected price is also higher than the mid-point of the range to allow for purchase of non-OWA land included in a parcel that contains the desired amount of OWA acreage.

Conservation Easement Acquisition Costs

CE's tend to provide a more cost effective means of conserving land. **Figure 3.6** provides a summary of recent acquisitions via CE's by LCOs. These per-acre figures reflect CEs entered into expressly for purposes of conservation, predominantly within the last five years. **Appendix A** contains supporting CE information for each LCO, including the purchase price, other acquisition-related costs, and the size of the property. Because CEs are used less often than direct acquisition, there were fewer CE data points; nonetheless, individual easement transactions varied from 26 acres (PLT) to 22,986 (Save the Redwoods League) acres in size. These data points provide a range of $700 - $3,500 per acre.

Interviews with LCO staff revealed the following important caveats regarding valuation of CEs:

- CE's are sometimes chosen over direct acquisition because the subject property has a development restriction already and cannot be developed. For example, a subject property within a larger master planned community may have a vernal pool on it. Other examples of development restrictions can include poor road access, lack of utility connections, steep slope, etc. In these cases, because the property is already prevented or hindered from being developed, the starting appraised value may well be lower than a nearby "comparable" property that can be developed.
- The value for a CE should, theoretically, reflect the value of "development potential," excluding other income potential for the property, primarily associated with grazing and/or timber. LCO staff experienced in appraisals have observed that CE values are often lower than expected by the landowner, which can act as a disincentive to landowners interested in placing a CE on their property. In practice, only properties located in urban areas or areas facing significant development pressures tend to generate enough value for a CE to make financial sense to most landowners.

3.6 *Conservation Easement Value Assumption*

LCO Case Studies (Nominal Dollars)

Organization	Recent Conservation Easement Purchases: Acres [1]	Recent Conservation Easement Purchases: Cost per Acre
All LCOs		
American River Conservancy (ARC)	1,178	$1,585
Placer Land Trust (PLT)	858	$1,600
Sierra Foothill Conservancy (SFC)	6,948	$700
Sempervirens Fund (SF)	151	$3,477
Save the Redwoods League (SRL)	23,364	$771
Placer County Conservation Plan (PCCP)	N/A	N/A
Sacramento Tree Foundation (STF)	N/A	N/A
Sacramento Valley Conservancy (SVC)	N/A	N/A
LCO Data Applied in this Analysis		
American River Conservancy (ARC)	1,178	$1,585
Placer Land Trust (PLT)	858	$1,600
CE Acquisition Price Applied for this Analysis [2]		**$1,600**

Prepared by New Economics & Advisory, June 2016.
[1] Reflects select recent CE's, based on information provided directly by organizations or taken from their published financial documents.
[2] Figure rounded to nearest hundred dollars. Also, while the data sources reflect figures expressed in nominal dollars over a period of multiple year, this analysis expresses the final figure as a 2016 dollar amount for purposes of calculating a fee rate.
Source: See Technical Appendix A for supporting calculations.

New Economics & Advisory further reviewed per-acre CE costs incurred within El Dorado County and Placer County, given that these areas provide the most proximate approximations of cost likely to be incurred by an Oak Resources LCO conserving OWAs with funds from Oak Resources In-Lieu Fees. **Figure 3.6** lists data points from the following entities:

- **ARC.** ARC provided one recent CE for a 1,200-acre easement. Costs included the purchase price as well as a contribution to an Endowment Fund; the endowment contribution was included in the cost because the purchase price could have been increased without this contribution.
- **PLT.** PLT provided five recent CEs transactions; these transactions varied in size from 26 to 350 acres and costs include purchase price, legal fees, mitigation

contracts, and contributions to a Stewardship Fund. The Stewardship Fund contribution was included in the cost because the purchase price could have been increased without this contribution. **Appendix A Table A3.1** contains the detailed documentation of these transactions. Staff also provided their input on current per-acre market prices for oak woodland in different terrains within Placer County.

Data points developed from these two sources provides an estimate of $1,600 per acre for CE costs. New Economics & Advisory selected this cost for purposes of this 2016 Nexus Study; this amount falls within the range of prices experienced and/or anticipated by the organizations actively conserving OWAs within closest proximity to El Dorado County.

Calculation of Overall Acquisition Cost Per Acre Assumption

The Acquisition Component of the OWA In-Lieu Fee should account for both direct acquisitions and acquisitions via CEs. **Figure 3.7** indicates a range of 7% to 65% of total land acquired through CEs (as opposed to direct acquisition), with a weighted average of 18%. When considering only ARC and PLT, the range is slightly smaller—7% to 52%-- but the weighted average remains 18%. This 2016 Nexus Study applies this same proportionality of direct acquisition versus acquisition via CE's. **Figure 3.7** calculates an Acquisition cost per acre for OWAs based on this proportionality.

3.7 *Weighted Average Acquisition Cost Per Acre*

2016$

Organization	Total Acres Protected	CE's as a % of Total [1]
All LCOs		
American River Conservancy (ARC)	24,984	7%
Placer Land Trust (PLT)	7,766	52%
Placer County Conservation Plan (PCCP)	48,250	N/A
Sierra Foothill Conservancy (SFC)	25,743	65%
Save the Redwoods League (SRL)	200,000	11%
Weighted Average of Land Acquired via CE	[2]	**18%**
LCO Data Applied in this Analysis		
American River Conservancy (ARC)	24,984	7%
Placer Land Trust (PLT)	7,766	52%
Weighted Average of Land Acquired via CE		**18%**
Calculation of Average Acquisition Cost Per Acre		
Average Direct Acquisition Cost Per Acre	$5,000	82%
Average CE Cost Per Acre	$1,600	18%
Weighted Average Acquisition Cost Per Acre [3]	**$4,400**	

Prepared by New Economics & Advisory, June 2016.

[1] Based on total protected land shown in Figure 1.3.

[2] Excludes STF (which does not own or acquire property), SVC (for lack of information), and PCCP (for lack of information).

[3] Figure rounded to nearest hundred dollars.

Source: See Technical Appendix for supporting calculations.

Management & Monitoring (M&M)

The draft ORMP requires that OWAs be actively managed and maintained in perpetuity. An Initial M&M stage consists of one-time activities (certain one-time tasks that must be performed), as well as specific M&M efforts conducted over the first few years to ensure that the OWAs are brought up to a manageable condition. The Long-Term M&M stage begins when Initial M&M activities come to an end and less intensive M&M activities are needed. **Figure 3.4** provides examples of these activities.

Figure 3.8 summarizes estimated M&M on a per-acre basis for LCOs; costs range from $19 (from planning efforts associated with the Placer County Conservation Plan [PCCP]) to $11,211 (Sacramento Tree Foundation [STF])[8] per managed acre, but tended to fall mostly within a range of $40 to $51 per managed acre.

3.8 ***Annual M&M Costs -- Case Study LCOs***
2016$

Organization	Managed Acres	Annual M&M Costs per Acre
All LCOs		
Placer County Conservation Plan (PCCP)	N/A	$18.82
Sempervirens Fund (SF)	10,713	$41.19
Sacramento Valley Conservancy (SVC)	4,062	$39.97
American River Conservancy (ARC)	15,401	$40.00
Placer Land Trust (PLT)	4,825	$51.08
Sierra Foothill Conservancy (SFC)	6,481	$116.06
Save the Redwoods League (SRL)	14,454	$314.96
Sacramento Tree Foundation (STF)	30	$11,211.09
LCO Data Applied in this Analysis		
American River Conservancy (ARC)	15,401	$40.00
Placer Land Trust (PLT)	4,825	$51.08
Weighted Avg M&M Costs		$42.64
Monitoring & Management Applied in Nexus Study [1]		**$43.00**

Prepared by New Economics & Advisory, June 2016.
[1] Figures rounded to the nearest whole dollar.
Source: See Technical Appendix for supporting calculations.

New Economics & Advisory derived these estimates based on recent publicly available financial statements, consultation with organizational staff, and information gleaned from the organization's web site and/or annual reports. M&M costs generally include conservation activities for active M&M as well as a proportionate share of overhead and administrative costs. **Appendix A** contains detailed financial calculations supporting M&M costs for each LCO.

[8] STF's primary mission is to plant trees as opposed to maintaining existing woodland.

New Economics & Advisory further reviewed per-acre CE costs incurred by organizations actively managing OWAs in El Dorado County and/or Placer County, given that these areas provide the most proximate approximations of cost likely to be incurred by an Oak Resources LCO conserving OWAs with funds from Oak Resources In-Lieu Fees. **Figure 3.8** lists data points from the following entities:

- **ARC.** ARC staff provided a verbal estimate of $35-40 per acre to manage oak woodland areas located on ranch-size properties (1,000 acres+); this amount includes 15-20% overhead. Staff also pointed out that annual M&M costs can be more expensive for smaller properties, properties located in urban areas, or properties that provide recreational access. New Economics & Advisory applied the high end of the range for purposes of this 2016 Nexus Study to provide buffer for properties that cost more to manage and monitor.
- **PLT.** PLT provided M&M costs for four conservation properties recent CEs transactions; these costs include active M&M, 15% overhead, and maintenance of field equipment. PLT also cited the need for periodic surveys and aerial photos, but has not yet performed any of these on oak woodland properties.

Appendix A contains the detailed documentation supporting these cost estimates.[9]

Initial M&M

Initial M&M includes one-time costs spread over the first few years of managing and monitoring a conservation property as well as five years of typical M&M annual costs. One-time costs typically include baseline documentation, fuel load management, clearing of debris, establishment of fencing, active monitoring to ensure that OWAs are maintained, etc. LCO staff confirmed that Initial M&M costs are higher than Long-Term M&M costs; also, the Initial M&M stage lasts 2-5 years, to allow the LCOs to spread one-time costs over a number of years.

However, existing LCOs were unable to parse out the cost of Initial M&M activities. In some cases, Initial M&M costs are factored into the Acquisition price (in the form of M&M contracts, as well as a portion of contributions to a Stewardship Fund and/or Endowment Fund). Also, Initial M&M costs can vary significantly depending on the nature and needs of the property; for example, to the extent that a property is located in an urban area and/or has public access, Initial M&M costs tend to be higher because of the need to address recreation access, trespassing, dumping, fencing, etc.

[9] Estimated M&M costs for the PCCP were excluded from the final M&M cost per acre calculation because, at the time of preparing this Nexus Study, Placer County staff knowledgeable about oak woodland management were unavailable to provide clarifications regarding why this planning effort appeared to have a much lower cost per acre compared to other organizations actively engaged in M&M efforts.

PCCP planning efforts have considered Initial M&M activities for oak woodlands and other habitat; these planning efforts have identified a specific need for field facilities, (which would include equipment storage, manager's office, shared office, locker room, and restrooms), and an initial fuels treatment. Based on the financial planning worksheets developed by the PCCP, **Figure 3.9** provides an indication of one-time costs that can be incurred during the Initial M&M period.

3.9 ***M&M Costs - Potential One-Time Costs***
2016$

Expenditure	Amount	Metric	Cost Per Acre
One-Time Activities (Year 0) [1]			
Field Facilities [2]	$500,000	Projected 48,250 acres within 50-yr permit period.	$10.36
Initial Management [3]	$1,800	Initial One-Time Cost per acre.	$1,800.00
Subtotal One-Time Activities			$1,810.36
Inflated to 2016$			$2,423.61
One-Time Costs Applied in this Analysis [4]			$2,424.00

Prepared by New Economics & Advisory, June 2016.

Source: Woodland Restoration Potential: Placer County Conservation Plan, Richard R. Harris, Ph.D., February 2013; and PCCP Cost Model 2013 Working Draft 9/23/2013.

[1] Reflects cost of one-time activities conducted shortly after undertaking management and monitoring responsibilities.

[2] This estimated cost is currently incurred by Placer County as estimated for purposes of developing the Placer County Conservation Plan (PCCP). Field facilities could include equipment storage, offices for personnel, locker rooms and restrooms, etc. To ensure full funding for this nexus study, New Economics has integrated this cost into Initial M&M.

[3] Could include fuels management, fencing, clearing of debris, active monitoring, and other related efforts. This analysis applies the estimated cost of intial fuels management for woodland areas, based on an estimate created for the PCCP. A portion of gross Initial Management efforts may be integrated into acquisition costs, so the total cost for Initial Management could vary with each individual property acquisition.

[4] Figure rounded to nearest dollar.

In addition to these one-time costs, this analysis assumes that the Oak Resources LCO(s) will incur typical annual M&M costs shown in **Figure 3.8**. As a result, the Initial M&M period will include both one-time costs and annual M&M costs. This 2016 Nexus Study includes an Initial M&M period of five (5) years based on recommendation of LCOs and standard practices.

Figure 3.10 provides the total cost per acre for Initial M&M.

3.10 ***M&M Costs -- OWAs***
2016$

Item	Cost per Acre
Initial M&M (Yrs. 1-5)	
One-Time Costs	$2,424
M&M Costs (Yrs. 1-5) [1]	$215
Total Initial M&M Costs	$2,639
Initial M&M Costs Applied in this Analysis [2]	**$2,600**

Prepared by New Economics & Advisory, June 2016.
[1] Reflects annual cost of $43 over five years.
[2] Figure rounded to nearest one hundred dollars.

Long-Term M&M

The draft ORMP requires M&M in perpetuity for OWAs. As a result, the OWA In-Lieu Fee is designed to fund annual M&M in perpetuity to ensure that conservation land can be adequately maintained over time. **Figure 3.8** establishes an annual M&M cost of $43 per acre; this figure forms the basis for Long- Term M&M costs on a per-acre basis.

Endowment Calculations

To ensure that Long-Term M&M can be provided in perpetuity, it is expected that Oak Resources LCOs will create an Endowment Fund whose annual interest accrual can be utilized to fund annual M&M. This 2016 Nexus Study establishes a Long-Term M&M Fee Component that reflects a contribution to an Endowment Fund.

New Economics & Advisory reviewed endowment rates utilized to establish other habitat-related fee programs, ten-year averages tracked by the National Association of College and University Business Officers (NACUBO), and goals established by select LCOs. These sources indicate that long-term interest rates range from 3 to 6 percent annually. **Technical Appendix B** contains documentation of this research.

Based on this range, New Economics & Advisory calculated an Endowment component for the OWA In-Lieu Fee that generates sufficient interest beginning in Year 8 to cover Long-Term Annual M&M costs. **Figure 3.11** calculates the lump-sum per-acre contribution needed to achieve 4% annual interest earnings that can fully fund annual M&M in perpetuity. **Figure 3.12** summarizes the resulting lump-sum contribution needed, on a per-acre basis, to create sufficient interest earnings to fully fund Long-Term M&M costs, at three different interest-earning rates, beginning in Year 8. **Technical Appendix B** provides the back-up technical documentation supporting the 3% and 6% interest rate. For purposes of establishing an Endowment component for this

3.11 *Endowment Cash Flow Projections (2016$ constant dollars)*

4.0% annually

Item	Assumption	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Habitat Acres Maintained		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Annual Maintenance Cost	$43 per acre	$43	$43	$43	$43	$43	$43	$43	$43	$43	$43
Portion Prepaid by Initial M&M Fee Component [1]		$43	$43	$43	$43	$43	$0	$0	$0	$0	$0
Remaining Annual Maintenance Cost		$0	$0	$0	$0	$0	$43	$43	$43	$43	$43
Endowment Fund											
Opening Balance		$0	$890	$926	$963	$1,001	$1,041	$1,040	$1,039	$1,038	$1,037
Interest Earnings [2]	4.0% annually	$0	$36	$37	$39	$40	$42	$42	$42	$42	$41
New Fee Revenue Available	$890 per acre	$890	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Balance		$890	$926	$963	$1,001	$1,041	$1,083	$1,082	$1,081	$1,080	$1,078
Amount Applied Toward O&M Cost		$0	$0	$0	$0	$0	$43	$43	$43	$43	$43
Closing Balance		$890	$926	$963	$1,001	$1,041	$1,040	$1,039	$1,038	$1,037	$1,036

Prepared by New Economics & Advisory, June 2016.

[1] This amount is to be provided by developers up-front to fund 5 years of maintenance.

[2] Interest earnings are applied to previous year's ending balance.

fee study, the OWA In-Lieu Fee assumes the middle interest rate (4%) earnings assumption.

3.12 ***Endowment Fee Component-- OWAs***
2016$

Item	Cost per Acre
Endowment Fee	
Assuming 6.0% annual interest	$550
Assuming 4.0% annual interest	$890
Assuming 3.0% annual interest	$1,250
Endowment Fee Applied in this Analysis	$890

Prepared by New Economics & Advisory, June 2016.
Source: See Technical Appendix for supporting calculations.

Administration

As described in more detail in **Section 7** of this Nexus Study, the County will be responsible for administration of the Oak Resources Fees. Administrative duties will include the calculation and collection of the fees, tracking of deposits, preparation of required reports, performance of annual inflation adjustments, and periodic updates to the Oak Resources In-Lieu Fees Nexus Study. The County also intends to track the location of OWAs purchased with In-Lieu Fee revenues; this effort is expected to require mapping services using Geographic Information Systems (GIS) or similar software. As such, the OWA In-Lieu Fee will include a 5% administrative cost for these administrative functions.

Total Costs

Figure 3.13 provides a summary of the total cost per acre to conserve OWAs through the In-Lieu fee program. This rate includes Acquisition, Initial M&M, Long-Term M&M, and Administration.

3.13 *OWA Conservation Cost Components*
Per Acre (2016$)

Item	Amount Per Acre
Cost Components	
Acquisition (Direct or CE)	$4,400
Initial M&M (Years 1-5)	$2,600
Endowment (for Long Term M&M) [1]	$890
Subtotal Cost per Acre	**$7,890**
Administration (5%)	$395
Total Cost Per Acre	**$8,285**

Prepared by New Economics & Advisory, June 2016.
Source: See Technical Appendix for supporting calculations.
[1] Assumes that the Endowment Fund will generate interest earnings of 4%, enough to cover the cost of providing annual M&M monitoring in perpetuity.

4. Nexus, Fee Calculation, & Fee Act Findings – OWA In-Lieu Fee

This section documents the nexus for the study, calculates the proposed rates for the OWA In-Lieu Fee, and documents the findings of this Nexus Study consistent with the Mitigation Fee Act.

Nexus Requirements

In order to impose habitat conservation impact fees, this Nexus Study demonstrates that a reasonable relationship or "nexus" exists between new development that occurs within the County and the need to conserve OWA as a result of new development. More specifically, this Nexus Study presents the necessary findings in order to meet the procedural requirements of the Mitigation Fee Act, also known as AB 1600. The requirements are as follows:

1. Identify the purpose of the fee;
2. Identify the use to which the fee is to be put;
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 project on which the fee is imposed;
5. 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.

Step 1: Purpose of the Fee

The OWA In-Lieu Fee proposed by this Nexus Study is designed to fund mitigation of impacts to OWAs in the County through acquisition and conservation of similar types of OWAs elsewhere in the County.

The OWA In-Lieu Fee is intended to pay the full cost of acquiring, managing, and monitoring OWAs.

Step 2: Use of the Fee

The OWA In-Lieu Fee will be used to acquire OWA through direct property acquisition or acquisition of conservation easements; to conduct Initial M&M activities and Long-Term M&M activities designed to ensure conservation in perpetuity.

Step 3: Reasonable Relationship Between Fee Use & Development

The conservation of OWAs promotes the health, safety, and general welfare of El Dorado County by protecting significant historical heritage values, enhancing the beauty and complementing and strengthening zoning, subdivision and land use standards and

regulations, while at the same time recognizing individual rights to develop private property.

The General Plan identifies the following overarching objectives (County of El Dorado 2004) that relate to the relationship between the proposed fee and new development:

- To foster a rural quality of life;
- To sustain a quality environment;
- To conserve, protect, and manage the County's abundant natural resources for economic benefits now and for the future; and,
- To accomplish the retention of permanent open space/natural areas on a project-by-project bases through clustering.

The Conservation and Open Space Element further identifies the following Goals for biological resources (County of El Dorado 2004):

- Goal 7.4: Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.

The conservation of OWAs enhances the County's natural scenic beauty, sustains the long-term potential increase in property values which encourages quality development, maintains the area's original ecology, retains the original tempering effect of extreme temperatures, increases the attractiveness of the County to visitors, helps to reduce soil erosion, and increases the oxygen output of the area which is needed to combat air pollution.

The development of new residential and non-residential land uses in the County may impact existing OWAs. The proposed OWA In-Lieu Fee, charged according to the impact on OWA, provides a means for development to occur while also achieving the environmental goals and objectives stated in the County General Plan . The proposed fee will be used to acquire and conserve other OWAs in perpetuity, thereby furthering the County's overarching objectives and biological resources goal stated above.

A reasonable relationship exists between the need for the OWA In-Lieu Fee and new development that would pay the fee.

Step 4: Reasonable Relationship Between Conservation Need & Development

Each new development project that impacts OWAs triggers a need for conservation measures in order to implement the overarching objectives and biological goals of the County General Plan. Mitigation of impacts to OWAs can occur through replacement tree planting on- or off-site, offsite conservation, and/or payment of an OWA In-Lieu Fee. The proposed OWA In-Lieu Fee is designed to mitigate the impacts of removing OWA. The costs associated with the Acquisition, Initial M&M, and Long-Term M&M of OWAs are accounted for in the OWA In-Lieu Fee.

Step 5: Reasonable Relationship[10] Between Fee Amount & Mitigation Cost

The amount of the OWA In-Lieu Fee is proportional to the cost of mitigating impacts to OWAs by new development; the in-lieu fee paid by new development is calculated based on the the mitigation ratios set forth in the draft ORMP and the cost per acre to provide for OWA conservation, determined through an analysis of costs currently incurred by existing LCOs. Should new development choose the in-lieu fee option, the fee amount will be based on the scale of impacts and the mitigation ratio for that scale of impacts, as defined in the ORMP and the Oak Resources Conservation Ordinance.

Fee Calculation

This Nexus Study provides the basis upon which a new OWA In-Lieu Fee is calculated. **Figure 4.1** summarizes the detailed cost components, shown on a per-acre basis, associated with acquisition, Initial M&M, and Long-Term M&M of OWAs actively managed by the LCO. To this total cost, an administrative component of 5% is added to cover the cost of administering and updating the fee program, calculating total fee obligations for each development opting to pay the OWA In-Lieu Fee, collecting fee revenues, and transferring these revenues to one or more Oak Resources LCO(s).

4.1 ***Detailed OWA Cost Composition per Acre (2016$)***

Item	Amount per Acre
OWA Cost Components	
Acquisition	$4,400
Initial M&M (Years 1-5)	$2,600
Endowment (for Long Term M&M)	$890
Subtotal Cost	**$7,890**
Administration (5%)	$395
Total Cost	**$8,285**

Prepared by New Economics & Advisory, June 2016.

Figure 4.2 shows the resulting fee, according to the level of OWA Impacts, made by new development. These rates would be set uniformly within the draft ORMP boundary

[10] California State Code does not define "reasonable relationship" but it is certainly broader than the "proportionate benefit" requirement for assessments (California Government Code 36620-36630). Over time the phrase "reasonable relationship" has been interpreted by preparers of fee studies to mean that there is a logical connection between the purpose of the fee and the rate assigned to those paying the fee.

(delineated in **Figure 2.1** in **Section 2**), and would be charged per OWA acre impacted. As described previously, impacted OWAs will be identified in an ORTR prepared by a qualified professional retained by the Project Applicant during the development review process.

4.2 ***Oak Woodland Area In-Lieu Fee Rates***
2016$

Item	Oak Woodland Areas		
	0.01 - 50.0% Impact	50.01 - 75.0% Impact	75.01 - 100.0% Impact
	per acre		
Cost Per Acre	$8,285	$8,285	$8,285
Mitigation Ratio [1]	1.0 : 1	1.5 : 1	2.0 : 1
Total Fee Per Acre	**$8,285**	**$12,428**	**$16,570**

[1] Mitigation ratios established in the Draft ORMP (Section 2.2.2).
Prepared by New Economics & Advisory, June 2016.

Fee Calculation Example

For example, if a developer wanted to remove 60% of a 10-acre OWA by paying the OWA In-Lieu Fee, the fee would be calculated as follows:

1. Acres Impacted: 10 acres times 60% = 6 acres
2. Cost Per Acre = $8,285 per acre
3. Mitigation Ratio = 1.5 : 1.0
4. Mitigation Fee Per Acre (1.5 times $8,285) = $12,428
5. Fee = 6 acres times $12,428 per acre = $74,568 OWA In-Lieu Fee.

5. Costs to Replace IOTs

New development that impacts IOTs will have two options to mitigate impacts: plant replacement trees on- or offsite and/or pay an In-Lieu Fee.[11]. This section of the Nexus Study describes the costs associated with mitigation through an IOT In-Lieu Fee.

Conservation Overview

For individual IOTs, the in-lieu fee is based on a diameter inch-for-inch replacement approach. This approach accounts for costs associated with acquisition and planting, expressed on a "per 1 inch of trunk diameter" basis.

It is expected that the Oak Resources LCO(s) will incur one cost to acquire and plant replacement trees, and another cost to conduct management and monitoring during an Initial M&M period of seven (7) years. This time period is a requirement of the draft ORMP, consistent with state regulations (California Public Resources Code Section 20183.4). **Figure 5.1** provides examples of conservation activities during each of these stages.

[11] On- or off-site mitigation would require a conservation easement to ensure conservation in perpetuity.

5.1 *Typical Conservation Activities-- IOTs*
Acquisition, Management, and Monitoring

Acquisition/Planting	Initial M&M
Planting	Irrigation
Tree Acquisition	Weed Control
Due Diligence Surveys/Analyses	Staking
Aerial Photos	Mulching
	Minor Canopy Pruning
	Monitoring
	Removal of Irrigation or Protection Materials at the end of the Maintenance Period
	Installation of Above/Below Ground Protection Devices (cages, tubes, etc.)
	Pest and Disease Control (application of herbicide, fungicide, etc.)

Prepared by New Economics & Advisory, June 2016.
Sources: California Council of Land Trust website accessed May 2015; Land Trust Alliance website, accessed May 2015; New Economics internet research, interviews; and land conservation organization feedback, April-June 2015.

This Nexus Study assumes that IOT In-Lieu Fees will be used to plant replacement trees on properties owned and managed by the Oak Resources LCO(s); this assumption was developed in consultation with LCOs, whose staff confirmed that they only plant new trees on property they own, and not on property for which they only hold a CE.

As such, Long Term M&M costs for these replacement trees will be absorbed into the costs of managing and monitoring land acquired primarily for purposes of conserving OWAs. Therefore, no incremental Long-Term M&M cost component is included in the IOT In-Lieu Fee.

Acquisition and Planting (Year 0)

Dudek developed costs for purchasing and planting IOTs. The estimated cost for the equivalent of one inch of trunk diameter is a 1-gallon size native oak tree; the median price of 1-gallon oak trees was calculated from a survey of eight nurseries in El Dorado County and the surrounding region. Consistent with standard landscape/habitat restoration industry practices, this median price ($60) was then doubled to account for costs associated with planting (inclusive of labor and materials), as described in the draft

ORMP. The resulting per-inch individual native oak tree mitigation fee is $120.00, as shown in **Figure 5.2**

5.2 *IOT Tree Acquisition Price*
Local Nurseries (2016$)

Nursery	Location	Price
Nursery Purchase Prices [1]		
Intermountain Nursery	Prather	$9.95
Lu Restoration Nursery	Sheridan	$4.70
Urban Tree Farm	Fulton	$6.00
Cornflower Farms	Elk Grove	$10.87
Median Purchase Price per 1-gallon Tree (1/2 diameter inch)		**$7.98**
Estimated Acquisition Price per Diameter Inch		
Estimated Purchase Price per Diameter Inch [2]		$15.95
Estimated Cost for Installation [3]		$15.95
Estimated Acquisition Cost per Diameter Inch		**$31.90**

Prepared by New Economics & Advisory, June 2016.
Source: Dudek, June 2016.
[1] 1-gallon oak tree at local nurseries.
[2] This analysis assumes that a 1-gallon tree represent the equivalent of 1/2 diameter inch of tree trunk, so the median cost per tree is doubled to derive the cost per diameter inch of trunk.
[2] Doubling the tree acquisition price is a standard industry approach utilized to estimate total planting costs per diameter inch.

Initial M&M (Years 1-7)

Figure 5.3 shows the cost of conducting Initial M&M for IOTs on a per diameter-inch basis. Habitat Restoration Sciences, Inc. (HRS), a subsidiary of Dudek that provides native habitat restoration services in California, prepared a cost estimate for Initial M&M for IOTs based on a hypothetical planting scenario. The hypothetical scenario assumes a planting of 1,000 1-gallon oak trees (each tree representing one diameter inch of trunk), each with a planting radius of approximately 5 feet; this scale of planting requires approximately 1.80 acres. HRS applied its technical experience conducting tree establishment and maintenance to the planting scenario to estimate annual M&M costs during the first seven years. Because this analysis relies on a 1-gallon tree, which represents ½ diameter inch of trunk, the cost is doubled to reflect the cost of maintaining two trees instead of one for each diameter inch of trunk. The estimated

amount includes costs associated with ensuring that the replacement tree grows properly, irrigation, fencing/caging, pruning and pest/disease control (as listed in **Figure 4.1**) are some of the active management efforts undertaken during this stage.

5.3 ***IOT Initial M&M Cost Assumption***
2016$

Item	Per Acre Cost [1],[2]	Avg. Annual M&M [3]
IOT Initial M&M		
Year 1	$6,000	$10,800
Year 2	$5,500	$9,900
Year 3	$5,000	$9,000
Year 4	$4,500	$8,100
Year 5	$4,000	$7,200
Year 6	$3,500	$6,300
Year 7	$3,000	$5,400
Subtotal Costs (Yr 1-7)		$56,700
Cost Per Tree/Diameter Inch (Yr 1-7)		$56.70
Estimated IOT Initial M&M Cost Assumption		
Cost Per Diameter Inch Assuming 1-Gallon Tree (Yr 1-7) [4]		$113.40

Prepared by New Economics & Advisory, June 2016.
Source: Habitat Restoration Sciences, Inc., June 2015 and April 2016.
[1] Assumes a hypothetical planting of 1,000 oak trees (each tree representing one diameter inch). Assumes a radius of 5 feet around each planting location. Therefore the total site area is 1.80 acres; this calculation was made by HRS.
[2] If total area is less than one acre, unit cost may need to increase to account for overhead costs.
[3] Unit price per acre per year typically will not drop below $2,500 per acre.
[4] Each 1-gallon tree represents a one-half inch diameter of trunk, so two trees must be maintained for every diameter inch of trunk. Therefore, the maintenance cost per diameter inch is doubled to reflect the cost of maintaining two trees instead of one for each diameter inch of trunk.

Administration

As described in more detail in **Section 7** of this Nexus Study, the County will be responsible for administration of the Oak Resources Fees. Administrative duties will include the calculation and collection of the fees, tracking of deposits, preparation of required reports, performance of annual inflation adjustments, and periodic updates to the Oak Resources In-Lieu Fees Nexus Study. The County may also desire to track the

location of IOTs planted with In-Lieu Fee revenues; this effort is expected to require mapping services using Geographic Information Systems (GIS) or similar software. As such, the IOT In-Lieu Fee will include a 5% administrative cost for these administrative functions.

Total Costs

Figure 5.4 provides a summary of the total cost per acre to replace IOTs through an In-Lieu fee program. This rate includes Acquisition, Initial M&M, and Administration.

5.4 ***IOT Conservation Cost Components***
Per Diameter Inch (2016$)

Item	Amount per Diameter Inch
IOT Cost Components	
Acquisition	$31.90
Initial M&M (Years 1-7)	$113.40
Endowment (for Long Term M&M) [1]	N/A
Subtotal Cost	$145.30
Administration (5%)	$7.27
Cost per Diameter Inch	$152.57
Total Cost Per Diameter Inch (Rounded) [2]	**$153.00**

Prepared by New Economics & Advisory, June 2016.
Source: See Technical Appendix for supporting calculations.
[1] Replacement trees will be planted on land owned and managed by the land conservation organization also overseeing Oak Woodland Areas; Long-Term M&M costs are expected to be nominal and will be absorbed into the Oak Resource LCO's overall M&M costs.
[2] Total rounded to nearest whole dollar.

6. Nexus, Fee Calculation, and Fee Act Findings – In-Lieu Individual Oak Tree Fee

This section documents the nexus for the study, calculates the proposed rates for the IOT In-Lieu Fee, and documents the findings of this Nexus Study consistent with the Mitigation Fee Act.

Nexus Requirements

In order to impose habitat conservation impact fees, this Nexus Study demonstrates that a reasonable relationship or "nexus" exists between new development that occurs within the County and the need to conserve and replace IOTs as a result of new development. More specifically, this Nexus Study presents the necessary findings in order to meet the procedural requirements of the Mitigation Fee Act, also known as AB 1600. The requirements are as follows:

1. Identify the purpose of the fee;
2. Identify the use to which the fee is to be put;
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 project on which the fee is imposed;
5. 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.

Step 1: Purpose of the Fee

The IOT In-Lieu Fee proposed by this Nexus Study is designed to fund mitigation of impacts to IOTs in the draft ORMP boundaries through replacement planting elsewhere in the County.

The IOT In-Lieu Fee is intended to pay the full cost of tree acquisition, planting, and maintenance for a 7-year period.

Step 2: Use of the Fee

The IOT In-Lieu Fee will be used to acquire and plant individual replacement trees and perform M&M activities for a period of 7 years.

Step 3: Reasonable Relationship Between Fee Use & Development

The replacement of IOTs promotes the health, safety, and general welfare of El Dorado County by protecting significant historical heritage values, enhancing the beauty and

complementing and strengthening zoning, subdivision and land use standards and regulations, while at the same time recognizing individual rights to develop private property.

The replacement of IOTs enhances the County's natural scenic beauty, sustains the long-term potential increase in property values which encourages quality development, maintains the area's original ecology, retains the original tempering effect of extreme temperatures, increases the attractiveness of the County to visitors, helps to reduce soil erosion, and increases the oxygen output of the area which is needed to combat air pollution.

The General Plan identifies the following overarching objectives (County of El Dorado 2004) that relate to the relationship between the proposed fee and new development:

- To foster a rural quality of life;
- To sustain a quality environment;
- To conserve, protect, and manage the County's abundant natural resources for economic benefits now and for the future;
- To accomplish the retention of permanent open space/natural areas on a project-by-project bases through clustering;

The Conservation and Open Space Element further identifies the following Goal for biological resources (County of El Dorado 2004):

- Goal 7.4: Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.

The development of new residential and non-residential land uses in the County may result in a loss of existing IOTs. The proposed IOT In-Lieu Fee, charged according to the impact on IOTs, provides a means for development to occur while also achieving the environmental goals and objectives stated in the County General Plan. The proposed fee will be used to acquire and plant replacement trees and maintain them for a period of 7 years, thereby furthering the County's overararching objectives and biological resources goal stated above.

A reasonable relationship exists between the need for the IOT In-Lieu Fee and new development that would pay the fee.

Step 4: Reasonable Relationship Between Conservation Need & Development

Each new development project that impacts IOTs triggers a need for conservation measures in order to implement the overarching objectives and biological goals of the County General Plan. As established in the ORMP and Oak Resources Conservation Ordinance, mitigation of impacts to IOTs can occur through replacement tree planting on- or off-site and/or payment of an IOT In-Lieu Fee. The fee is designed to mitigate the impacts of removing Heritage Oak Trees or Native Oak Trees outside of OWAs. The costs associated with the acquisition and planting and maintenance for a period of 7 years is accounted for in the respective In-Lieu Fee program.

Step 5: Reasonable Relationship[12] Between Fee Amount & Mitigation Cost

The amount of the IOT In-Lieu Fee for impacts to IOTs is proportional to the cost of mitigating impacts to IOTs for non-exempt development activities; the in-lieu fee amount is calculated based on the the mitigation ratios set forth in the draft ORMP and Oak Resources Conservation Ordinance and the cost to meet said requirements. Should a project proponent for non-exempt activities choose the in-lieu fee option, the fee amount will be based on the scale of impacts and the mitigation ratio that scale of impacts.

The total fee for non-exempt activities is proportional to the scale of the impact based on the size (based on diameter inches) of the impacted tree(s). As explained previously, the fee is based on hypothetical scenario assuming a planting of 1,000 1-gallon oak trees, each with a planting radius of approximately 5 feet. HRS applied its technical experience conducting tree establishment and maintenance to the planting scenario to estimate annual M&M costs during the first seven years on a per-acre basis.

For example, a removed Native Oak Tree with a 10-inch trunk diameter would require mitigation for 10 diameter inches, based on the inch-for-inch replacement requirement in the draft ORMP. The IOT In-Lieu Fee assumes that a 1-gallon size replacement tree equals 1 inch in trunk diameter; therefore, mitigation for removal of a 10-inch native oak tree requires planting and maintenance of 10 1-gallon trees.

Fee Calculation

This Nexus Study provides the basis upon which a new IOT In-Lieu Fee is calculated. **Figure 6.1** summarizes the detailed cost components, shown on a per-diameter inch basis, associated with acquisition/planting and maintenance for 7 years undertaken by the Oak Resources LCO(s). To this total cost, an administrative component of 5% is added to cover the cost of administering and updating the fee program, calculating total fee obligations for each development opting to pay the IOT In-Lieu Fee, collecting fee revenues, and transferring these fee revenues to the Oak Resources LCO(s).

[12] California State Code does not define “reasonable relationship” but it is certainly broader than the “proportionate benefit” requirement for assessments (California Government Code 36620-36630). Over time “reasonable relationship” has been interpreted by preparers of fee studies to mean that there is a logical connection between the purpose of the fee and the rate assigned to those paying the fee.

6.1 *Detailed IOT Cost Composition*
2015$

Item	Amount per Diameter Inch
Cost Components	
Acquisition	$31.90
Initial M&M (Years 1-7)	$113.40
Endowment (for Long Term M&M) [1]	N/A
Subtotal Cost	$145.30
Administration (5%)	$7.27
Cost per Diameter Inch	$152.57
Total Cost (Rounded) [2]	**$153.00**

Prepared by New Economics & Advisory, June 2016.

[1] Replacement trees will be planted on land owned and managed by the land conservation organization also overseeing Oak Woodland Areas; Long-Term M&M costs are expected to be nominal and will be absorbed into the Oak Resource LCO's overall M&M costs.

[2] Total rounded to nearest whole dollar.

Figure 6.2 shows the resulting fee, according to the cost and mitigation ratio, made by new development, for Heritage Oak Trees compared to Native Oak Trees. These rates would be set Countywide within the draft ORMP boundary, and would be charged on a per IOT tree diameter inch impacted.

6.2 *IOT In-Lieu Fee Rates*
2015$

Item	Heritage Oak Trees	Native Oak Trees
	per diameter inch	
Cost Per Acre	$153	$153
Mitigation Ratio[1]	3 : 1	1 : 1
Total Fee Per Acre	**$459**	**$153**

[1] Mitigation ratios are established in the Draft ORMP (Section 2.3.2 Oak Tree Mitigation Standards).

Prepared by New Economics & Advisory, June 2016.

Fee Calculation Example

For example, if a developer wanted to remove one 50-inch diameter Heritage Oak Tree and one 10-inch Native Oak Tree, the IOT In-Lieu Fee would be calculated as follows:

Heritage Oak Tree In-Lieu Fee Calculation

1. Diameter Inches Impacted: 1 tree at 50 diameter inches = 50 diameter inches
2. Cost Per Diameter Inch = $153 per diameter inch
3. Mitigation Ratio: 3.0 to 1.0 diameter inch impacted
4. Fee = 50 diameter inches times $153 per acre times 3.0 per diameter inch ratio = $22,950 Heritage Oak Tree In-Lieu Fee

Native Oak Tree In-Lieu Fee Calculation

1. Diameter Inches Impacted: 1 tree at 10 diameter inches = 10 diameter inches
2. Cost Per Diameter Inch = $153 per diameter inch
3. Mitigation Ratio: 1.0 to 1.0 diameter inch impacted
4. Fee = 10 diameter inches times $153 per acre times 1.0 per diameter inch ratio = $1,530 Native Oak Tree In-Lieu Fee

Total IOT In-Lieu Fee: $22,950 Heritage Oak Tree In-Lieu Fee + $1,530 Native Oak Tree In-Lieu Fee = $24,480 Total IOT In-Lieu Fee.

7. Implementation & Administration

This concluding section of this Oak Resources Nexus Study provides an overview of implementation and administrative procedures. This section applies collectively to all Oak Resources In-Lieu Fees analyzed in this Nexus Study.

Adoption and Authorization

After review and consideration and having conducted a public hearing, the El Dorado County Board of Supervisors will consider adopting this Oak Resources In-Lieu Fee Nexus Study and the Oak Resources Conservation Ordinance establishing the Oak Resources In-Lieu Fees and authorizing collection of said fees. The fee will be effective 30 days following the El Dorado County Board of Supervisors final action of the adoption of the Nexus Study, and all ordinances and/or resolutions establishing or authorizing the fee(s).

Establishment of Fees

With respect to OWAs, this program applies to any land development project requiring a discretionary entitlement from the County that is subject to review under CEQA and which will have an impact on Oak Resources. With respect to IOTs, this program applies to any activity requiring a building permit or grading permit issued by El Dorado County and/or any action requiring discretionary development entitlements or approvals from El Dorado County, other than those activities identified in the Exemptions section. The Oak Resources In-Lieu Fees shall be charged on non-exempt development activities that impact Oak Resources; these impacts will be documented in an ORTR. Impacts occurring on either public or private property are subject to this program.

The Oak Resources Fees shall be calculated during the development review process or prior to grading permit issuance for projects not subject to development review. The fees shall be calculated based on impacts identified in an ORTR and will be consistent with the mitigation ratios described in **Section 1** of this Nexus Study.

Timing of Collection of Fees

Oak Resources In-Lieu Fees shall be collected prior to issuance of a grading or building permit, filing of a parcel or final map, or otherwise commencing with the development project.

The Oak Resources Fees shall be collected by the County's Community Development Agency, Development Services Division. The County shall maintain the account.

Exemptions

Removal of OWAs and IOTs are exempt from mitigation requirements, including participation in the Oak Resources In-Lieu Fees, for certain activities. These activities, documented in detail in Section 2 of the draft ORMP, include:

- Projects or actions occurring on lots of 1 acre or less allowing a single-family residence by right, and that cannot be further subdivided without a General Plan Amendment or Zone change;
- Actions taken pursuant to an approved Fire Safe Plan for existing structures or in accordance with defensible space maintenance requirements for existing structures in state responsibility areas (SRA) as identified in California Public Resources Code (PRC) Section 4291 (actions associated with Fire Safe Plans or defensible space areas for new or proposed development are not exempt);
- Actions taken to maintain safe operation of existing utility facilities in compliance with state regulations (PRC 4292-4293 and California Public Utilities Commission (CPUC) General Order 95) (actions associated with development of new utility facilities, including transmission or utility lines, are not exempt);
- Road widening and realignment projects necessary to increase capacity, protect public health, and improve safe movement of people and goods in existing public rights-of-way (as well as acquired rights-of-way necessary to complete the project) where the new alignment is dependent on an existing alignment (new proposed roads within the County Circulation Element and internal circulation roads within new or proposed development are *not* exempt);
- Affordable housing projects for lower income households, as defined pursuant to Section 50079.5 of the California Health and Safety Code, that are located within an urbanized area, or within a sphere of influence as defined pursuant to California Government Code §56076;
- Agricultural activities conducted for the purposes of producing or processing plant and animal products or the preparation of land for this purpose;
- Agricultural cultivation/operations, whether for personal or commercial purposes (excluding commercial firewood operations);
- Activities occurring on lands in Williamson Act Contracts or under Farmland Security Zone Programs;
- Actions taken during emergency firefighting operations or natural disasters (e.g., floods, landslides, avalanches) and associated post-fire or post-disaster remediation activities;
- Tree removal permitted under a Timber Harvest Plan approved by CAL FIRE;
- Native oak tree removal when the tree is dead, dying, or diseased, as documented in writing by a Certified Arborist or Registered Professional Forester;

- Native oak tree removal when a tree exhibits high failure potential with the potential to injure persons or damage property, as documented in writing by a Certified Arborist or Registered Professional Forester; or
- When a native oak tree, other than a Heritage Tree, is cut down on the owner's property for the owner's personal use.

Fee Rate Reductions for Affordable Housing Projects

The draft ORMP also provides for reductions to OWA mitigation for affordable housing projects that are not exempted as defined above. Specifically, development projects that propose a minimum of 10 percent of the dwelling units as income restricted affordable units, as defined by California Health and Safety Code §50052.5, 50053, and 50093, shall be granted a reduction in the amount of oak woodland that is required to be mitigated, as set forth below in **Figure 7.1**. This reduction for affordable housing project applies only to OWA impacts and does not apply to IOT impacts.

7.1 *Affordable Housing Mitigation Reduction*
ORMP

Affordable Housing Type (Household Income Level)	Percent Oak Woodland Mitigation Reduction (for portion of project that is income restricted)
Very Low	200%
Lower	100%
Moderate	50%

Source: Draft Oak Resource Management Plan, June 2016.

For example, a proposed project that contains 1,000 units will include 200 (or 20%) *moderate-income* units. The project's ORTR indicates an impact on 70% of existing OWAs. The developer chooses to pay the OWA In-Lieu Fee to meet the mitigation obligation. The rate reduction for affordable housing would be calculated as follows:

- **Step 1: Establish the Original Mitigation Ratio.** The Original Mitigation Ratio would be 1.50 to 1 for a 70% impact on OWAs.
- **Step 2: Identify the Portion of the Affordable Units.** Affordable housing constitutes 20% of the residential units.
- **Step 3: Identify the Affordable Housing Reduction Rate.** Moderate-income units qualify for a 50% reduction.
- **Step 4: Calculate the Mitigation Reduction Amount.** The Mitigation Reduction is calculated by multiplying the 50% moderate-income reduction times the 20% affordable housing share. 50% times 20% = 10% Mitigation Reduction Amount.
- **Step 5: Calculate the Adjusted Mitigation Rate**. The Adjusted Mitigation Obligation is: 1.50 minus 10% (0.15) = 1.35 Adjusted Mitigation Ratio.

Administration and Administrative Fee

The County Community Development Agency shall be responsible for administration of the Oak Resources Fees, including the calculation and collection of the fees, tracking of deposits, preparation of required reports, annual inflation adjustments, and periodic updates to the Oak Resources In-Lieu Fees Nexus Study. The County also intends to track the location of OWAs purchased with In-Lieu Fee revenues; this effort is expected to require mapping services using Geographic Information Systems (GIS) or similar software. As such, the County will retain the 5% administrative cost portion of the Fee described in this Nexus Study for these purposes.

It is the County's intent to work with one or more Oak Resources LCOs to acquire as well as manage and monitor OWAs, and acquire/plant as well as manage and monitor replacement Heritage Oak Trees, and Native Oak Trees. The County will transfer fee revenues (excluding the 5% administrative cost) to said LCO on a quarterly basis subject to County approval of acquisition, maintenance and monitoring actions.

Annual Inflation Adjustment

An annual adjustment for cost escalations influenced by changes in land values affecting acquisition, conservation easement values, as well as property tax obligations and organizational overhead costs (e.g. rent, wages, benefits, equipment, etc.) shall be applied to the Oak Resources Fees. The Oak Resources Fees shall be subject to an annual inflation fee that accounts for changes in acquisition/planting, Initial M&M, and Long-Term M&M costs.

OWA Fee Adjustment

OWA Acquisition Cost Component

The Acquisition Cost Component of the OWA fee is driven largely by land values within El Dorado County. Over time, land purchased for the express purpose of mitigation may develop a value that is different from land purchased for its development potential. This trend should be monitored over time. This Nexus Study initially recommends that the Acquisition Component of the OWA Fee be consistent with increases in assessed value for the County overall; future updates to the Nexus Study should revisit this measure to determine whether mitigation land purchases are changing at a different rate than assessed value countywide.

Consistent with the 2008 OWMP Fee Study, this Nexus Study recommends that the Acquisition Portion of the OWA In-Lieu Fee be adjusted annually by a three-year average change in assessed valuation countywide for all land uses or for vacant land containing OWAs. The County Assessor's Office can calculate this value each year.

OWA Initial M&M Cost Component

Initial M&M is influenced most heavily by salaries/wages, including staff and consultant costs. Because these costs are driven primarily by staff time, this fee component should

be adjusted based on labor costs. Consistent with the 2008 OWMP Fee Study, this Nexus Study recommends that the Initial M&M Portion of the OWA In-Lieu Fee be adjusted annually based on changes in wages for Forest and Conservation workers (occupation code 45-4011) in California. These wage rates currently track the pay period including the 12th day of May or November, and are published in May of each year (containing data from the previous year). The data can be found here: http://www.bls.gov/oes/tables.htm.

OWA Endowment Cost Component (OWA Long-Term M&M)

Long-Term M&M is influenced by two variables: the annual cost of M&M and the interest earnings rate on the Endowment Fund. Both of these variables should be tracked and updated. On an annual basis, the Endowment Component should be adjusted based on any changes in annual M&M costs. Because these costs are driven primarily by staff time, this fee should be adjusted based on labor costs, similar to Initial M&M.

However, changes in annual M&M do not have a 1:1 impact on the Endowment; if, for example, annual M&M costs increase by 10%, the Endowment Fee would need to increase about 12% in order for the Endowment to remain self-sustaining.

As a result, this Nexus Study recommends that the Endowment Cost component be increased annually based on labor wage changes and include an additional 2 percent adjustment for every 10 percent change in wages. **Figure 7.2** provides an example of how this adjustment calculation would work.

7.2 ***Endowment Component Fee Adjustment***
OWA In-Lieu Fee

Item	Formula	Oak Woodland Areas 0.01 - 50.0% Impact	75.0% Impact	100.0% Impact
Existing Endowment Fee Component	A	$890	$890	$890
Change In Labor Costs (example)	B	4.0%	4.0%	4.0%
Additional Adjustment per 10%	C = 2% * (B/10%)	0.8%	0.8%	0.8%
Total Adjustment (%)	D = B + C	4.8%	4.8%	4.8%
Total Adjustment (amount)	E = A* D	$43	$43	$43
Total Adjustment Cost Per Acre [1]	**F = A + E**	**$933**	**$933**	**$933**

Prepared by New Economics & Advisory, June 2016.
[1] Total rounded to nearest whole dollar.

OWA Inflation Adjustment Summary

The OWA In-Lieu Fee would be adjusted annually as follows:

1. Adjust Acquisition Cost Component
2. Adjust Initial M&M Cost Component
3. Adjust Long-Term M&M Cost Component

4. Recalculate Total Cost per Acre (including 5% Administrative Fee component)
5. Recalculate Fees based on Mitigation Ratios

IOT Fee Adjustment

IOT Acquisition/Planting Cost Component

This component of the fee was developed by doubling the identified cost of purchasing a new 1-gallon oak tree; as described in the draft ORMP, this approach reflects a standard industry approach to account for labor costs associated with tree planting. Because acquisition is the primary driver, County staff could check on the price from existing nurseries and recalculate the average cost each year.

IOT Initial M&M Cost Component

This component of the IOT In-Lieu Fee appears to be largely driven by labor costs. This Nexus Study recommends that the Initial M&M Portion of the IOT In-Lieu Fee be adjusted annually based on changes in wages for Forest and Conservation workers (occupation code 45-4011) in California. These wage rates currently track the pay period including the 12th day of May or November, and are published in May of each year (containing data from the previous year). The data can be found here: http://www.bls.gov/oes/tables.htm.

IOT Inflation Adjustment Summary

The IOT In-Lieu Fee would be adjusted annually as follows:

1. Adjust Acquisition/Planting Cost Component based on changes in the cost for one 1-gallon oak tree at local nurseries.
2. Adjust Initial M&M Cost Component based on changes in labor wages.
3. Recalculate Total Cost per Acre (including 5% Administrative Fee component)
4. Recalculate Fees based on Mitigation Ratios

Annual Findings/Accounting

The Community Development Agency shall prepare, once each fiscal year for the Board of Supervisors, a report of any portion of Oak Woodland Resources Fees remaining unexpended or uncommitted five or more years after deposit of the Fees, identifying the purpose to which the Fees are to be put, and demonstrating a reasonable relationship between the Fees and the purpose for which they were charged.

Refund of Unexpended Revenues

Except as provided by County Code, the County shall refund to the then current record owner or owners of each unit of development on a prorated basis the unexpended or uncommitted portion of the Oak Resources Fees, and any interest accrued thereon, for which need cannot be demonstrated.

Such refund of unexpended or uncommitted revenues may be made by direct payment from the applicable trust fund, by providing a temporary suspension of fees, or by any other means consistent with the intent of Government Code Section 66001.

Reallocation of Remaining Revenues

If the administrative costs of refunding unexpended or uncommitted revenues exceed the amount to be refunded, the County, after a public hearing, notice of which has been published under Government Code Section 6061 and posted in three prominent places within the area of the development project, may determine that the revenues shall be allocated for some other purpose for which fees are collected subject to Section 66000 of the Government Code.

Other Periodic Reviews and 5-Year Updates

As El Dorado County's Oak Resources In-Lieu Fees are implemented, the County will be able to track actual costs related to direct acquisition, conservation easements, overhead, wages, and management and monitoring costs. As such, this Nexus Study should be considered a living document that will need to be updated as new information becomes available and key assumptions can be appropriately refined. Periodically, the real estate market and broader economy undergoes more dramatic changes in land, and/or construction labor costs. The County may conduct additional periodic review at any time to determine if costs and/or fees require further adjustments. These periodic and/or 5-year update reviews could include changes to the following assumptions:

- Land acquisition values for mitigation land
- Conservation Easement values for mitigation land
- The proportion of Conservation Easements versus direct acquisition of conservation land
- Initial Annual M&M costs
- Long-Term Annual M&M costs
- Endowment interest earnings rate
- Annual adjustment procedures and assumptions
- IOT acquisition and planting costs

Beginning with the fifth fiscal year following the first deposit into the fee account or fund, and every five years thereafter, El Dorado County is required to make certain findings pertaining to unexpended balances. The required findings include:

1. Identifying the purpose for which the fee is to be used.
2. Demonstrating a reasonable relationship between the fee and its purported purpose.
3. All sources and amounts of funding anticipated to complete financing in incomplete plan area improvements.
4. Recalculate/recalculate annual adjustment factor.

5. For any unexpended or uncommitted revenues El Dorado County cannot demonstrate a need based on the four findings described above, El Dorado County must refund such revenues, unless the administrative costs exceed the amount of the refund.

Appendix A: Supporting Calculations for OWA Conservation

A1 *Individual Vacant Land Comparables*

El Dorado County, 2004-2014 (Nominal Dollars)

APN		Subdivision/Tract	Oak Woodland ID [1]	Zoning	Total Acres [1]	Oak Woodland Areas OWA Acres	Oak Woodland Areas % of Total Acres	Sale Date	Sale Price	Sales Price Per Acre
RE-10 Zoning										
046-720-06-100	[2]	River Pines Est. #4	7	RE-10	22.24	0.223720	1.01%	8/18/2004	$249,950	$11,239
046-720-11-100		River Pines Est. #4	7	RE-10	70.85	60.022561	84.72%	6/29/2012	$145,000	$2,047
046-720-06-100	[2]	River Pines Est. #4	7	RE-10	22.24	0.223720	1.01%	1/8/2014	$165,000	$7,419
104-481-07-100		Pilot Hill Crossing	19	RE-10	12.55	0.000012	0.00%	7/12/2012	$50,000	$3,984
046-710-19-100		River Pines Est. #3	6	RE-10	13.59	0.000115	0.00%	5/21/2013	$125,000	$9,198
046-720-04-100		River Pines Est. #4	6	RE-10	32.96	0.000148	0.00%	8/14/2007	$385,000	$11,681
Weighted Average										$6,421
RE-2 Zoning										
092-301-06-100	[2]	Golden West Par #5	9	R2A	2.88	0.000001	0.00%	4/30/2004	$185,000	$64,256
092-301-06-100	[2]	Golden West Par #5	9	R2A	2.88	0.000001	0.00%	5/25/2005	$265,000	$92,042
092-301-06-100	[2]	Golden West Par #5	9	R2A	2.88	0.000001	0.00%	2/6/2008	$226,200	$78,565
092-293-11-100		Golden West Par #5	9	R2A	2.51	0.000024	0.00%	7/23/2014	$90,000	$35,796
Weighted Average										$68,708

Prepared by New Economics & Advisory, June 2016.

[1] Oak Woodland ID identifies woodland areas that cross a parcel to identify all parcels within the same cluster area.

[1] Acres are calculated from GIS basemap polygons or property data collected from recorded maps or other means.

[2] Parcel has been bought and sold multiple times.

Source: El Dorado County staff, March 2015.

A2.1 *American River Conservancy Recent Direct Land Acquisitions*
2013-2015 (Nominal Dollars)

Item	El Dorado Ranch Amount	El Dorado Ranch Per Acre	El Dorado Ranch Amount	El Dorado Ranch Per Acre	Pending (Sierra Crest) Property Amount	Pending (Sierra Crest) Property Per Acre	Cronan Ranch Amount	Cronan Ranch Per Acre	Current Estimate: Sierra Hills Area Per Acre
Acres	1,059		1,080		10,000		NA		
Land Acquisitions	2013$		2014$		2015$			2001$	
Purchase Price	$4,800,000		$4,995,000		$10,230,000		NA		
Other Costs	N/A		$205,000	[1]					
Subtotal Land Acquisitions	$4,800,000	$4,533	$5,200,000	$4,815	$10,230,000	$1,023	NA	$6,107	$5,000
Average Applied in This Analysis [2]									$5,400

Prepared by New Economics & Advisory, June 2016.

Source: ARC Staff, June 2015.

[1] Amount represents a donation made by the seller.

[2] A weighted average calculation would not be appropriate for ARC because a large recent purchase was made that would skew the result. Therefore, New Economics applied a straight average calculation to derive an average for this organization. Figure rounded to nearest hundred dollars.

A2.2 *American River Conservancy Recent Conservation Easements*
2001$

Item	Garibaldi Ranch Amount	Garibaldi Ranch Per Acre	Current Estimate of CE as a % of Acq. Price
Acres	1,178		
Conservation Easements	2001$		
Purchase Price	$1,767,123		
Other Costs (Cont. to Endowment)	$100,000	*CE*	
Subtotal Conservation Easements	$1,867,123	$1,585	50% [1]
Value Used in This Analysis			

Prepared by New Economics & Advisory, June 2016.

Source: ARC staff, June 2015.

[1] ARC staff reports that CEs typically cost about half as much as direct acquisition. The CE value should be associated with the value of grazing and/or tree harvesting, which is much lower than 50% and would result in a CE that is around 75-80% of gross land value. However, many CE parcels are less desirable to begin with or have development restrictions already, thus lowering the overall value.

A2.3 ARC M&M Costs
2016$

Expenditure	Cost per Acre [1]
Management & Monitoring	$40.00

Prepared by New Economics & Advisory, April 2016.

[1] Range of $35-40 per acre provided by ARC staff. Reflects average cost for undeveloped oak woodland of a ranch size (1,000 acres+) and includes 15-20% overhead costs. Actual M&M costs vary and can be more expensive for smaller properties and/or properties that are in urban areas and/or have recreational access. Cost range expressed in 2015$; because the incremental increase to reflect 2016$ is not enough to increase the amount remains the same.

Source: ARC staff, June 2015.

A3.1 *Placer Land Trust Recent Property Acquisitions*
2010-2012 (Nominal Dollars)

	Outman Big Hill		Bruin Ranch/Harvego	
Expenditure	Amount	Per Acre	Amount	Per Acre
Recent Land Acquisitions	2012$		2010$	
Acres	80		1,773	1,853
Purchase Price	$475,000	$5,938	$9,500,000	$5,358
Legal Fees	$1,100	$14	N/A	N/A
Appraisal	$5,303	$66	N/A	N/A
Title Insurance & Escrow Fees	$684	$9	$1,482	$1
Staff & Admin	$10,363	$130	$250,482	$141
Subtotal Recent Land Acquisitions	$492,450	$6,156	$9,751,964	$5,500
Rounded Weighted Average Recent Land Acquisitions				$5,500
Stewardship Fund Contribution			2010$	
Acres			1,773	
Stewardship Contribution			$500,000	
Subtotal Stewardship			$500,000	$282
Endowment Contribution			2010$	
Acres			1,773	
Endowment Contribution			$25,000	
Legal Funds			N/A	
Subtotal Endowment			$25,000	$14

Prepared by New Economics & Advisory, June 2016.

Source: Placer Land Trust staff, April-May 2015.

A3.2 *Placer Land Trust Recent Conservation Easements & Contributions*
2008-2015 (Nominal Dollars)

Expenditure	Miner's Ravine Preserve Amount	Miner's Ravine Preserve Per Acre	Oest Ranch Lake Clementine Preserve Amount	Oest Ranch Lake Clementine Preserve Per Acre	Oest Ranch Cold Springs Preserve Amount	Oest Ranch Cold Springs Preserve Per Acre	Big Gun Preserve [1] Amount	Big Gun Preserve [1] Per Acre	Wakamatsu Tea & Silk Colony Amount	Wakamatsu Tea & Silk Colony Per Acre	Rounded Weighted Avg
Acres	26		350		158		52		272		
Conservation Easements											
Purchase Price	$0 [2]		$894,542		$405,458		$0 [2]		$0 [2]		
Other Costs	$0		N/A		N/A		$30,000 [3]		$15,000	$55	
Subtotal Conservation Easements	$0	$0	$894,542	$2,556	$405,458	$2,566	$30,000	$577	$15,000	$55	$1,600 [4]
Stewardship Fund Contribution [5]											
Stewardship Contribution	$200,000		$194,542		$105,458		$5,000 [6]				
Subtotal Stewardship	$200,000	$7,692	$194,542	$556	$105,458	$667	$5,000	$96			
Rounded Weighted Average								$4,200			
Total Cost	$200,000	$7,692	$1,089,084	$3,112	$510,916	$3,234	$663,308	$12,756	$15,000	$55	
Endowment Contribution											
Endowment Contribution							$598,308 [7]				
Legal Funds							$30,000 [8]				
Subtotal Endowment							$628,308	$12,083			
Average Conservation Easement as a % of Average Acquisition										29%	

Prepared by New Economics & Advisory, June 2016.

Source: Placer Land Trust staff, April-May 2015.

[1] Westervelt Ecological Services (WES) is the land owner of this preserve and PLT is the conservation easement holder and fiscal agent.

[2] Donated.

[3] Includes $15,000 for legal expenses and $15,000 for mitigation contract.

[4] Weighted average includes donated properties.

[5] The Stewardship fund is utilized similarly as an Endowment Fund (to fund long-term M&M) but is not technically restricted in the same manner as an Endowment Fund. However, this price is included in the total "cost" of acquisition because the purchase price was, in most cases, reduced to allow for the contribution to the Stewardship Fund.

[6] PLT receives $5,000 per year until the endowment is fully funded. Total expected amount is unknown at this time.

[7] PLT will receive this endowment when fully funded once credits are sold. This is expected to take several years because this contribution is a factor of income associated with the sale of credits. It is excluded from the total acquisition cost figure.

[8] PLT received $15,000 for legal defense and $15,000 to enter into mitigation contract with WES.

A3.3 *Placer Land Trust Estimated M&M costs*
2016$

Expenditure	Total Cost	Metric	Acres	Cost Per Acre
Annual Management & Monitoring Examples (2013$)				
Outman Preserve	$2,375	For entire property.	80	$29.69
Harvego Reserve/Bruin Ranch	$60,000	Annual M&M estimate.	1,773	$33.84
Wakamatsu Tea & Silk Colony	$10,000	Annual M&M estimate.	272	$36.76
Big Gun Preserve	$2,500	$2,000 -$3,000 annually.	52	$48.08
Weighted Average Cost				$34.39
Other Annual Costs (2013$)				
Overhead	15%	Typically applied to M&M contract costs. Applied to M&M Weighted Average Cost.		$5.16
Field Equipment	$5,000	Per year for Harvego Reserve.	1,773	$2.82
Periodic Surveys, Aerial Photos	N/A	Not specifically performed yet on Oak Woodland properties.		N/A
Subtotal Other Annual Costs				$7.98
Subtotal Annual Management & Monitoring (2013$)				$42.37
Inflated to 2016$				$51.08

Prepared by New Economics & Advisory, June 2016.
Source: PLT Staff, April - June 2015.

A4 *Placer County Conservation Plan (PCCP) Projected Costs*

2016$

Expenditure	Amount	Metric	Cost Per Acre
One-Time Activities (Year 0) (2013$) [1]			
County Field Facilities Contribution [2]	$500,000	Spread over 48,250 acres at end of 50-years.	$10.36
Oak Woodland Fuel Management	$1,800	Initial One-Time Cost per acre.	$1,800.00
Maintaining New Plantings [3]	$20,000	per 100-acre project over a 3-yr. period	$200.00
Subtotal One-Time Activities			$2,010.36
Inflated to 2016$			$2,423.61
Annual Management & Monitoring (2013$)			
Mgmt. Equip. & Materials	$3,000	Cost per 1,000 acres.	$3.00
On-going Site Maintenance	$10,000	Cost per 1,000 acres.	$10.00
Wildlife Management	$1,000	Cost per 1,000 acres.	$1.00
Oak Woodland Fuel Management	$1,000	Interval treatment every 5 years ($1,000 every 5 years per 1,000 acres).	$0.20
Field Facilities Maint. & Utilities	$10,000	Annual cost spread over 48,250 acres.	$0.21
Staffing Cost	$50,000	(1/3-1/2 time position)	$1.04
Reserve Mgmt. Plan Updates	$40,000	Every 5 years (2 total plans)	$0.17
Subtotal Annual Management & Monitoring			$15.61
Inflated to 2016$			$18.82
Other Data Points			
Case Study Restoration Costs [3]	$43,000	per 100-acre project	$430.00
Total Estimated Cost over 50-yr permit period		Cost estimate ranges from $3,000 to $30,000 per acre	$13,500

Prepared by New Economics & Advisory, June 2016.

Source: Woodland Restoration Potential: Placer County Conservation Plan, Richard R. Harris, Ph.D., February 2013.

[1] Reflects cost of one-time activities conducted shortly after undertaking management and monitoring responsibilities.

[2] This estimated cost is currently anticipated by Placer County for purposes of developing the Placer County Conservation Plan (PCCP). New Economics has integrated this cost into Initial M&M.

[3] From Attachment A of PPCP Woodland Restoration Report. Estimated Oak Woodland Restoration Notes by Riley Swift.

A5.1 *Sempervirens Fund Recent Acquisitions*
2012-2014 (Nominal Dollars)

Expenditure	Amount	Acres	Cost per Acre
Recent Land Acquisitions	2012		
Gallaway	$378,000	89	$4,247
	2013		
Butano & Waterman Creek	$870,000	80	$10,875
Lachnbrauch	$500,000	76	$6,579
Redwood Meadows	$525,000	151	$3,477
	2014		
Van Kempen	$650,000	33	$19,697
Weighted Average Acquisitions			$6,814
Related Acquisition Costs [1]	$838,885	429	$2,073
Subtotal Recent Land Acquisitions			$8,886
Recent Conservation Easements	2013$		
Redwood Meadows	$525,000	151	$3,477
Average Conservation Easement as a % of Average Acquisition [2]			56%

Prepared by New Economics & Advisory, June 2016.

Source: Sempervirens Fund Audited Financial Statements, June 30, 2014, and staff.

[1] Reflects 70% of General and Administration Costs from Financial Statement spread across 398 acres acquired in the same year to determine per-acre amount.

[2] Reflects 2013$ land acquisitions and conservation easements.

A5.2 *Sempervirens Fund M&M Trends*
2016$

Expenditure	Financial Statement Ending 06/30/2014 Stewardship	Total General & Admin	General & Admin Portion [1]	Total Cost	Metric	Cost per Acre [2]
Annual Management & Monitoring (2014$)						
Salaries	$99,223	$219,309	$65,793	$165,016	Lump Sum	$15.40
Payroll Taxes & Benefits	$20,552	$43,097	$12,929	$33,481	Lump Sum	$3.13
Other Outside Services	$86,039	$21,957	$6,587	$92,626	Lump Sum	$8.65
IT Services	$4,509	$11,070	$3,321	$7,830	Lump Sum	$0.73
Office Expenses	$5,622	$16,823	$5,047	$10,669	Lump Sum	$1.00
Occupancy Expenses	$16,037	$35,763	$10,729	$26,766	Lump Sum	$2.50
Printing, Postage & Direct Mail	$2,323	$12,418	$3,725	$6,048	Lump Sum	$0.56
Legal and Accounting	$1,273	$36,121	$10,836	$12,109	Lump Sum	$1.13
Insurance	$808	$26,381	$7,914	$8,722	Lump Sum	$0.81
Travel, Training, Meetings & Ent.	$5,788	$16,771	$5,031	$10,819	Lump Sum	$1.01
Government Fees	$183	$549	$165	$348	Lump Sum	$0.03
Subtotal Annual Management & Monitoring						$34.95
Inflated to 2016$						$41.19

Prepared by New Economics & Advisory, June 2016.

[1] Stewardship Costs account for approximately 30% of Total Annual Costs (net of Admin). This analysis applies 30% of General and Administrative costs as a preliminary estimate of proportionate administrative costs. Subject to further refinement.

[2] Costs are spread over 10,713 acres of redwood forests and forest land actively managed by Sempervirens.

Source: Sempervirens Fund Audited Financial Statements, June 30, 2014, and staff.

A6 *Sacramento Tree Foundation M&M Trends*

2016$

Expenditure	Financial Statement Ending 06/30/2013 Mitigation Amount	Total Gen. & Admin.	Adj. Gen. & Admin. [1]	Total Cost	Metric	Cost per Acre [2]
Annual Management & Monitoring (2013$)						
Trees, Materials & Land Use Fees	$6,140	$2,116	$275	$6,415	Lump Sum	$214
Salaries, Benefits & Taxes	$193,847	$141,376	$18,379	$212,226	Lump Sum	$7,074
Professional Services	$3,132	$21,427	$2,786	$5,918	Lump Sum	$197
Marketing	$220	$2,550	$332	$552	Lump Sum	$18
Rent & Utilities	$11,513	$25,602	$3,328	$14,841	Lump Sum	$495
Vehicles	$15,787	$159	$21	$15,808	Lump Sum	$527
Depreciation	$7,087	$5,169	$672	$7,759	Lump Sum	$259
Computer Services	$1,433	$2,577	$335	$1,768	Lump Sum	$59
Equipment Costs	$6,061	$5,179	$673	$6,734	Lump Sum	$224
Postage, Freight & Printing	$923	$2,408	$313	$1,236	Lump Sum	$41
Meeting & Conferences	$570	$10,970	$1,426	$1,996	Lump Sum	$67
Insurance	$856	$640	$83	$939	Lump Sum	$31
Office Supplies	$638	$930	$121	$759	Lump Sum	$25
Staff Development	$840	$3,028	$394	$1,234	Lump Sum	$41
Miscellaneous	$551	$1,920	$250	$801	Lump Sum	$27
Subtotal Annual Management & Monitoring				$226,051		$9,299
Inflated to 2016$						$11,211

Prepared by New Economics & Advisory, June 2016.

[1] Amount includes Mitigation Program Costs and 13% of Administrative Costs as a preliminary estimate of proportionate administrative costs. Subject to further refinement.

[2] In 2014, STF planted and cared for 4,450 trees. At about 150 trees per acre, STF estimates 30 acres of land under management.

Source: Sacramento Tree Foundation Financial Statements, June 30, 2013.

A7.1 *Sierra Foothill Conservancy Recent Direct Land Acquisitions*
2012 (Nominal Dollars)

Item	Martin Preserve		Miller Preserve	
	Amount [1]	Amount per Acre	Amount	Amount per Acre
Recent Land Acquisitions	2012$		2012$	
Acres	280		2,011	2,291
Purchase Price	$1,021,100	$3,647	$1,230,000	$612
Subtotal Recent Land Acquisitions		$3,647		$612
Weighted Average Recent Land Acquisitions				$1,000

Prepared by New Economics & Advisory, June 2016.

Sources: Consolidated Financial Statements and Additional Information for FY 2012/13 and 2011/12, and Sierra Foothill Conservancy staff.

[1] This transaction also include $280,507 in Stewardship Fund contribution; however, this amount is excluded because it is intended to fund M&M.

A7.2 SFC - Recent Easements & Contributions
2008-2014 (Nominal Dollars)

Item	2008-2014 Amount	Acres	Per Acre
Conservation Easements (CE)		*2008*	
Bohna	$1,000,000	840	$1,190
Trabucco	$300,000	524	$573
		2012	
San Joaquin River Corridor	$820,000	1,390	$590
Wild Life Conservation Board	$280,000	680	$412
		2010	
Millar Ranch	$1,850,000	2,990	$619
		2011	
Pt. Millerton Ranch	$125,000	200	$625
		2014	
Hendrick	$440,000	324	$1,358
		2012$	
Martin Preserve-- Stewardship Fund Contribution Only	$280,507	280	$1,002
Rounded Weighted Average Recent CE Cost			$700
Average Conservation Easement as a % of Average Acquisition [1]			70%

Prepared by New Economics & Advisory, June 2016.

[1] Based on 2013$ land acquisitions and rounded weighted average of conservation easements (2008-2014).

Sources: Consolidated Financial Statements and Additional Information for FY 2012/13; and Sierra Foothill Conservancy staff, May 2015.

A7.3 *Sierra Foothill Conservancy M&M Trends*

2016$

Expenditure	Financial Statement Ending 06/30/2013 Program Services	General & Admin.	Total Cost [1]	Metric	Cost per Acre [2]
Management & Maintenance (2013$)					
Management Fee	N/A	$27,635	$27,635	Lump Sum	$4.26
Outside Services	$62,699	N/A	$62,699	Lump Sum	$9.67
Repairs & Maintenance	N/A	$19,842	$19,842	Lump Sum	$3.06
Salaries & Wages	$228,654	$55,619	$284,273	Lump Sum	$43.86
Payroll Taxes	$22,177	$5,394	$27,571	Lump Sum	$4.25
Employee Benefits	$5,304	$1,290	$6,594	Lump Sum	$1.02
Advertising & Promotions	N/A	$942	$942	Lump Sum	$0.15
Auto Expenses	$12,325	$8,084	$20,409	Lump Sum	$3.15
Bank & Finance Charges	N/A	$1,936	$1,936	Lump Sum	$0.30
Conference Expenses	$422	$3,603	$4,025	Lump Sum	$0.62
Dues & Subscriptions	N/A	$6,373	$6,373	Lump Sum	$0.98
Insurance	$3,775	$24,198	$27,973	Lump Sum	$4.32
Interest	N/A	$20,179	$20,179	Lump Sum	$3.11
Loss on Disposition of Assets	N/A	$4,979	$4,979	Lump Sum	$0.77
Member Events	$1,242	N/A	$1,242	Lump Sum	$0.19
Miscellaneous	$260	$3,517	$3,777	Lump Sum	$0.58
Office Expenses	$4,004	$6,369	$10,373	Lump Sum	$1.60
Postage & Delivery	$282	$1,314	$1,596	Lump Sum	$0.25
Printing & Copying	$3,315	$863	$4,178	Lump Sum	$0.64
Professional Fees	$30,634	$8,459	$39,093	Lump Sum	$6.03
Property Taxes	$9,282	N/A	$9,282	Lump Sum	$1.43
Rent & Related	$15,226	$3,704	$18,930	Lump Sum	$2.92
Taxes & Licenses	N/A	$232	$232	Lump Sum	$0.04
Travel	$964	$2,322	$3,286	Lump Sum	$0.51
Utilities	$13,288	$3,232	$16,520	Lump Sum	$2.55
Subtotal Management & Monitoring			$623,939		$96.27
Inflated to 2016$					$116.06

Prepared by New Economics & Advisory, June 2016.

[1] Figures include costs associated with Program Services and General & Administration.

[2] SFC actively manages only the land owned in fee title. Costs are spread over 6,481 acres of nature preserves actively managed by SFC.

Source: Consolidated Financial Statements and Additional Information for FY 2012/13 and 2011/12, and SFC staff.

A8.1 *Save the Redwoods League Recent Acquisitions*
2012-2014 (Nominal Dollars)

Expenditure	Amount	Cost per Acre	Amount	Cost per Acre
Recent Land Acquisitions	2013$		2014$	
Acres	125		33	158
Purchase Price	$2,000,000	$16,000	$650,000	$19,697
Weighted Average Cost				$16,772
Recent Conservation Easements (CE)	2014$		2012$	
Acres	22,986		378	
Purchase Price	$16,900,000	$735	$300,000 [1]	$794
Appraisals & Environmental [2]	$364,362	$16	$310,745	$822
Legal Fees [2]	$16,435	$1	$113,511	$300
Subtotal CE Acquisition		$752		$1,916
Weighted Average Cost				$771
Average Conservation Easement as a % of Average Acquisition Cost				5%

Prepared by New Economics & Advisory, June 2016.

[1] Donation.

[2] New Economics assumed that these costs, included in both Program Services and General and Administrative Cost categories were predominantly associated with acquisition activities. Subject to further refinement pending additional feedback from SRL staff.

Sources: Save the Redwoods League Financial Statements, March 31, 2014 and 2013; Save the Redwoods League 2014 Annual Report, and Save the Redwoods League staff.

A8.2 *Save the Redwoods League M&M Trends*

2016$

Expenditure	Financial Statements 03/14/2014 Program Services	Total General & Admin	Adjusted General & Admin [1]	Total Cost [1]	Metric	Cost per Acre [2]
Management & Monitoring (2014$)						
Other Project Costs	$353,504		N/A	$353,504	Lump Sum	$24.46
Equip. Rental & Maint.	$7,094	$6,743	$4,720	$11,814	Lump Sum	$0.82
Salaries & Benefits	$1,658,517	$837,483	$586,238	$2,244,755	Lump Sum	$155.30
Payroll taxes	$103,922	$52,476	$36,733	$140,655	Lump Sum	$9.73
Printing & Publications	$121,945	$11,909	$8,336	$130,281	Lump Sum	$9.01
Services & Fees	$110,183	$299,548	$209,684	$319,867	Lump Sum	$22.13
Occupancy	$168,770	$92,539	$64,777	$233,547	Lump Sum	$16.16
Consultants	$240,281	N/A	N/A	$240,281	Lump Sum	$16.62
Conferences and Meeting:	$53,657	$43,430	$30,401	$84,058	Lump Sum	$5.82
Travel	$62,009	$25,189	$17,632	$79,641	Lump Sum	$5.51
Investment Fees	N/A	$137,153	$96,007	$0	Lump Sum	$0.00
Miscellaneous Expenses	$29,746	$30,665	$21,466	$51,212	Lump Sum	$3.54
Accounting Fees	N/A	$49,715	$34,801	$34,801	Lump Sum	$2.41
Postage & Shipping	$9,616	$21,297	$14,908	$24,524	Lump Sum	$1.70
Furniture & Equipment	$18,669	$10,980	$7,686	$26,355	Lump Sum	$1.82
Insurance	$18,867	$10,345	$7,242	$26,109	Lump Sum	$1.81
Supplies	$15,822	$6,206	$4,344	$20,166	Lump Sum	$1.40
Telephone	$12,482	$7,627	$5,339	$17,821	Lump Sum	$1.23
Subtotal Management & Monitoring						$279.47
Inflated to 2016$						$314.96

Prepared by New Economics & Advisory, June 2016.

[1] Amount includes Program Services Costs and 70% of General and Administrative Costs as a preliminary estimate of proportionate administrative costs. Subject to further refinement.

[2] Cost are spread over 14,454 acres of forests and surrounding land actively managed by SRL.

Source: Save the Redwoods League Financial Statements, March 31, 2014; Save the Redwoods League 2014 Annual Report; and SRL staff.

A9.1 *Sacramento Valley Conservancy Recent Acquisitions*

Deer Creek Hills (2003$)

Expenditure	Amount	Cost per Acre
Recent Land Acquisition	2003$	
Acres [1]	4,062	
Acquisition Costs	$11,422,400	$2,812
Subtotal Recent Land Acquisition	$11,422,400	$2,812

Prepared by New Economics & Advisory, June 2016.

[1] Owned and managed acres per Deer Creek Hills Preserves Master Plan, July 2008.

Source: Deer Creek Hills Preserve Master Plan, 2008; SVC website; and SVC staff.

A9.2 *Sacramento Valley Conservancy M&M Trends*

Deer Creek Hills, 2016$

Expenditure	Amount	Metric	Cost per Acre [1]
Annual Management & Monitoring (2013$)			
Property Tax & Management Costs [2]	$55,844	Lump Sum	$13.75
Payroll	$50,986	Lump Sum	$12.55
Payroll Taxes	$3,890	Lump Sum	$0.96
Employee Benefits	$71	Lump Sum	$0.02
Travel & Meetings	$735	Lump Sum	$0.18
Occupancy	$1,012	Lump Sum	$0.25
Postage & Delivery	$31	Lump Sum	$0.01
Phone & Internet	$3,118	Lump Sum	$0.77
Office Expense	$195	Lump Sum	$0.05
Payroll Services	$838	Lump Sum	$0.21
Insurance	$7,552	Lump Sum	$1.86
Taxes & Licenses	$1,213	Lump Sum	$0.30
General Admin Overhead [3]	$29,435	Lump Sum	$7.25
Subtotal Administrative Expenses	$154,922		$38.14
Inflated to 2016$			$39.97

Prepared by New Economics & Advisory, June 2016.

[1] Costs are spread over 4,062 acres of Deer Creek Hills Preserve actively managed by SVC.

[2] Includes weed management, trash management, grazing management, property repairs, management licensing agreements, and training.

[3] General overhead and administrative cost estimated at 19% of overall budget per SVC staff.

Source: Deer Creek Hills Preserve Master Plan, 2008; and Sacramento Valley Conservancy staff, May 2015.

Appendix B: Supporting Calculations for Endowment Fee Component

B1 *Endowment Fund Annual Rate of Return Research*

Nominal Rates

Item	Year	Source	Rate of Return
National Association of College and University Business Officers (NACUBO) (Net Return) [1]			
Endowments Under $25 Million	2009		3.90%
Endowments Under $25 Million	2010		2.80%
Endowments Under $25 Million	2011		4.90%
Endowments Under $25 Million	2012		5.70%
	Average		4.33%
Other Habitat Fee Studies (Nominal Rates)			
Natomas Basin Conservancy	2013	EPS/ NBC	3.00%
Santa Clara Valley Habitat Plan Development Fee Nexus Study	2012	Willdan	3.25%
Management Plan (2008)	2008	El Dorado County	6.00%
El Dorado County Ecological Preserve Fee Estimate	1998	EPS	6.00%
	Average		4.56%

Prepared by New Economics & Advisory, June 2016.

[1] NACUBO 10-year total net return for US Higher Education endowments and Affiliated Foundations, for Endowments under $25 million.

Sources: Individual Habitat Management Organizations, Fee Nexus Studies, and NACUBO Common Fund Study of Endowments 2009-2012.

B2 *Endowment Cash Flow Projections (2016$ constant dollars)*

6.0% annually

Item	Assumption	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Habitat Acres Maintained		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Annual Maintenance Cost	$43 per acre	$43	$43	$43	$43	$43	$43	$43	$43	$43	$43
Portion Prepaid by Initial M&M Fee Component [1]		$43	$43	$43	$43	$43	$0	$0	$0	$0	$0
Remaining Annual Maintenance Cost	$43 per acre	$0	$0	$0	$0	$0	$43	$43	$43	$43	$43
Endowment Fund											
Opening Balance		$0	$550	$583	$618	$655	$694	$693	$692	$691	$690
Interest Earnings [2]	6.0% annually	$0	$33	$35	$37	$39	$42	$42	$42	$41	$41
New Fee Revenue Available	$550 per acre	$550	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Balance		$550	$583	$618	$655	$694	$736	$735	$734	$733	$731
Amount Applied Toward O&M Cost		$0	$0	$0	$0	$0	$43	$43	$43	$43	$43
Closing Balance		$550	$583	$618	$655	$694	$693	$692	$691	$690	$689

Prepared by New Economics & Advisory, June 2016.

[1] This amount is to be provided by developers up-front to fund 5 years of maintenance.

[2] Interest earnings are applied to previous year's ending balance.

B3 *Endowment Cash Flow Projections (2016$ constant dollars)*

3.0% annually

Item	Assumption	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Habitat Acres Maintained		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Annual Maintenance Cost	$43 per acre	$43	$43	$43	$43	$43	$43	$43	$43	$43	$43
Portion Prepaid by Initial M&M Fee Component [1]		$43	$43	$43	$43	$43	$0	$0	$0	$0	$0
Remaining Annual Maintenance Cost	$43 per acre	$0	$0	$0	$0	$0	$43	$43	$43	$43	$43
Endowment Fund											
Opening Balance		$0	$1,250	$1,288	$1,326	$1,366	$1,407	$1,406	$1,406	$1,406	$1,405
Interest Earnings [2]	3.0% annually	$0	$38	$39	$40	$41	$42	$42	$42	$42	$42
New Fee Revenue Available	$1,250 per acre	$1,250	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Balance		$1,250	$1,288	$1,326	$1,366	$1,407	$1,449	$1,449	$1,448	$1,448	$1,447
Amount Applied Toward O&M Cost		$0	$0	$0	$0	$0	$43	$43	$43	$43	$43
Closing Balance		$1,250	$1,288	$1,326	$1,366	$1,407	$1,406	$1,406	$1,406	$1,405	$1,405

Prepared by New Economics & Advisory, June 2016.

[1] This amount is to be provided by developers up-front to fund 5 years of maintenance.

[2] Interest earnings are applied to previous year's ending balance.

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