

APPENDIX E

HABITAT IMPACT ANALYSES

- GOLDEN-CHEEKED WARBLER
- BLACK-CAPPED VIREO
- LISTED KARST INVERTEBRATES

County	Sector	Total Area	Model C2010 GCW Habitat - Low Estimate (Rank 4 Only)	% GCW Habitat - Low Est.	Model C2010 GCW Habitat - Mid Estimate (Rank 3 and 4)	% GCW Habitat - Mid Est.	Model C2010 GCW Habitat - High Estimate (Ranks 1 - 4)	% GCW Habitat - High Est.	New Development 2010 - 2040 (Dec. 17, 2010)	GCW Habitat Loss 2010 - 2040 (Low Est.)	GCW Habitat Loss 2010 - 2040 (Mid Est.)	GCW Habitat Loss 2010 - 2040 (High Est.)	Ave Annual GCW Habitat Loss 2010 - 2040 (Mid Est.)
Bandera	ZCBC	136,914	13,858	10%	21,623	16%	37,220	27%	3,780	378	605	1,020	19.5
Bandera	ZEBC1	60,791	12,325	20%	17,371	29%	26,105	43%	1,261	251	366	542	11.8
Bandera	ZEBC2	7,230	1,267	18%	1,775	25%	2,630	36%	925	167	232	332	7.5
Bandera	ZWBC	305,384	101,880	33%	124,983	41%	156,679	51%	2,988	986	1,225	1,525	39.5
Bexar	FN	37,318	2,980	8%	4,625	12%	7,866	21%	14,920	1,193	1,791	3,133	57.8
Bexar	FNE	37,017	10,527	28%	13,499	36%	17,638	48%	13,630	3,816	4,907	6,542	158.3
Bexar	FNW	92,020	30,883	34%	38,482	42%	49,938	54%	18,357	6,242	7,710	9,912	248.7
Bexar	FW	34,869	38	0%	53	0%	77	0%	22,445	-	-	-	-
Bexar	NC	22,795	682	3%	1,267	6%	2,622	12%	3,875	116	233	465	7.5
Bexar	NE	28,714	110	0%	278	1%	602	2%	3,443	-	34	70	1.1
Bexar	NW	30,871	381	1%	814	3%	1,822	6%	6,907	69	208	414	6.7
Bexar	W	16,497	-	0%	-	0%	-	0%	1,684	-	-	-	-
Blanco	ZNBC	319,165	17,802	6%	28,946	9%	52,374	16%	423	26	39	68	1.3
Blanco	ZSBC	137,424	10,086	7%	17,584	13%	33,324	24%	971	68	127	233	4.1
Comal	FNCC	80,616	16,756	21%	24,199	30%	36,235	45%	10,457	2,196	3,137	4,705	101.2
Comal	ECC3	82,408	26,965	33%	33,433	41%	41,833	51%	10,769	3,554	4,416	5,492	142.5
Comal	NCC3	34,901	6,353	18%	9,079	26%	13,602	39%	3,937	709	1,024	1,535	33.0
Comal	SCC	49,837	17,147	34%	20,289	41%	24,135	48%	19,849	6,748	8,137	9,528	262.5
Comal	WCC5	105,297	19,908	19%	28,752	27%	44,491	42%	23,888	4,539	6,449	10,033	208.0
Comal	ZNB	14,614	18	0%	56	0%	166	1%	4,347	-	-	43	-
Kendall	ZEKC	80,651	7,418	9%	12,696	16%	23,252	29%	7,057	635	1,129	2,046	36.4
Kendall	ZNKC	261,236	18,259	7%	28,894	11%	51,187	20%	5,881	411	647	1,176	20.9
Kendall	ZWKC	82,402	16,544	20%	23,679	29%	35,401	43%	5,642	1,128	1,637	2,427	52.8
Kerr	KCC	20,058	1,210	6%	2,443	12%	5,056	25%	4,751	285	570	1,187	18.4
Kerr	KCNE	86,381	6,014	7%	9,757	11%	17,101	20%	3,704	259	407	740	13.1
Kerr	KCSC	34,719	2,939	8%	4,590	13%	7,793	22%	649	52	84	143	2.7
Kerr	KCSE	83,108	9,208	11%	13,960	17%	23,249	28%	918	100	156	258	5.0
Kerr	KCW	484,574	57,044	12%	83,235	17%	130,572	27%	2,051	246	348	553	11.2
Medina	ZDMC	55,951	-	0%	-	0%	-	0%	2,034	-	-	-	-
Medina	ZEMC1	129,731	19,362	15%	23,681	18%	29,265	23%	25,505	3,826	4,590	5,866	148.1
Medina	ZHMC	113,228	-	0%	-	0%	-	0%	922	-	-	-	-
Medina	ZNCMC	199,783	36,705	18%	48,737	24%	66,965	34%	2,440	439	585	830	18.9
Medina	ZNMC	71,502	-	0%	-	0%	-	0%	5,636	-	-	-	-
Medina	ZWMC	283,693	13,921	5%	19,890	7%	30,484	11%	5,106	255	357	562	11.5
SEP SECTORS		3,621,699	478,590	13%	658,670	18%	969,684	27%	241,152	38,694	51,150	71,380	1,650
COUNTY SECTOR SUMMARIES													
Bandera		510,319	129,330	25%	165,752	32%	222,634	44%	8,955	1,782	2,428	3,419	78.3
Bexar*		300,101	45,601	15%	59,018	20%	80,565	27%	85,260	11,436	14,883	20,536	480.1
Blanco		456,589	27,888	6%	46,530	10%	85,698	19%	1,395	94	166	301	5.4
Comal		367,673	87,147	24%	115,808	31%	160,462	44%	73,247	17,746	23,163	31,336	747.2
Kendall		424,289	42,221	10%	65,269	15%	109,840	26%	18,580	2,174	3,413	5,649	110.1
Kerr		708,840	76,415	11%	113,985	16%	183,771	26%	12,074	942	1,565	2,881	50.4
Medina		853,888	69,988	8%	92,308	11%	126,714	15%	41,642	4,520	5,532	7,258	178.5
SEP SECTORS w/o Comal Co.		3,254,026	391,443	12%	542,862	17%	809,222	25%	167,905	20,948	27,987	40,044	903
Adjacent Bexar Sectors w/o C		353,575	55,649		77,427		114,023		39,464	5,840	7,722	10,881	249
Rural Sectors w/o Comal		2,600,350	290,193		406,417		614,634		43,181	3,672	5,382	8,627	174

SEP-HCP BCV Impacts Analysis

BCV Habitat per Wilkins et al. (2006)

Land Development - Dec. 17, 2010 version

Draft December 22, 2010

County	Total County Area	BCV Habitat Estimate (Wilkins et al. 2006)	% BCV Habitat	New Development 2010 - 2040 (Dec. 17, 2010)	BCV Habitat Loss 2010 - 2040	Ave Annual BCV Habitat Loss 2010 - 2040
Bandera	510,109	7,599	1%	8,955	133	4.3
Bexar	804,048	47,854	6%	85,260	5,074	163.7
Blanco	456,500	2,275	0%	1,395	7	0.2
Comal	367,819	3,591	1%	73,247	715	23.1
Kendall	423,972	4,945	1%	18,580	217	7.0
Kerr	708,103	53,074	7%	12,074	905	29.2
Medina	855,078	62,292	7%	41,642	3,034	97.9
SEP-HCP PLAN AREA	4,125,629	181,630	4%	241,152	10,085	325
SEP-HCP PLAN AREA w/o Comal Co.	3,757,810	178,039	5%	167,905	9,370	302

Methods and Assumptions for the Listed Karst Invertebrate Take and Impact Analysis

IMPACTS ANALYSIS STUDY AREA

The impacts analysis for the listed karst invertebrates includes 12 of the 35 SEP-HCP sectors where potential karst habitat occurs, as indicated by mapped Karst Zones 1 through 4.

Sector boundaries were based on U.S. Census Bureau census tract boundaries, and SEP-HCP sectors included one or more adjacent census tracts. Sectors boundaries were used to compile and analyze population and land development projections for the SEP-HCP Plan Area. However, the SOUTH sector was not originally included in the land development projections, since this area was outside of the area of potential habitat for the GCW, BCV, and most of the listed karst invertebrates. The SOUTH sector was added later for the purpose of this impacts analysis to cover the area of potential karst habitat associated with the Alamo Heights Karst Fauna Region (KFR).

KARST FAUNA REGIONS AND KFR GROUPS

To facilitate recovery of the nine listed karst invertebrates, Veni (1994, 2009) delineated six Karst Fauna Regions (or KFRs) in Bexar County based on hydrogeologic barriers and/or other restrictions to the migration of troglobitic species over evolutionary time.

The six KFRs are Alamo Heights, Culebra Anticline, Government Canyon, Helotes, Stone Oak, and UTSA (University of Texas at San Antonio).

There is some uncertainty associated with the boundaries of the KFRs and the KFR boundaries shown in the 2008 Bexar County Karst Invertebrates Draft Recovery Plan do not include the entire extent of potential karst habitat. Therefore, an impacts analysis by KFR was not practical. So, the SEP-HCP sectors were grouped into clusters associated with the general vicinity of the KFRs. These KFR Groups include sectors associated with:

- NW Group (Government Canyon, Helotes, and UTSA KFRs)
- Stone Oak Group
- Culebra Anticline Group
- Alamo Heights Group.

The SEP-HCP sectors associated with each KFR are shown in Table 1.

BEXAR COUNTY KARST ZONES

Veni (1994, 2002) delineated and defined five Karst Zones based on geologic maps, studies of karst development, and information on the distribution of karst species. KARST ZONES are categorized by the likelihood of finding a karst feature that will provide habitat for endangered invertebrate species. The five Karst Zones are categorized as follows:

Karst Zone 1: Areas known to contain endangered karst invertebrate species

Karst Zone 2: Areas that may contain one or more endangered karst invertebrate species due to the high probability of suitable habitat, but the areas have not been extensively surveyed.

Karst Zone 3: Areas that probably do not contain endangered karst invertebrates due to the lack of suitable habitat.

Karst Zone 4: Areas that require further research. This zone is assumed to be equivalent to Zone 3, but may also include portions similar to Zone 2 or Zone 5.

Karst Zone 5: Areas with units of rock that do not contain the endangered karst invertebrate species. This zone is not included in the SEP-HCP listed karst invertebrate take and impact analysis.

The acreage of each Karst Zone within each SEP-HCP sector is listed in Table 1.

TABLE 1. Acreage Totals for the SEP-HCP Karst Permit Area, Sectors, KFR Groups, KFR Areas, and Karst Zones.

County	Sector	KFR Group	Total Sector Area (Acres)	Karst Zones 1 and 2		Karst Zones 3 and 4	
				Amount of Habitat (Acres)	Percent Habitat	Amount of Habitat (Acres)	Percent Habitat
Bandera	ZEBC1	NW Group	60,791	-	0%	315	1%
Bandera	ZEBC2	NW Group	7,230	-	0%	129	2%
Bexar	FN	Stone Oak	37,318	19,101	51%	9,142	24%
Bexar	FNE	Stone Oak	37,017	25,808	70%	8,062	22%
Bexar	FNW	NW Group	92,020	34,470	37%	31,824	35%
Bexar	FW	Culebra Anticline	34,869	11,844	34%	14,354	41%
Bexar	NC	Stone Oak	22,795	7,455	33%	12,506	55%
Bexar	NE*	Stone Oak	17,689	3,072	17%	14,179	80%
Bexar	NE*	Alamo Heights	11,025	1,110	10%	9,910	90%
Bexar	NW	NW Group	30,871	2,048	7%	24,296	79%
Bexar	W	Culebra Anticline	16,497	4,883	30%	6,925	42%
Medina	ZEMC1	NW Group	129,731	20,124	16%	24,358	19%
Medina	ZNMC	NW Group	199,783	37	0%	-	0%
Bexar	SOUTH	Alamo Heights	49,909	4,028	8%	26,813	54%
PERMIT AREA TOTAL			747,545	133,979	18%	182,814	24%

* NE Sector split between the Northern and the Alamo Heights KFR Areas along area roads

DEVELOPMENT PROJECTIONS AND HABITAT IMPACTS

For this analysis, potential impacts to karst habitat impacts are measured in terms of the acres of Karst Zone habitat that may be impacted by projected land development and re-development activities over the next 30 years.

The SEP-HCP land use analysis projected changes in land use for the SEP-HCP sectors over the anticipated duration of the SEP-HCP (i.e., between 2010 and 2040). These projections were based on population projections, housing characteristics and trends, land use data, and other market factors.

Since the SOUTH sector was not included in the original land use analysis, the SOUTH sector is assumed to be completely built out at 85 percent developed land uses 2000. Therefore no new development is modeled for this sector. Since the NE sector occurs across two KFR Groups, approximately 62 percent of the projected development was assigned to the Stone Oak KFR Group and 38 percent was assigned to the Alamo Heights KFR Group.

Redevelopment activities were estimated at 0.5 percent per year of all developed lands present within a sector at the beginning of each decade of the 30-year Permit duration.

It is assumed that impacts to potential karst habitat (i.e., areas identified as Karst Zones 1 through 4) from future development and redevelopment activities would occur in proportion to the extent of Karst Zones 1 and 2 and Karst Zones 3 and 4 in a sector. For example, if 25 percent of a SEP-HCP sector was mapped as potential karst habitat, then 25 percent of the extent of future development in that sector would be assumed to impact potential karst habitat.

Table 2 summarizes the amount of new development, redevelopment, and total development projected for each of the applicable SEP-HCP sectors.

TABLE 2. Development Projections and Karst Zone Impacts (in Acres) for the Karst Permit Area Between 2010 and 2040.

Sector	KFR Group	New Development	Re-development	Total Development	Karst Zone 1 Impacts	Karst Zone 2 Impacts	Karst Zone 3 Impacts	Karst Zone 4 Impacts	Total Karst Zone Impacts
ZEBC1	NW Group	1,261	1,444	2,705	-	-	-	14	14
ZEBC2	NW Group	924	531	1,455	-	-	-	26	26
FN	Stone Oak	14,920	4,216	19,136	5,687	4,107	4,688	-	14,482
FNE	Stone Oak	13,630	4,358	17,988	2,151	10,390	3,918	-	16,459
FNW	NW Group	18,357	7,859	26,216	5,796	4,025	7,712	1,355	18,887
FW	Culebra Anticline	22,445	4,345	26,790	2,698	6,402	11,028	-	20,128
NC	Stone Oak	3,875	3,125	7,000	41	2,248	3,840	-	6,129
NE*	Stone Oak	3,444	3,226	6,670	-	1,158	5,347	-	6,505
NE*	Alamo Heights	3,444	3,226	3,835	-	-	-	-	-
NW	NW Group	6,906	4,149	11,055	57	677	8,700	-	9,434
W	Culebra Anticline	1,684	1,786	3,470	73	954	1,457	-	2,484
ZEMC1	NW Group	25,505	6,042	31,547	-	4,894	3,929	1,994	10,817
ZNCMC	NW Group	2,441	3,985	6,426	-	1	-	-	1
SOUTH	Alamo Heights	-	6,576	6,576	32	498	3,533	-	4,063
PERMIT AREA TOTAL		118,836	54,867	170,867	16,535	35,354	54,151	3,389	109,429

* NE Sector split between the Northern and the Alamo Heights KFR Areas along area roads

SPECIES-OCCUPIED CAVE ESTIMATES

Detailed karst feature surveys and karst faunal surveys conducted on Camp Bullis were used to extrapolate the total number of caves that may be occupied by one or more of the listed karst invertebrates in the vicinity of the NW and Stone Oak KFR Groups. Similar, although less rigorous, data compiled by the Texas Speleological Society on the number/distribution of karst features and species-occupied caves were used to estimate the total number of species-occupied caves that might occur in the vicinity of the Culebra Anticline and Alamo Heights KFR Groups. Due to limited data, Zara Environmental provided a professional opinion on the estimated density of species-occupied caves that might occur within Karst Zones 3 and 4 in any KFR group.

Estimated cave densities summarized in Table 3.

TABLE 3. Estimated Density of Species-occupied Caves.

	Karst Zones 1 and 2	Karst Zones 3 and 4
Camp Bullis Estimates (apply to the NW and Stone Oak KFR Groups)	3.28 caves per square mile	0.02 caves per square mile
Texas Speleological Society Estimates (apply to the Culebra Anticline and Alamo Heights KFR Groups)	2.22 caves per square mile	0.02 caves per square mile

[Table 4](#) estimates the number of species-occupied caves that could be directly or indirectly impacted by future development and redevelopment activities over potential karst zone habitat during the next 30 years.

This analysis assumes that the number of caves that may be impacted by future development will occur in proportion to the extent of such activities in a sector. For example, if 25 percent of a sector is projected to be subject to development activities, then 25 percent of the estimated caves in that sector are assumed to be affected by those activities. Many caves in built out applicable SEP-HCP sectors, such as the SOUTH sector, may already be fully or partially taken.

Since the requested level of incidental take of karst habitat represents approximately 15 percent of the total extent of the anticipated future impacts, it is assumed that the number of species-occupied caves that might be impacted by SEP-HCP participants would also represent approximately 15 percent of the total number of impacted caves. [Table 4](#) summarizes the number of species-occupied caves that might be directly or indirectly impacted by incidental take authorized through the SEP-HCP.

TABLE 4. Estimated Number of Species-Occupied Caves.

Sector	KFR Group ¹	Est. No. of Species Caves (Zones 1 and 2)	Est. No. of Species Caves (Zones 3 and 4)	Est. No. of Species Caves Affected by Dvlpmnt.	% of Total Caves Impacted by Dvlpmnt.	Est. No. of Species Caves Impacted by Requested Incidental Take	% of Total Est. Caves Impacted by Requested Incidental Take
ZEBC1	NW	-	-	0	0%	0	0%
ZEBC2	NW	-	-	0	0%	0	0%
FN	SO	97	-	50	52%	8	8%
FNE	SO	132	-	64	49%	10	7%
FNW	NW	176	1	50	28%	8	4%
FW	CA	41	-	32	79%	5	12%
NC	SO	38	-	12	31%	2	5%
NE*	SO	16	-	6	38%	1	6%
NE*	AH	6	-	-	0%	-	0%
NW	NW	10	1	4	37%	1	5%
W	CA	17	-	4	21%	1	3%
ZEMC1	NW	103	1	25	24%	4	4%
ZNMC	NW	-	-	0	0%	0	0%
SOUTH	AH	14	1	2	13%	0	2%
PERMIT AREA TOTAL		650	4	249	38%	37	6%

¹ KFR Group names are abbreviated for convenience: NW KFR Group = NW; Stone Oak KFR Group = SO; Culebra Anticline KFR Group = CA; Alamo Heights KFR Group = AH.

REFERENCES

- Veni, G. 1994. Geologic controls on cave development and the distribution of endemic cave fauna in the San Antonio, Texas, region. Report prepared for Texas Parks and Wildlife Department and U.S. Fish and Wildlife Service, Austin, Texas. 112 pp.
- Veni, G. 2002. Delineation of hydrogeologic areas and zones for the management and recovery of endangered karst invertebrate species in Bexar County, Texas. Report prepared for the U.S. Fish and Wildlife Service. 75 pp.
- Veni, G. 2009. Karst landscape evolution: impacts on speciation, biogeography, and protection of rare and endangered species. Proceedings of the 15th Annual International Congress of Speleology. (2): 771-776.

Analysis of Proposed Critical Habitat Units for Potential Karst Preserve Opportunities

DRAFT March 31, 2011

PROPOSED CHU NUMBER	KNOWN OCCUPIED CAVES	LAND OWNERSHIP TYPE	LISTED SPECIES IN UNIT	KNOWN TO BE OCCUPIED AT TIME OF LISTING	CURRENTLY OCCUPIED	TOTAL ACREAGE	NATURAL VEGETATION			INVASIVE VEGETATION		DISTURBED/NON- NATIVE VEGETATION		URBAN		NO DATA		Current Possible KFA Status	Future KFA Opportunity	Notes
							ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%				
1a	Bone Pie Cave Surprise Sink	State	<i>R. infernalis</i> <i>C. madia</i>	Yes	Yes	237.9	235	99%	0	-	0	-	0	-	3	1%	H+	H+		
1b	Government Canyon Bat Cave	State	<i>C. vespera</i> <i>N. microps</i> <i>R. exilis</i> <i>R. infernalis</i>	Yes	Yes	178.2	176	99%	0	-	0	-	0	-	3	2%	H+	H+		
1c	Lost Pothole	State	<i>C. madia</i>	Yes	Yes	178.2	174	98%	0	-	0	-	0	-	3	2%	H+	H+		
1d	Dancing Rattler Cave Lithic Ridge Cave Hackberry Sink	State	<i>C. madia</i> <i>R. exilis</i> <i>R. infernalis</i>	Yes	Yes	348.8	341	98%	0	-	0	-	0	-	9	3%	H+	H+		
1e	Canyon Ranch Pit* Continental Park Cave Creek Bank Cave Fat Man's Nightmare Cave* Pig Cave San Antonio Ranch Pit Scenic Overlook Cave* Tight Cave	State City Private	<i>R. infernalis</i> <i>R. exilis</i> <i>B. veryiivi</i> <i>C. madia</i>	No	Yes	690.2	674.2	98%	1	-	0	-	1	-	16	2%	H+	H+		
1f	10K Cave	State	<i>R. infernalis</i>	No	Yes	178.2	175	98%	0	-	0	-	0	-	3	2%	H+	H+		
2	Logan's Cave Madia's Drop Cave	Private	<i>C. madia</i> <i>R. exilis</i> <i>R. infernalis</i>	Yes	Yes	251.7	237	94%	0.2	-	0.5	-	10	4%	4	2%		H-		
3	Helotes Blowhole* Helotes Hilltop Cave*	Private	<i>R. exilis</i> <i>R. infernalis</i>	Yes	Yes	125.1	96.7	77%	1	1%	1	1%	24	19%	2	2%		H-		
4	Kamikazi Cricket Cave Matke Cave Scorpion Cave	Private	<i>R. exilis</i> <i>R. infernalis</i>	Yes	Yes	254.6	205.8	81%	1	-	0	-	43	17%	4	2%		H-		
5	Christmas Cave	Private	<i>C. madia</i> <i>R. exilis</i> <i>R. infernalis</i> <i>B. veryiivi</i>	Yes	Yes	117.3	109	93%	0	-	0	-	8	7%	1	1%		H-		
6	John Wagner Ranch Cave No. 3*	Private City	<i>C. madia</i> <i>R. exilis</i> <i>R. infernalis</i>	Yes	Yes	105.1	103	98%	0	-	0	-	1	1%	1	1%	H+	H+		
7	Young Cave No. 1	Private	<i>R. exilis</i>	Yes	Yes	157.9	151	96%	0	-	0	-	3	2%	4	3%		H+		
8	Three Fingers Cave Hills and Dales Pit* Robber's Cave	Private City	<i>C. madia</i> <i>R. infernalis</i> <i>R. exilis</i>	Yes	Yes	470.6	326.3	69%	0	-	27	6%	116	25%	1	-	H+	M-	CAVE ON COSA LAND COULD BE CURRENT HIGH; CAVES ON PRIVATE LAND COULD BE MEDIUM	
9	Mastodon Pit Feature No. 50 La Cantera Cave No. 1 La Cantera Cave No. 2 Low Priority Cave ¹	State Private	<i>C. madia</i> <i>R. exilis</i>	Yes	Yes	286.2	135	47%	11	4%	47	16%	95	33%	0	-		M-	MIGHT BE ABLE TO CREATE A MEDIUM PRESERVE ON SOUTH SIDE OF ROAD	
10a	Flying Buzzworm Cave ¹	City Private	<i>R. infernalis</i>	Yes	Yes	66.8	65.7	98%	0	-	0	-	0	-	1	1%	H+	H+	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
10b	Up The Creek Cave ¹	Private	<i>R. exilis</i>	Yes	Yes	20.5	19.8	97%	0	-	0	-	0	-	0.3	1%	H+	H+	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
11a	Bunny Hole ¹	Private	<i>R. exilis</i>	Yes	Yes	15.5	14	90%	0	-	0	-	2	13%	0	-	H-	H-	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
11b	Poor Boy Baculum Cave ¹	Private	<i>R. exilis</i>	Yes	Yes	21.2	5	24%	1	5%	0	-	15	71%	0	-	H-	H-	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
11c	Root Toupee Cave ¹	Private	<i>R. exilis</i>	No	Yes	52.5	7.3	14%	0.3	1%	2	4%	42	80%	0	-	H-	H-	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
11d	Blanco Cave	Private	<i>R. exilis</i>	No	Yes	102.1	23	23%	3	3%	1	1%	75	73%	0	-	M-	M-	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
12	Hairy Tooth Cave Ragin' Cajun Cave	Private	<i>R. exilis</i>	Yes	Yes	370.9	185.4	50%	0	-	14	4%	173	47%	0.2	-		NONE	CAVES LOCATED IN A PREDOMINANTLY URBAN AREA	
13	Black Cat Cave	Private	<i>R. exilis</i>	Yes	Yes	187.2	86.8	46%	23	12%	0	-	77	41%	0	-		M-		

Analysis of Proposed Critical Habitat Units for Potential Karst Preserve Opportunities

PROPOSED CHU NUMBER	KNOWN OCCUPIED CAVES	LAND OWNERSHIP TYPE	LISTED SPECIES IN UNIT	KNOWN TO BE OCCUPIED AT TIME OF LISTING	CURRENTLY OCCUPIED	TOTAL ACREAGE	NATURAL VEGETATION			INVASIVE VEGETATION		DISTURBED/NON- NATIVE VEGETATION		URBAN		NO DATA		Current Possible KFA Status	Future KFA Opportunity	Notes
							ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%				
14	Game Pasture Cave No. 1 King Toad Cave Stevens Ranch Trash Hole Cave	Private	<i>R. infernalis</i>	Yes	Yes	329.6	249	76%	0	-	0	-	81	25%	0	-		M-		
15	Braken Bat Cave Isopit Obvious Little Cave Wurzbach Bat Cave	Private	<i>C. venii</i> <i>R. infernalis</i>	Yes	Yes	339.4	52	15%	0	-	10	3%	278	82%	0	-		NONE	CAVES LOCATED IN A PREDOMINANTLY URBAN AREA	
16	Caracol Creek Coon Cave	Private	<i>R. infernalis</i>	Yes	Yes	193.9	120.1	62%	4.2	2%	2	1%	68	35%	0	-		M-		
17	Madia's Cave*	Private	<i>C. madia</i> <i>R. infernalis</i>	Yes	Yes	114.5	111	97%	0	-	0	-	1	1%	3	3%	L+	H+	CAVE AND SURROUNDING 5 ACRES PROTECTED AND MANAGED THROUGH LCHCP	
19	Genesis Cave	Private	<i>R. infernalis</i>	Yes	Yes	142.1	20.5	14%	1	1%	1.4	1%	116	82%	0	-		NONE	CAVES LOCATED IN A PREDOMINANTLY URBAN AREA	
20	Robber Baron Cave	Private	<i>T. cokendolpheri</i> <i>C. baronia</i>	Yes	Yes	246.6	25	10%	0.6	-	1	-	222	90%	0	-		NONE	CAVES LOCATED IN A PREDOMINANTLY URBAN AREA	
21	Hornet's Last Laugh Pit Kick Start Cave Springtail Crevice	City Private	<i>R. exilis</i>	No	Yes	395.7	241.4	61%	7	2%	13	3%	135	34%	0.3	-	H-	H-		
22	Breathless Cave	City Private	<i>C. madia</i>	No	Yes	178.2	177	99%	0	-	0	-	0	-	2	1%	M-	H+		
23	Crownridge Canyon Cave	City Private	<i>R. infernalis</i>	No	Yes	178.2	130	73%	0	-	40	22%	5	3%	1	1%	H+	H+		
24	Peace Pipe Cave ¹	Private	<i>R. exilis</i>	No	Yes	11.4	10	88%	0	-	0	-	0.1	1%	0.4	4%	H-	H-	ANALYSIS INCLUDES REVIEW OF ADJACENT AREA ON CAMP BULLIS	
25	OB3	Private	<i>C. baronia</i>	No	Yes	177.2	14.6	8%	0.5	-	2	1%	160	90%	0	-		NONE	CAVES LOCATED IN A PREDOMINANTLY URBAN AREA	
26	Max and Roberts Cave	Private	<i>R. infernalis</i>	No	Yes	116.6	85	73%	0	-	0	-	33	28%	0	-		M-		

* Indicates caves and associated lands managed under the La Cantera HCP.

1. Cave is located on Camp Bullis; proposed critical habitat is outside Camp Bullis but most likely includes mesocaverns of the cave.

Note: Area sizes may not sum due to rounding.

Current KFA Potential -- CHU and/or cave entrance are located within or primarily within public lands, and approx. 90 ac/40 ac/10 ac of natural vegetation currently surround the cave.

Future KFA Potential -- CHU and/or cave entrance are located within or primarily within an area of natural vegetation, and approx. 90 ac/40 ac/10 ac of natural vegetation currently surround the cave.

High quality = approx. 90 ac of natural vegetation surround cave or are available in CHU

Medium quality = approx. 40 ac of natural vegetation surround cave or are available in CHU

Low quality = approx. 10 ac of natural vegetation surround cave or are available in CHU

+ = substantially more natural vegetation surrounds cave/CHU than is needed to meet the High/Medium designation

- = CHU or cave vicinity contains more than 5% urban or non-natural vegetation; implies more intensive management would be needed

APPENDIX F

ILLUSTRATIVE FUNDING PLAN SCENARIO

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	1	2	3	4	5	6	7	8	9	10
PRESERVE SYSTEM ACQUISITIONS										
Preserve Acquisitions (GCW & BCV)										
Preserve Land Acquisitions (acres)	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167
Cumulative Preserve System Size (acres)	1,167	2,334	3,501	4,668	5,835	7,002	8,169	9,336	10,503	11,670

Assumptions: Preserve acquisitions equally distributed across Years 1 - 30 to assemble target preserve size of 35,000 ac with 30,000 ac GCW preserves and 5,000 ac BCV preserves. Estimated annual GCW acquisitions are 1,000 ac and estimated annual BCV acquisitions are 167 acres.

Preserve Acquisitions (Karst)

Preserve Land Acquisitions (acres)	80	80	80	80	80	80	80	80	80	80
Cumulative Preserve System Size (acres)	80	160	240	320	400	480	560	640	720	800

Assumptions: Preserve acquisitions equally distributed across Years 1 - 30 to assemble target preserve size of 2,400 acres.

Acquisition Costs

Karst Preserve Acquisition Costs	\$ 2,558,296	\$ 2,635,052	\$ 2,714,100	\$ 2,795,508	\$ 2,879,360	\$ 2,965,760	\$ 3,054,704	\$ 3,146,344	\$ 3,240,728	\$ 3,337,948
GCW Preserve Acquisition Costs	\$ 4,821,506	\$ 4,965,982	\$ 5,115,246	\$ 5,268,598	\$ 5,426,906	\$ 5,589,603	\$ 5,757,356	\$ 5,929,749	\$ 6,107,565	\$ 6,290,870
BCV Preserve Acquisition Costs	\$ 316,599	\$ 326,051	\$ 335,887	\$ 345,941	\$ 356,378	\$ 367,033	\$ 378,071	\$ 389,344	\$ 401,000	\$ 413,041
Real Estate Transaction Fees	\$ 365,217	\$ 376,169	\$ 387,471	\$ 399,095	\$ 411,079	\$ 423,408	\$ 436,106	\$ 449,187	\$ 462,660	\$ 476,526
Total Preserve Acquisition Costs	\$ 8,061,618	\$ 8,303,253	\$ 8,552,703	\$ 8,809,141	\$ 9,073,723	\$ 9,345,804	\$ 9,626,237	\$ 9,914,624	\$ 10,211,953	\$ 10,518,385

Assumptions (in 2011 dollars):

Karst Preserve Acquisition - 50% of karst preserves will be purchased in relatively urban areas with 90% of the acreage purchased in fee simple and 10% acquired as conservation easements. 50% of karst preserves will be purchased in suburban areas with 60% of the acreage purchased in fee simple and 40% acquired as conservation easements.

GCW & BCV Preserve Acquisition - 5,000 acres of GCW preserve will be purchased in relatively suburban areas with 60% of the acreage purchased in fee simple and 40% acquired as conservation easements. The remaining 25,000 acres of GCW preserve and the entire 5,000 acres of BCV preserve will be purchased in relatively rural areas with 10% of the acreage purchased in fee simple and 90% acquired as conservation easements.

Urban fee simple land prices estimated at \$45,000/acre. Suburban fee simple land prices estimated at \$25,000/acre. Rural fee simple land prices estimated at \$4,500/acre. The cost of a conservation easement is assumed to be 33% of the fee simple per acre cost. Per acre land prices inflate annually by 3%. Real estate transaction fees are assumed to be 3% of the fee simple purchase price for all acquisitions.

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	11	12	13	14	15	16	17	18	19	20
PRESERVE SYSTEM ACQUISITIONS										
Preserve Acquisitions (GCW & BCV)										
Preserve Land Acquisitions (acres)	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167
Cumulative Preserve System Size (acres)	12,837	14,004	15,171	16,338	17,505	18,672	19,839	21,006	22,173	23,340

Assumptions: Preserve acquisitions equally distributed across Years 1 - 30 to assemble target preserve size of 35,000 ac with 30,000 ac GCW preserves and 5,000 ac BCV preserves. Estimated annual GCW acquisitions are 1,000 ac and estimated annual BCV acquisitions are 167 acres.

Preserve Acquisitions (Karst)

Preserve Land Acquisitions (acres)	80	80	80	80	80	80	80	80	80	80
Cumulative Preserve System Size (acres)	880	960	1,040	1,120	1,200	1,280	1,360	1,440	1,520	1,600

Assumptions: Preserve acquisitions equally distributed across Years 1 - 30 to assemble target preserve size of 2,400 acres.

Acquisition Costs

Karst Preserve Acquisition Costs	\$ 3,438,100	\$ 3,541,244	\$ 3,647,460	\$ 3,756,868	\$ 3,869,560	\$ 3,985,644	\$ 4,105,208	\$ 4,228,352	\$ 4,355,192	\$ 4,485,852
GCW Preserve Acquisition Costs	\$ 6,479,848	\$ 6,674,517	\$ 6,874,376	\$ 7,080,209	\$ 7,292,250	\$ 7,510,715	\$ 7,736,338	\$ 7,968,553	\$ 8,207,526	\$ 8,453,457
BCV Preserve Acquisition Costs	\$ 425,483	\$ 438,308	\$ 451,384	\$ 464,861	\$ 478,739	\$ 493,034	\$ 507,880	\$ 523,144	\$ 538,826	\$ 554,924
Real Estate Transaction Fees	\$ 490,825	\$ 505,534	\$ 520,689	\$ 536,302	\$ 552,379	\$ 568,965	\$ 586,032	\$ 603,620	\$ 621,737	\$ 640,397
Total Preserve Acquisition Costs	\$ 10,834,256	\$ 11,159,603	\$ 11,493,910	\$ 11,838,240	\$ 12,192,928	\$ 12,558,358	\$ 12,935,459	\$ 13,323,669	\$ 13,723,280	\$ 14,134,630

Assumptions (in 2011 dollars):

Karst Preserve Acquisition - 50% of karst preserves will be purchased in relatively urban areas with 90% of the acreage purchased in fee simple and 10% acquired as conservation easements. 50% of karst preserves will be purchased in suburban areas with 60% of the acreage purchased in fee simple and 40% acquired as conservation easements.

GCW & BCV Preserve Acquisition - 5,000 acres of GCW preserve will be purchased in relatively suburban areas with 60% of the acreage purchased in fee simple and 40% acquired as conservation easements. The remaining 25,000 acres of GCW preserve and the entire 5,000 acres of BCV preserve will be purchased in relatively rural areas with 10% of the acreage purchased in fee simple and 90% acquired as conservation easements.

Urban fee simple land prices estimated at \$45,000/acre. Suburban fee simple land prices estimated at \$25,000/acre. Rural fee simple land prices estimated at \$4,500/acre. The cost of a conservation easement is assumed to be 33% of the fee simple per acre cost. Per acre land prices inflate annually by 3%. Real estate transaction fees are assumed to be 3% of the fee simple purchase price for all acquisitions.

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
PRESERVE SYSTEM ACQUISITIONS											
Preserve Acquisitions (GCW & BCV)											
Preserve Land Acquisitions (acres)	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,157	35,000
Cumulative Preserve System Size (acres)	24,507	25,674	26,841	28,008	29,175	30,342	31,509	32,676	33,843	35,000	

Assumptions: Preserve acquisitions equally distributed across Years 1 - 30 to assemble target preserve size of 35,000 ac with 30,000 ac GCW preserves and 5,000 ac BCV preserves. Estimated annual GCW acquisitions are 1,000 ac and estimated annual BCV acquisitions are 167 acres.

Preserve Acquisitions (Karst)

Preserve Land Acquisitions (acres)	80	80	80	80	80	80	80	80	80	80	2,400
Cumulative Preserve System Size (acres)	1,680	1,760	1,840	1,920	2,000	2,080	2,160	2,240	2,320	2,400	

Assumptions: Preserve acquisitions equally distributed across Years 1 - 30 to assemble target preserve size of 2,400 acres.

Acquisition Costs

Karst Preserve Acquisition Costs	\$ 4,620,420	\$ 4,759,040	\$ 4,901,804	\$ 5,048,860	\$ 5,200,296	\$ 5,356,288	\$ 5,516,996	\$ 5,682,516	\$ 5,852,968	\$ 6,028,560	\$ 121,709,028
GCW Preserve Acquisition Costs	\$ 8,707,165	\$ 8,968,114	\$ 9,237,207	\$ 9,514,659	\$ 9,799,872	\$ 10,093,778	\$ 10,396,661	\$ 10,708,622	\$ 11,029,828	\$ 10,947,765	\$ 228,954,842
BCV Preserve Acquisition Costs	\$ 571,591	\$ 588,692	\$ 606,360	\$ 624,613	\$ 643,317	\$ 662,606	\$ 682,496	\$ 702,987	\$ 724,079	\$ 701,131	\$ 15,013,799
Real Estate Transaction Fees	\$ 659,603	\$ 679,401	\$ 699,769	\$ 720,752	\$ 742,383	\$ 764,647	\$ 787,592	\$ 811,225	\$ 835,555	\$ 841,880	\$ 17,356,201
Total Preserve Acquisition Costs	\$ 14,558,778	\$ 14,995,247	\$ 15,445,140	\$ 15,908,884	\$ 16,385,868	\$ 16,877,319	\$ 17,383,745	\$ 17,905,350	\$ 18,442,430	\$ 18,519,335	\$ 383,033,870

Assumptions (in 2011 dollars):

Karst Preserve Acquisition - 50% of karst preserves will be purchased in relatively urban areas with 90% of the acreage purchased in fee simple and 10% acquired as conservation easements. 50% of karst preserves will be purchased in suburban areas with 60% of the acreage purchased in fee simple and 40% acquired as conservation easements.

GCW & BCV Preserve Acquisition - 5,000 acres of GCW preserve will be purchased in relatively suburban areas with 60% of the acreage purchased in fee simple and 40% acquired as conservation easements. The remaining 25,000 acres of GCW preserve and the entire 5,000 acres of BCV preserve will be purchased in relatively rural areas with 10% of the acreage purchased in fee simple and 90% acquired as conservation easements.

Urban fee simple land prices estimated at \$45,000/acre. Suburban fee simple land prices estimated at \$25,000/acre. Rural fee simple land prices estimated at \$4,500/acre. The cost of a conservation easement is assumed to be 33% of the fee simple per acre cost. Per acre land prices inflate annually by 3%. Real estate transaction fees are assumed to be 3% of the fee simple purchase price for all acquisitions.

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	1	2	3	4	5	6	7	8	9	10
LABOR AND ADMINISTRATIVE COSTS										
<u>Staffing</u>										
Number of ProgramManager/Senior Biologists	1	1	1	1	1	1	1	1	1	1
Program Manager/Senior Biologist Salaries	\$ 78,772	\$ 81,135	\$ 83,569	\$ 86,076	\$ 88,658	\$ 91,318	\$ 94,058	\$ 96,880	\$ 99,786	\$ 102,780
Number of Staff Biologists	-	-	-	-	1	1	1	1	2	2
Staff Biologist Salaries	\$ -	\$ -	\$ -	\$ -	\$ 68,669	\$ 70,729	\$ 72,851	\$ 75,037	\$ 154,576	\$ 159,214
Number of Technicians	1	1	1	1	1	1	1	1	2	2
Technician Salaries	\$ 17,314	\$ 17,833	\$ 18,368	\$ 18,919	\$ 19,487	\$ 20,072	\$ 20,674	\$ 21,294	\$ 43,866	\$ 45,182
Number of Preserve Rangers	-	-	-	-	-	-	-	-	-	1
Preserve Ranger Salaries	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 82,224
Number of Maintenance Personnel	-	-	-	-	-	-	-	-	-	-
Maintenance Personnel Salaries	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Staff Salaries	\$ 96,086	\$ 98,968	\$ 101,937	\$ 104,995	\$ 176,814	\$ 182,119	\$ 187,583	\$ 193,211	\$ 298,228	\$ 389,400

Assumptions (in 2011 dollars): Base salaries for RHCP staff are as follows: Program Manager/Senior Biologist (\$55,000/yr), Staff Biologist (\$42,600/yr), Technician (\$16,320/6 months), Preserve Rangers (\$44,000/yr), and Maintenance Personnel (\$33,700/yr). Annual salary costs include an additional 35% for benefits and are inflated annually by 3%. Staffing levels are scheduled based on preserve size and acquisition type (i.e. fee simple versus conservation easement).

Administrative Costs

Office Space Rent, Utilities, and Maintenance	\$ 5,076	\$ 5,229	\$ 5,385	\$ 5,547	\$ 9,520	\$ 9,805	\$ 10,100	\$ 10,405	\$ 17,144	\$ 22,070
Office Equipment	\$ 2,150	\$ -	\$ -	\$ -	\$ 1,613	\$ -	\$ 2,567	\$ -	\$ 2,723	\$ 2,804
Miscellaneous Office or Administrative Expenses	\$ 1,060	\$ 1,092	\$ 1,124	\$ 1,158	\$ 1,788	\$ 1,842	\$ 1,896	\$ 1,953	\$ 3,355	\$ 4,146
Software	\$ 1,591	\$ -	\$ -	\$ -	\$ 1,195	\$ -	\$ 1,900	\$ -	\$ 2,016	\$ 1,385
Total Administrative Costs	\$ 9,877	\$ 6,321	\$ 6,509	\$ 6,705	\$ 14,116	\$ 11,647	\$ 16,463	\$ 12,358	\$ 25,238	\$ 30,405

Assumptions (in 2011 dollars): Office space rent estimated at \$15.95/sq ft/year and assumes 200 sq ft/full time staff person and 100 sqft/technician. Rent costs include utilities and maintenance. Office equipment costs estimated at \$1,350 for each new program manager/senior biologist and staff biologist and \$1,350 for every 2 new technician and ranger positions. Office equipment replaced/updated every 7 years. Miscellaneous expenses estimated at \$500/year for each staff position. Software expenses estimated at \$1,000/full time staff and \$500/technician. Software are replaced/updated every 7 years. All costs are inflated annually by 3%.

Total Labor and Administrative Costs	\$ 105,963	\$ 105,289	\$ 108,446	\$ 111,700	\$ 190,930	\$ 193,766	\$ 204,046	\$ 205,569	\$ 323,466	\$ 419,805
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Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	11	12	13	14	15	16	17	18	19	20
LABOR AND ADMINISTRATIVE COSTS										
<u>Staffing</u>										
Number of ProgramManager/Senior Biologists	1	1	1	1	2	2	2	2	2	2
Program Manager/Senior Biologist Salaries	\$ 105,863	\$ 109,039	\$ 112,310	\$ 115,679	\$ 238,298	\$ 245,446	\$ 252,810	\$ 260,394	\$ 268,206	\$ 276,252
Number of Staff Biologists	2	2	3	3	3	3	4	4	4	4
Staff Biologist Salaries	\$ 163,990	\$ 168,910	\$ 260,967	\$ 268,797	\$ 276,861	\$ 285,168	\$ 391,632	\$ 403,380	\$ 415,480	\$ 427,944
Number of Technicians	2	2	3	3	3	3	4	4	4	4
Technician Salaries	\$ 46,538	\$ 47,934	\$ 74,058	\$ 76,281	\$ 78,570	\$ 80,928	\$ 111,140	\$ 114,476	\$ 117,912	\$ 121,448
Number of Preserve Rangers	1	1	1	1	1	1	1	1	2	2
Preserve Ranger Salaries	\$ 84,691	\$ 87,232	\$ 89,849	\$ 92,544	\$ 95,320	\$ 98,180	\$ 101,125	\$ 104,159	\$ 214,568	\$ 221,006
Number of Maintenance Personnel	-	-	-	-	1	1	1	1	1	1
Maintenance Personnel Salaries	\$ -	\$ -	\$ -	\$ -	\$ 73,005	\$ 75,195	\$ 77,451	\$ 79,775	\$ 82,168	\$ 84,633
Total Staff Salaries	\$ 401,082	\$ 413,115	\$ 537,184	\$ 553,301	\$ 762,054	\$ 784,917	\$ 934,158	\$ 962,184	\$ 1,098,334	\$ 1,131,283

Assumptions (in 2011 dollars): Base salaries for RHCP staff are as follows: Program Manager/Senior Biologist (\$55,000/yr), Staff Biologist (\$42,600/yr), Technician (\$16,320/6 months), Preserve Rangers (\$44,000/yr), and Maintenance Personnel (\$33,700/yr). Annual salary costs include an additional 35% for benefits and are inflated annually by 3%. Staffing levels are scheduled based on preserve size and acquisition type (i.e. fee simple versus conservation easement).

Administrative Costs

Office Space Rent, Utilities, and Maintenance	\$ 22,730	\$ 23,410	\$ 31,343	\$ 32,279	\$ 43,469	\$ 44,778	\$ 54,260	\$ 55,880	\$ 63,316	\$ 65,208
Office Equipment	\$ 1,925	\$ -	\$ 3,063	\$ -	\$ 5,415	\$ 1,116	\$ 3,447	\$ -	\$ 7,314	\$ -
Miscellaneous Office or Administrative Expenses	\$ 4,272	\$ 4,398	\$ 6,040	\$ 6,224	\$ 8,010	\$ 8,250	\$ 10,200	\$ 10,512	\$ 11,726	\$ 12,077
Software	\$ 1,427	\$ -	\$ 2,269	\$ 2,337	\$ 4,013	\$ -	\$ 2,554	\$ 1,755	\$ 4,518	\$ -
Total Administrative Costs	\$ 30,354	\$ 27,808	\$ 42,715	\$ 40,840	\$ 60,907	\$ 54,144	\$ 70,461	\$ 68,147	\$ 86,874	\$ 77,285

Assumptions (in 2011 dollars): Office space rent estimated at \$15.95/sq ft/year and assumes 200 sq ft/full time staff person and 100 sqft/technician. Rent costs include utilities and maintenance. Office equipment costs estimated at \$1,350 for each new program manager/senior biologist and staff biologist and \$1,350 for every 2 new technician and ranger positions. Office equipment replaced/updated every 7 years. Miscellaneous expenses estimated at \$500/year for each staff position. Software expenses estimated at \$1,000/full time staff and \$500/technician. Software are replaced/updated every 7 years. All costs are inflated annually by 3%.

Total Labor and Administrative Costs	\$ 431,436	\$ 440,923	\$ 579,899	\$ 594,141	\$ 822,961	\$ 839,061	\$ 1,004,619	\$ 1,030,331	\$ 1,185,208	\$ 1,208,568
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Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
LABOR AND ADMINISTRATIVE COSTS											
<u>Staffing</u>											
Number of ProgramManager/Senior Biologists	2	2	2	2	2	2	2	2	2	2	
Program Manager/Senior Biologist Salaries	\$ 284,540	\$ 293,076	\$ 301,868	\$ 310,924	\$ 320,252	\$ 329,860	\$ 339,756	\$ 349,948	\$ 360,446	\$ 371,260	\$ 6,149,259
Number of Staff Biologists	5	5	5	5	6	6	6	6	7	7	
Staff Biologist Salaries	\$ 550,980	\$ 567,510	\$ 584,535	\$ 602,070	\$ 744,156	\$ 766,482	\$ 789,474	\$ 813,156	\$ 977,144	\$ 1,006,460	\$ 11,066,172
Number of Technicians	5	5	5	5	6	6	6	6	7	7	
Technician Salaries	\$ 156,365	\$ 161,055	\$ 165,885	\$ 170,860	\$ 211,182	\$ 217,518	\$ 224,046	\$ 230,766	\$ 277,305	\$ 285,621	\$ 3,212,897
Number of Preserve Rangers	2	2	2	2	2	2	2	3	3	3	
Preserve Ranger Salaries	\$ 227,636	\$ 234,466	\$ 241,500	\$ 248,746	\$ 256,208	\$ 263,894	\$ 271,810	\$ 419,946	\$ 432,543	\$ 445,518	\$ 4,313,165
Number of Maintenance Personnel	1	1	1	1	1	1	1	1	1	1	
Maintenance Personnel Salaries	\$ 87,172	\$ 89,787	\$ 92,481	\$ 95,255	\$ 98,113	\$ 101,056	\$ 104,088	\$ 107,211	\$ 110,427	\$ 113,740	\$ 1,471,557
Total Staff Salaries	\$ 1,306,693	\$ 1,345,894	\$ 1,386,269	\$ 1,427,855	\$ 1,629,911	\$ 1,678,810	\$ 1,729,174	\$ 1,921,027	\$ 2,157,865	\$ 2,222,599	\$ 26,213,050

Assumptions (in 2011 dollars): Base salaries for RHCP staff are as follows: Program Manager/Senior Biologist (\$55,000/yr), Staff Biologist (\$42,600/yr), Technician (\$16,320/6 months), Preserve Rangers (\$44,000/yr), and Maintenance Personnel (\$33,700/yr). Annual salary costs include an additional 35% for benefits and are inflated annually by 3%. Staffing levels are scheduled based on preserve size and acquisition type (i.e. fee simple versus conservation easement).

Administrative Costs

Office Space Rent, Utilities, and Maintenance	\$ 76,325	\$ 78,625	\$ 80,975	\$ 83,400	\$ 96,208	\$ 99,092	\$ 102,060	\$ 112,620	\$ 127,611	\$ 131,439	\$ 1,525,309
Office Equipment	\$ 6,465	\$ -	\$ 4,116	\$ -	\$ 5,822	\$ -	\$ 4,632	\$ 4,772	\$ 4,914	\$ -	\$ 64,858
Miscellaneous Office or Administrative Expenses	\$ 14,355	\$ 14,790	\$ 15,240	\$ 15,690	\$ 18,309	\$ 18,853	\$ 19,414	\$ 21,168	\$ 24,220	\$ 24,940	\$ 288,102
Software	\$ 7,668	\$ 2,962	\$ 3,051	\$ -	\$ 7,554	\$ 3,333	\$ 3,433	\$ 8,256	\$ 7,284	\$ 3,751	\$ 74,252
Total Administrative Costs	\$ 104,813	\$ 96,377	\$ 103,382	\$ 99,090	\$ 127,893	\$ 121,278	\$ 129,539	\$ 146,816	\$ 164,029	\$ 160,130	\$ 1,952,521

Assumptions (in 2011 dollars): Office space rent estimated at \$15.95/sq ft/year and assumes 200 sq ft/full time staff person and 100 sqft/technician. Rent costs include utilities and maintenance. Office equipment costs estimated at \$1,350 for each new program manager/senior biologist and staff biologist and \$1,350 for every 2 new technician and ranger positions. Office equipment replaced/updated every 7 years. Miscellaneous expenses estimated at \$500/year for each staff position. Software expenses estimated at \$1,000/full time staff and \$500/technician. Software are replaced/updated every 7 years. All costs are inflated annually by 3%.

Total Labor and Administrative Costs	\$ 1,411,506	\$ 1,442,271	\$ 1,489,651	\$ 1,526,945	\$ 1,757,804	\$ 1,800,088	\$ 1,858,713	\$ 2,067,843	\$ 2,321,894	\$ 2,382,729	\$ 28,165,571
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Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	1	2	3	4	5	6	7	8	9	10
PRESERVE MANAGEMENT EQUIPMENT, MATERIALS, AND SPECIAL CONTRACT SERVICES										
Signage (GCW & BCV) Annual cost of \$760/1000 acres of fee simple preserve for perimeter and access point signage without replacement costs. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ -	\$ -	\$ 881	\$ -	\$ -	\$ -	\$ 991	\$ -	\$ -
Signage (Karst) Annual cost of \$240/80 acres for perimeter and access point signage without replacement costs. First purchase occurs in Year 2 of the Permit. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ 262	\$ 270	\$ 278	\$ 286	\$ 295	\$ 304	\$ 313	\$ 322	\$ 332
Fencing Costs (GCW & BCV) Estimated costs include \$316,800/1,000 acres of 8-foot game fence and gates for urban fee simple preserves and \$158,400/1,000 acres of 4-foot ranch fence and gates for the rural fee simple preserve. Fencing for conservation easements is assumed to be the responsibility of the property owner. The estimated costs includes installation labor and materials, and assumes two gates per 1,000 acres regardless of type of fencing. Costs also assume that the entire 1,000-acre boundary has no or inadequate fencing in place. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 391,592	\$ -	\$ -	\$ -	\$ -
Fencing Costs (Karst) Costs assume 50% of fencing will need 8-foot game fence, 25% will need 4-foot ranch fence, and 25% will not need fence (will be included within a larger preserve). The blended fencing/gate estimated cost is \$56,441/80 acres of karst preserve. The estimated cost includes installation labor and materials. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ 61,663	\$ 63,507	\$ 65,425	\$ 67,400	\$ 69,432	\$ 71,502	\$ 73,665	\$ 75,884	\$ 78,142
Cave Entrance Security (Karst) One cave gate or remote monitoring device (and installation) for each 80-acre karst preserve and no replacement costs. Purchase price for cave gate or remote monitoring device is \$5000/cave (in 2011 dollars) and costs inflate annually by 3%. The first purchase occurs on year 2 of the Permit.	\$ -	\$ 5,464	\$ 5,628	\$ 5,797	\$ 5,971	\$ 6,150	\$ 6,335	\$ 6,525	\$ 6,721	\$ 6,923
Cowbird Traps (BCV) Assumes one metal hybrid trap for each 500 acres of BCV preserve and traps will be replaced every 20 years. Purchase price for a new trap estimated at \$800. Includes operation costs such as milo seed to bait traps every season. Annual operation costs estimated at \$10/trap. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ -	\$ 911	\$ 12	\$ 12	\$ 1,009	\$ 25	\$ 26	\$ 1,115	\$ 41
Deer Population Control Contract Services (GCW & BCV) Estimated at \$2,300/year for each 1,000 acres of urban, fee simple preserve. Costs include labor and corn but does not include equipment. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,828	\$ 2,913	\$ 3,000	\$ 3,090	\$ 3,183

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	11	12	13	14	15	16	17	18	19	20
PRESERVE MANAGEMENT EQUIPMENT, MATERIALS, AND SPECIAL CONTRACT SERVICES										
Signage (GCW & BCV) Annual cost of \$760/1000 acres of fee simple preserve for perimeter and access point signage without replacement costs. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ 1,117	\$ -	\$ -	\$ 1,222	\$ -	\$ -	\$ -	\$ 1,376	\$ -
Signage (Karst) Annual cost of \$240/80 acres for perimeter and access point signage without replacement costs. First purchase occurs in Year 2 of the Permit. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 342	\$ 352	\$ 363	\$ 374	\$ 385	\$ 397	\$ 409	\$ 421	\$ 434	\$ 447
Fencing Costs (GCW & BCV) Estimated costs include \$316,800/1,000 acres of 8-foot game fence and gates for urban fee simple preserves and \$158,400/1,000 acres of 4-foot ranch fence and gates for the rural fee simple preserve. Fencing for conservation easements is assumed to be the responsibility of the property owner. The estimated costs includes installation labor and materials, and assumes two gates per 1,000 acres regardless of type of fencing. Costs also assume that the entire 1,000-acre boundary has no or inadequate fencing in place. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 226,196	\$ 467,580	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 558,314	\$ -	\$ -
Fencing Costs (Karst) Costs assume 50% of fencing will need 8-foot game fence, 25% will need 4-foot ranch fence, and 25% will not need fence (will be included within a larger preserve). The blended fencing/gate estimated cost is \$56,441/80 acres of karst preserve. The estimated cost includes installation labor and materials. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 80,493	\$ 82,900	\$ 85,383	\$ 87,923	\$ 90,556	\$ 93,284	\$ 96,068	\$ 98,946	\$ 101,918	\$ 104,984
Cave Entrance Security (Karst) One cave gate or remote monitoring device (and installation) for each 80-acre karst preserve and no replacement costs. Purchase price for cave gate or remote monitoring device is \$5000/cave (in 2011 dollars) and costs inflate annually by 3%. The first purchase occurs on year 2 of the Permit.	\$ 7,131	\$ 7,345	\$ 7,565	\$ 7,792	\$ 8,026	\$ 8,267	\$ 8,515	\$ 8,770	\$ 9,033	\$ 9,304
Cowbird Traps (BCV) Assumes one metal hybrid trap for each 500 acres of BCV preserve and traps will be replaced every 20 years. Purchase price for a new trap estimated at \$800. Includes operation costs such as milo seed to bait traps every season. Annual operation costs estimated at \$10/trap. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 43	\$ 1,233	\$ 60	\$ 62	\$ 1,362	\$ 83	\$ 85	\$ 1,506	\$ 108	\$ 111
Deer Population Control Contract Services (GCW & BCV) Estimated at \$2,300/year for each 1,000 acres of urban, fee simple preserve. Costs include labor and corn but does not include equipment. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ 3,278	\$ 6,752	\$ 6,954	\$ 7,162	\$ 7,376	\$ 7,598	\$ 7,826	\$ 12,090	\$ 12,453	\$ 12,828

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
PRESERVE MANAGEMENT EQUIPMENT, MATERIALS, AND SPECIAL CONTRACT SERVICES											
Signage (GCW & BCV) Annual cost of \$760/1000 acres of fee simple preserve for perimeter and access point signage without replacement costs. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ -	\$ 1,549	\$ -	\$ -	\$ -	\$ 1,743	\$ -	\$ -	\$ 1,904	\$ 10,783
Signage (Karst) Annual cost of \$240/80 acres for perimeter and access point signage without replacement costs. First purchase occurs in Year 2 of the Permit. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 460	\$ 474	\$ 488	\$ 503	\$ 518	\$ 534	\$ 550	\$ 567	\$ 584	\$ 602	\$ 11,866
Fencing Costs (GCW & BCV) Estimated costs include \$316,800/1,000 acres of 8-foot game fence and gates for urban fee simple preserves and \$158,400/1,000 acres of 4-foot ranch fence and gates for the rural fee simple preserve. Fencing for conservation easements is assumed to be the responsibility of the property owner. The estimated costs includes installation labor and materials, and assumes two gates per 1,000 acres regardless of type of fencing. Costs also assume that the entire 1,000-acre boundary has no or inadequate fencing in place. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ -	\$ 313,107	\$ 647,238	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 772,835	\$ -	\$ 3,376,862
Fencing Costs (Karst) Costs assume 50% of fencing will need 8-foot game fence, 25% will need 4-foot ranch fence, and 25% will not need fence (will be included within a larger preserve). The blended fencing/gate estimated cost is \$56,441/80 acres of karst preserve. The estimated cost includes installation labor and materials. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 108,145	\$ 111,399	\$ 114,747	\$ 118,190	\$ 121,726	\$ 125,394	\$ 129,156	\$ 133,013	\$ 137,019	\$ 141,120	\$ 2,788,985
Cave Entrance Security (Karst) One cave gate or remote monitoring device (and installation) for each 80-acre karst preserve and no replacement costs. Purchase price for cave gate or remote monitoring device is \$5000/cave (in 2011 dollars) and costs inflate annually by 3%. The first purchase occurs on year 2 of the Permit.	\$ 9,583	\$ 9,870	\$ 10,166	\$ 10,471	\$ 10,785	\$ 11,109	\$ 11,442	\$ 11,785	\$ 12,139	\$ 12,503	\$ 247,115
Cowbird Traps (BCV) Assumes one metal hybrid trap for each 500 acres of BCV preserve and traps will be replaced every 20 years. Purchase price for a new trap estimated at \$800. Includes operation costs such as milo seed to bait traps every season. Annual operation costs estimated at \$10/trap. Assumptions stated in 2011 dollars and inflated annually by 3%.	\$ 1,665	\$ 138	\$ 1,766	\$ 1,840	\$ 172	\$ 1,952	\$ 2,034	\$ 212	\$ 2,157	\$ 2,246	\$ 21,988
Deer Population Control Contract Services (GCW & BCV) Estimated at \$2,300/year for each 1,000 acres of urban, fee simple preserve. Costs include labor and corn but does not include equipment. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ 13,212	\$ 13,608	\$ 18,688	\$ 19,248	\$ 19,824	\$ 20,420	\$ 21,032	\$ 21,664	\$ 27,890	\$ 28,725	\$ 303,642

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	1	2	3	4	5	6	7	8	9	10
Deer Population Control Equipment (GCW & BCV) Equipment costs include one deer feeder and one ground blind for each 500 acres of preserve. Assumes 35 50-lb bags of deer corn per feeder during 8 week WTD hunting season plus two weeks of pre-season baiting. Equipment can be used either by a staff-operated deer population control program or by contract services. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ -	\$ -	\$ 1,656	\$ 568	\$ 585	\$ 603	\$ 621	\$ 640	\$ 2,635	\$ 1,357
Feral Hog Control - Equipment Only Assumes purchase of 1 corral trap/2,000 acres of preserve and 1 box trap per 3,000 acres of preserve. Cost of corral trap estimated at \$665/trap and cost of box trap estimated at \$400/trap. Does not include replacement or operations (bait) costs. Equipment can be used either by a staff-operated feral hog control program or by contract services. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ -	\$ 727	\$ 450	\$ 771	\$ -	\$ 1,310	\$ 843	\$ 522	\$ 894	\$ -
Fire Ant Control (BCV) Estimated at one pallet of fire ant bait (Spinosad) per 1,000 acres of BCV preserve. Cost is approximately \$4800 (in 2011 dollars) per pallet. First purchase scheduled for year 2 of the Permit. Costs inflate annually by 3%. Preserve staff to apply as an individual mound treatment as needed.	\$ -	\$ 5,245	\$ -	\$ -	\$ -	\$ 5,903	\$ -	\$ -	\$ -	\$ -
Fire Ant Control (Karst) Estimated cost of materials needed to treat fire ant mounds twice per year with boiling water within 165 feet of cave entrance is \$220/80 acres of preserve. Materials include rain collection barrels at each cave, fuel to heat water, and a hot water pressure washer for applying boiling water for \$5,000 (purchased in Year 3 of the Plan and replaced every 15 years). Assumptions stated in 2011 dollars and costs inflate annually by 3%. Assumes labor completed by staff.	\$ -	\$ 273	\$ 5,932	\$ 336	\$ 370	\$ 406	\$ 444	\$ 483	\$ 524	\$ 567
Vireo Habitat Restoration and Management - Mechanical Estimated at \$530/acre of BCV preserve (in 2011 dollars) and repeated every 15 years. Includes contract services for operator, transport, and fuel. First purchase occurs in year 2 of the Permit. Costs inflate annually by 3%.	\$ -	\$ 96,717	\$ 99,619	\$ 102,608	\$ 105,686	\$ 108,857	\$ 112,123	\$ 115,487	\$ 118,952	\$ 122,521
General Vegetation Management - Equipment and Materials Estimated costs are for equipment and materials for general vegetation management on all preserves, such as herbicides, chainsaws, safety equipment, and related items. Costs estimated at \$650 for each 3,000 acres of total preserve. Assumes labor completed by staff. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ -	\$ -	\$ 732	\$ -	\$ 777	\$ -	\$ -	\$ 849	\$ -	\$ 900
Vegetation Enhancement (Karst - 2,400 acre preserve) Estimated at \$40/year for each 80 acres of preserve (in 2011 dollars) and the management activity is repeated every 5 years. Costs are for native seed mixes that will contribute to the overall health and diversity of native vegetation within 345 feet of cave entrance. The first purchase occurs in year 2 of the Permit. Costs inflate annually by 3%.	\$ -	\$ 43	\$ 44	\$ 45	\$ 92	\$ 94	\$ 96	\$ 98	\$ 100	\$ 156

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	11	12	13	14	15	16	17	18	19	20
Deer Population Control Equipment (GCW & BCV) Equipment costs include one deer feeder and one ground blind for each 500 acres of preserve. Assumes 35 50-lb bags of deer corn per feeder during 8 week WTD hunting season plus two weeks of pre-season baiting. Equipment can be used either by a staff-operated deer population control program or by contract services. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ 1,397	\$ 1,439	\$ 1,483	\$ 1,527	\$ 3,936	\$ 2,432	\$ 2,505	\$ 2,581	\$ 2,659	\$ 5,477
Feral Hog Control - Equipment Only Assumes purchase of 1 corral trap/2,000 acres of preserve and 1 box trap per 3,000 acres of preserve. Cost of corral trap estimated at \$665/trap and cost of box trap estimated at \$400/trap. Does not include replacement or operations (bait) costs. Equipment can be used either by a staff-operated feral hog control program or by contract services. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ 1,520	\$ 977	\$ 606	\$ 1,036	\$ -	\$ 1,761	\$ -	\$ 1,868	\$ 1,201	\$ -
Fire Ant Control (BCV) Estimated at one pallet of fire ant bait (Spinosad) per 1,000 acres of BCV preserve. Cost is approximately \$4800 (in 2011 dollars) per pallet. First purchase scheduled for year 2 of the Permit. Costs inflate annually by 3%. Preserve staff to apply as an individual mound treatment as needed.	\$ -	\$ 7,048	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,415	\$ -	\$ -
Fire Ant Control (Karst) Estimated cost of materials needed to treat fire ant mounds twice per year with boiling water within 165 feet of cave entrance is \$220/80 acres of preserve. Materials include rain collection barrels at each cave, fuel to heat water, and a hot water pressure washer for applying boiling water for \$5,000 (purchased in Year 3 of the Plan and replaced every 15 years). Assumptions stated in 2011 dollars and costs inflate annually by 3%. Assumes labor completed by staff.	\$ 613	\$ 661	\$ 711	\$ 764	\$ 9,182	\$ 1,223	\$ 1,293	\$ 1,368	\$ 1,445	\$ 1,525
Vireo Habitat Restoration and Management - Mechanical Estimated at \$530/acre of BCV preserve (in 2011 dollars) and repeated every 15 years. Includes contract services for operator, transport, and fuel. First purchase occurs in year 2 of the Permit. Costs inflate annually by 3%.	\$ 126,197	\$ 129,983	\$ 133,882	\$ 137,898	\$ 142,035	\$ 292,592	\$ 301,370	\$ 310,412	\$ 319,724	\$ 329,316
General Vegetation Management - Equipment and Materials Estimated costs are for equipment and materials for general vegetation management on all preserves, such as herbicides, chainsaws, safety equipment, and related items. Costs estimated at \$650 for each 3,000 acres of total preserve. Assumes labor completed by staff. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ -	\$ -	\$ 984	\$ -	\$ 1,044	\$ -	\$ 1,107	\$ -	\$ -	\$ 1,209
Vegetation Enhancement (Karst - 2,400 acre preserve) Estimated at \$40/year for each 80 acres of preserve (in 2011 dollars) and the management activity is repeated every 5 years. Costs are for native seed mixes that will contribute to the overall health and diversity of native vegetation within 345 feet of cave entrance. The first purchase occurs in year 2 of the Permit. Costs inflate annually by 3%.	\$ 162	\$ 168	\$ 174	\$ 180	\$ 248	\$ 256	\$ 264	\$ 272	\$ 280	\$ 360

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
Deer Population Control Equipment (GCW & BCV) Equipment costs include one deer feeder and one ground blind for each 500 acres of preserve. Assumes 35 50-lb bags of deer corn per feeder during 8 week WTD hunting season plus two weeks of pre-season baiting. Equipment can be used either by a staff-operated deer population control program or by contract services. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ 3,760	\$ 3,872	\$ 3,987	\$ 4,108	\$ 4,231	\$ 7,624	\$ 5,611	\$ 5,779	\$ 5,954	\$ 6,132	\$ 85,158
Feral Hog Control - Equipment Only Assumes purchase of 1 corral trap/2,000 acres of preserve and 1 box trap per 3,000 acres of preserve. Cost of corral trap estimated at \$665/trap and cost of box trap estimated at \$400/trap. Does not include replacement or operations (bait) costs. Equipment can be used either by a staff-operated feral hog control program or by contract services. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ 2,041	\$ -	\$ 1,351	\$ 2,230	\$ -	\$ 2,366	\$ -	\$ 1,567	\$ 971	\$ 1,662	\$ 26,674
Fire Ant Control (BCV) Estimated at one pallet of fire ant bait (Spinosad) per 1,000 acres of BCV preserve. Cost is approximately \$4800 (in 2011 dollars) per pallet. First purchase scheduled for year 2 of the Permit. Costs inflate annually by 3%. Preserve staff to apply as an individual mound treatment as needed.	\$ -	\$ -	\$ -	\$ 10,048	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,996	\$ 48,655
Fire Ant Control (Karst) Estimated cost of materials needed to treat fire ant mounds twice per year with boiling water within 165 feet of cave entrance is \$220/80 acres of preserve. Materials include rain collection barrels at each cave, fuel to heat water, and a hot water pressure washer for applying boiling water for \$5,000 (purchased in Year 3 of the Plan and replaced every 15 years). Assumptions stated in 2011 dollars and costs inflate annually by 3%. Assumes labor completed by staff.	\$ 1,610	\$ 1,697	\$ 1,788	\$ 1,884	\$ 1,984	\$ 2,088	\$ 2,197	\$ 2,310	\$ 2,428	\$ 15,053	\$ 61,156
Vireo Habitat Restoration and Management - Mechanical Estimated at \$530/acre of BCV preserve (in 2011 dollars) and repeated every 15 years. Includes contract services for operator, transport, and fuel. First purchase occurs in year 2 of the Permit. Costs inflate annually by 3%.	\$ 339,196	\$ 349,372	\$ 359,854	\$ 370,650	\$ 381,770	\$ 393,224	\$ 405,020	\$ 417,170	\$ 429,686	\$ 221,288	\$ 6,873,209
General Vegetation Management - Equipment and Materials Estimated costs are for equipment and materials for general vegetation management on all preserves, such as herbicides, chainsaws, safety equipment, and related items. Costs estimated at \$650 for each 3,000 acres of total preserve. Assumes labor completed by staff. Assumptions stated in 2011 dollars and costs inflated annually by 3%.	\$ -	\$ 1,282	\$ -	\$ -	\$ 1,401	\$ -	\$ 1,486	\$ -	\$ 1,577	\$ -	\$ 13,348
Vegetation Enhancement (Karst - 2,400 acre preserve) Estimated at \$40/year for each 80 acres of preserve (in 2011 dollars) and the management activity is repeated every 5 years. Costs are for native seed mixes that will contribute to the overall health and diversity of native vegetation within 345 feet of cave entrance. The first purchase occurs in year 2 of the Permit. Costs inflate annually by 3%.	\$ 370	\$ 380	\$ 390	\$ 400	\$ 492	\$ 504	\$ 522	\$ 540	\$ 558	\$ 576	\$ 7,864

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	1	2	3	4	5	6	7	8	9	10
Trash Removal	\$ -	\$ -	\$ 1,126	\$ -	\$ -	\$ 1,231	\$ -	\$ -	\$ 1,345	\$ -
<p>Estimated at \$1000 for each 1,000 acres of fee simple preserve (in 2011 dollars). The first purchase occurs in year 2 of Permit. Costs inflate annually by 3%.</p>										
Infrastructure Management (GCW & BCV)	\$ -	\$ 1,639	\$ -	\$ 1,739	\$ -	\$ 1,845	\$ -	\$ 1,957	\$ -	\$ 2,076
<p>Estimated at \$1,500 for each 500 acres of fee simple preserve (in 2011 dollars), and the management activity is repeated every 10 years. Infrastructure management activities include road, trail, and existing infrastructure maintenance and repair. The first purchase occurs in year 2 of the Permit. Cost inflated annually at 3%.</p>										
Field Equipment and Miscellaneous Items (GCW & BCV)	\$ 1,803	\$ 218	\$ 224	\$ 230	\$ 2,145	\$ 366	\$ 378	\$ 390	\$ 2,686	\$ 690
<p>Field equipment is estimated at \$1,500 for each new biologist and a \$100/year allowance per biologist and technician for miscellaneous, need-based items. Field equipment includes items such as binoculars, gps units, digital cameras, field notebooks, and field guides. Assumptions are stated in 2011 dollars and costs are inflated annually by 3%.</p>										
Field Equipment and Miscellaneous Materials (Karst)	\$ -	\$ -	\$ 2,679	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<p>Costs include associated karst faunal survey equipment for four karst permitted biologists on staff by year 30 of the Permit. Estimated costs (in 2011 dollars) include a freezer for storage of collected specimens (purchased in year 3 and replaced in year 30 of the Permit) for \$700, a compound microscope for taxonomic identification estimated at \$130 (purchased in year 3 and replaced in year 30 of the Permit), and karst faunal survey equipment (such as ropes, ladders, safety equipment, and headlamps) for \$1,550 for each permitted biologist. Costs are inflated annually by 3%.</p>										
Non-commissioned Ranger Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,771
<p>Estimated at \$2,000 for each new ranger (in 2011 dollars) with no replacement costs. Equipment includes items typical of biologist field equipment plus a long-range handheld radio to contact emergency personnel. Costs inflated annually by 3%.</p>										
Vehicles	\$ 26,523	\$ -	\$ -	\$ -	\$ 29,852	\$ -	\$ -	\$ 32,620	\$ -	\$ -
<p>Assumes one vehicle for every two full time staff in each category, and vehicles replaced every 8 years. Vehicle cost estimated at \$25,000 (in 2011 dollars) and inflated annually by 3%.</p>										
Vehicle Operating Cost	\$ 9,523	\$ 9,861	\$ 10,200	\$ 10,541	\$ 21,766	\$ 22,452	\$ 23,140	\$ 23,832	\$ 24,526	\$ 25,222
<p>Per vehicle operating costs estimated based on 15,000 miles/year at the federal tax reimbursement rate of \$0.51 per mile and \$1,200/year per vehicle for insurance. Costs inflate annually by 3%.</p>										
Total Preserve Management Costs	\$ 37,849	\$ 182,112	\$ 192,977	\$ 189,231	\$ 234,942	\$ 614,372	\$ 218,723	\$ 261,397	\$ 238,795	\$ 244,881

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	11	12	13	14	15	16	17	18	19	20
Trash Removal	\$ -	\$ 1,470	\$ -	\$ -	\$ 1,606	\$ -	\$ -	\$ 1,755	\$ -	\$ -
<p>Estimated at \$1000 for each 1,000 acres of fee simple preserve (in 2011 dollars). The first purchase occurs in year 2 of Permit. Costs inflate annually by 3%.</p>										
Infrastructure Management (GCW & BCV)	\$ 2,138	\$ 2,202	\$ 2,268	\$ 2,336	\$ 4,812	\$ -	\$ 5,104	\$ -	\$ 5,416	\$ 2,789
<p>Estimated at \$1,500 for each 500 acres of fee simple preserve (in 2011 dollars), and the management activity is repeated every 10 years. Infrastructure management activities include road, trail, and existing infrastructure maintenance and repair. The first purchase occurs in year 2 of the Permit. Cost inflated annually at 3%.</p>										
Field Equipment and Miscellaneous Items (GCW & BCV)	\$ 710	\$ 730	\$ 3,318	\$ 1,085	\$ 6,092	\$ 1,320	\$ 4,252	\$ 1,750	\$ 1,800	\$ 1,850
<p>Field equipment is estimated at \$1,500 for each new biologist and a \$100/year allowance per biologist and technician for miscellaneous, need-based items. Field equipment includes items such as binoculars, gps units, digital cameras, field notebooks, and field guides. Assumptions are stated in 2011 dollars and costs are inflated annually by 3%.</p>										
Field Equipment and Miscellaneous Materials (Karst)	\$ -	\$ 2,277	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,800	\$ -
<p>Costs include associated karst faunal survey equipment for four karst permitted biologists on staff by year 30 of the Permit. Estimated costs (in 2011 dollars) include a freezer for storage of collected specimens (purchased in year 3 and replaced in year 30 of the Permit) for \$700, a compound microscope for taxonomic identification estimated at \$130 (purchased in year 3 and replaced in year 30 of the Permit), and karst faunal survey equipment (such as ropes, ladders, safety equipment, and headlamps) for \$1,550 for each permitted biologist. Costs are inflated annually by 3%.</p>										
Non-commissioned Ranger Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,615	\$ -
<p>Estimated at \$2,000 for each new ranger (in 2011 dollars) with no replacement costs. Equipment includes items typical of biologist field equipment plus a long-range handheld radio to contact emergency personnel. Costs inflated annually by 3%.</p>										
Vehicles	\$ 35,645	\$ 36,714	\$ 37,815	\$ -	\$ 40,117	\$ 41,321	\$ 42,561	\$ 43,838	\$ -	\$ 93,016
<p>Assumes one vehicle for every two full time staff in each category, and vehicles replaced every 8 years. Vehicle cost estimated at \$25,000 (in 2011 dollars) and inflated annually by 3%.</p>										
Vehicle Operating Cost	\$ 38,883	\$ 39,936	\$ 54,660	\$ 56,076	\$ 71,875	\$ 73,665	\$ 91,452	\$ 94,518	\$ 97,596	\$ 100,686
<p>Per vehicle operating costs estimated based on 15,000 miles/year at the federal tax reimbursement rate of \$0.51 per mile and \$1,200/year per vehicle for insurance. Costs inflate annually by 3%.</p>										
Total Preserve Management Costs	\$ 524,748	\$ 790,884	\$ 336,226	\$ 304,215	\$ 389,875	\$ 524,198	\$ 562,812	\$ 1,146,824	\$ 561,858	\$ 663,903

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
Trash Removal	\$ 1,918	\$ -	\$ 2,035	\$ -	\$ -	\$ 2,224	\$ -	\$ -	\$ 2,431	\$ -	\$ 17,141
<p>Estimated at \$1000 for each 1,000 acres of fee simple preserve (in 2011 dollars). The first purchase occurs in year 2 of Permit. Costs inflate annually by 3%.</p>											
Infrastructure Management (GCW & BCV)	\$ 5,746	\$ 2,959	\$ 6,096	\$ 6,278	\$ 3,233	\$ 6,660	\$ 3,430	\$ 10,599	\$ 3,639	\$ 11,244	\$ 96,205
<p>Estimated at \$1,500 for each 500 acres of fee simple preserve (in 2011 dollars), and the management activity is repeated every 10 years. Infrastructure management activities include road, trail, and existing infrastructure maintenance and repair. The first purchase occurs in year 2 of the Permit. Cost inflated annually at 3%.</p>											
Field Equipment and Miscellaneous Items (GCW & BCV)	\$ 5,165	\$ 2,364	\$ 2,436	\$ 2,508	\$ 6,243	\$ 3,094	\$ 3,192	\$ 3,290	\$ 7,511	\$ 3,984	\$ 71,824
<p>Field equipment is estimated at \$1,500 for each new biologist and a \$100/year allowance per biologist and technician for miscellaneous, need-based items. Field equipment includes items such as binoculars, gps units, digital cameras, field notebooks, and field guides. Assumptions are stated in 2011 dollars and costs are inflated annually by 3%.</p>											
Field Equipment and Miscellaneous Materials (Karst)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,547	\$ -	\$ -	\$ 2,076	\$ 13,379
<p>Costs include associated karst faunal survey equipment for four karst permitted biologists on staff by year 30 of the Permit. Estimated costs (in 2011 dollars) include a freezer for storage of collected specimens (purchased in year 3 and replaced in year 30 of the Permit) for \$700, a compound microscope for taxonomic identification estimated at \$130 (purchased in year 3 and replaced in year 30 of the Permit), and karst faunal survey equipment (such as ropes, ladders, safety equipment, and headlamps) for \$1,550 for each permitted biologist. Costs are inflated annually by 3%.</p>											
Non-commissioned Ranger Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,717	\$ -	\$ -	\$ 11,103
<p>Estimated at \$2,000 for each new ranger (in 2011 dollars) with no replacement costs. Equipment includes items typical of biologist field equipment plus a long-range handheld radio to contact emergency personnel. Costs inflated annually by 3%.</p>											
Vehicles	\$ -	\$ 49,340	\$ -	\$ 104,690	\$ 107,830	\$ -	\$ -	\$ 117,828	\$ 121,362	\$ -	\$ 961,072
<p>Assumes one vehicle for every two full time staff in each category, and vehicles replaced every 8 years. Vehicle cost estimated at \$25,000 (in 2011 dollars) and inflated annually by 3%.</p>											
Vehicle Operating Cost	\$ 103,788	\$ 106,902	\$ 110,028	\$ 113,166	\$ 135,702	\$ 139,398	\$ 143,108	\$ 147,882	\$ 174,488	\$ 179,984	\$ 2,254,856
<p>Per vehicle operating costs estimated based on 15,000 miles/year at the federal tax reimbursement rate of \$0.51 per mile and \$1,200/year per vehicle for insurance. Costs inflate annually by 3%.</p>											
Total Preserve Management Costs	\$ 596,659	\$ 966,765	\$ 1,282,608	\$ 766,214	\$ 795,911	\$ 716,592	\$ 734,070	\$ 878,922	\$ 1,703,229	\$ 641,096	\$ 17,302,885

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	1	2	3	4	5	6	7	8	9	10
Other Conservation Measures										
Additional Karst Research and Conservation Estimated at \$15,000/year for 10 years. Allocated funds will be used to assist in the discovery of new features and species localities, contribute to management activities at undermanaged features not within the preserve, and karst-based research. Costs inflate annually by 3%.	\$ 15,914	\$ 16,391	\$ 16,883	\$ 17,389	\$ 17,911	\$ 18,448	\$ 19,001	\$ 19,571	\$ 20,158	\$ 20,763
Education and Outreach Estimated costs include \$1,600 every two years for professionally printed education and outreach materials and \$200/year for other miscellaneous items. Assumptions stated in 2011 dollars and costs inflate annually by 3%.	\$ -	\$ 1,966	\$ 225	\$ 2,086	\$ 239	\$ 2,213	\$ 253	\$ 2,348	\$ 269	\$ 2,492
Contingency										
Contingency Funding Estimated as 10% of the annual preserve management budget, capped at \$30,000 per year. Costs inflate annually by 3%.	\$ 3,785	\$ 18,211	\$ 19,298	\$ 18,923	\$ 23,494	\$ 36,896	\$ 21,872	\$ 26,140	\$ 23,879	\$ 24,488
TOTAL ESTIMATED SEP-HCP COSTS										
Total Estimated Plan Costs (w/o Land Acquisitions)	\$ 163,511	\$ 323,969	\$ 337,829	\$ 339,329	\$ 467,516	\$ 865,695	\$ 463,896	\$ 515,025	\$ 606,567	\$ 712,429
Total Estimated Plan Costs (with Land Acquisitions)	\$ 8,225,129	\$ 8,627,222	\$ 8,890,532	\$ 9,148,471	\$ 9,541,240	\$ 10,211,499	\$ 10,090,133	\$ 10,429,649	\$ 10,818,520	\$ 11,230,814

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	11	12	13	14	15	16	17	18	19	20
Other Conservation Measures										
Additional Karst Research and Conservation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Estimated at \$15,000/year for 10 years. Allocated funds will be used to assist in the discovery of new features and species localities, contribute to management activities at undermanaged features not within the preserve, and karst-based research. Costs inflate annually by 3%.										
Education and Outreach	\$ 285	\$ 2,643	\$ 303	\$ 2,804	\$ 321	\$ 2,975	\$ 341	\$ 3,156	\$ 362	\$ 3,349
Estimated costs include \$1,600 every two years for professionally printed education and outreach materials and \$200/year for other miscellaneous items. Assumptions stated in 2011 dollars and costs inflate annually by 3%.										
Contingency										
Contingency Funding	\$ 42,773	\$ 44,056	\$ 33,623	\$ 30,422	\$ 38,987	\$ 49,585	\$ 51,073	\$ 52,605	\$ 54,183	\$ 55,808
Estimated as 10% of the annual preserve management budget, capped at \$30,000 per year. Costs inflate annually by 3%.										
TOTAL ESTIMATED SEP-HCP COSTS										
Total Estimated Plan Costs (w/o Land Acquisitions)	\$ 999,242	\$ 1,278,506	\$ 950,051	\$ 931,582	\$ 1,252,144	\$ 1,415,819	\$ 1,618,845	\$ 2,232,916	\$ 1,801,611	\$ 1,931,628
Total Estimated Plan Costs (with Land Acquisitions)	\$ 11,833,498	\$ 12,438,109	\$ 12,443,960	\$ 12,769,822	\$ 13,445,072	\$ 13,974,177	\$ 14,554,303	\$ 15,556,585	\$ 15,524,891	\$ 16,066,258

Appendix F. Estimated SEP-HCP Implementation Costs

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
Other Conservation Measures											
Additional Karst Research and Conservation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	182,429
Estimated at \$15,000/year for 10 years. Allocated funds will be used to assist in the discovery of new features and species localities, contribute to management activities at undermanaged features not within the preserve, and karst-based research. Costs inflate annually by 3%.											
Education and Outreach	\$ 384	\$ 3,553	\$ 408	\$ 3,770	\$ 433	\$ 4,001	\$ 459	\$ 4,245	\$ 487	\$ 4,504	50,874
Estimated costs include \$1,600 every two years for professionally printed education and outreach materials and \$200/year for other miscellaneous items. Assumptions stated in 2011 dollars and costs inflate annually by 3%.											
Contingency											
Contingency Funding	\$ 57,482	\$ 59,206	\$ 60,982	\$ 62,811	\$ 64,695	\$ 66,636	\$ 68,635	\$ 70,694	\$ 72,815	\$ 64,110	1,318,167
Estimated as 10% of the annual preserve management budget, capped at \$30,000 per year. Costs inflate annually by 3%.											
TOTAL ESTIMATED SEP-HCP COSTS											
Total Estimated Plan Costs (w/o Land Acquisitions)	\$ 2,066,031	\$ 2,471,795	\$ 2,833,649	\$ 2,359,740	\$ 2,618,843	\$ 2,587,317	\$ 2,661,877	\$ 3,021,704	\$ 4,098,425	\$ 3,092,438	\$ 57,845,448
Total Estimated Plan Costs (with Land Acquisitions)	\$ 16,624,809	\$ 17,467,042	\$ 18,278,788	\$ 18,268,624	\$ 19,004,710	\$ 19,464,636	\$ 20,045,621	\$ 20,927,054	\$ 22,540,855	\$ 21,611,774	\$ 430,053,796

Appendix F. Estimated SEP-HCP Revenues.

Plan Year:	1	2	3	4	5	6	7	8	9	10
PARTICIPATION FEES										
Application Fees										
GCW/BCV Application Fees	\$ 4,954	\$ 5,103	\$ 5,256	\$ 5,414	\$ 5,576	\$ 5,744	\$ 5,916	\$ 6,093	\$ 6,276	\$ 6,464
Karst Application Fees	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750
GCW/BCV application fees modeled at \$5 per conservation credit sold and karst application fees are modeled at \$5 per acre of Karst Zone 1-4 participation.										
Conservation Credit Sales										
GCW Conservation Credits Sold	800	800	800	800	800	800	800	800	800	800
GCW Credit Sale Revenue	\$ 4,243,600	\$ 4,370,908	\$ 4,502,035	\$ 4,637,096	\$ 4,776,209	\$ 4,919,495	\$ 5,067,080	\$ 5,219,093	\$ 5,375,666	\$ 5,536,935
BCV Conservation Credits Sold	134	134	134	134	134	134	134	134	134	134
BCV Credit Sale Revenue	\$ 710,803	\$ 732,127	\$ 754,091	\$ 776,714	\$ 800,015	\$ 824,015	\$ 848,736	\$ 874,198	\$ 900,424	\$ 927,437
Assumes that credits are sold at a rate equivalent to acres of preserve acquired and one credit is created from each acre of habitat that is protected, excluding buffer acreage. Credits are sold at \$5,000 per credit and base credit prices are increased annually by 3%.										
Karst Participation Fees										
Karst Zone 3 & 4 Participation (acres)	290	290	290	290	290	290	290	290	290	290
Karst Zone 3 & 4 Participation Fees	\$ 30,766	\$ 31,689	\$ 32,640	\$ 33,619	\$ 34,628	\$ 35,666	\$ 36,736	\$ 37,838	\$ 38,974	\$ 40,143
Karst Zone 1 & 2 Participation (acres)	260	260	260	260	260	260	260	260	260	260
Karst Zone 1 & 2 Participation Fees	\$ 137,917	\$ 142,055	\$ 146,316	\$ 150,706	\$ 155,227	\$ 159,884	\$ 164,680	\$ 169,621	\$ 174,709	\$ 179,950
Occupied Cave Zone B Participation (caves)	0	0	1	0	0	1	0	0	1	1
Occupied Cave Zone B Participation Fees	\$ -	\$ -	\$ 45,020	\$ -	\$ -	\$ 49,195	\$ -	\$ -	\$ 53,757	\$ 55,369
Occupied Cave Zone A Participation (caves)	0	0	0	0	1	0	0	0	0	1
Occupied Cave Zone A Participation Fees	\$ -	\$ -	\$ -	\$ -	\$ 477,621	\$ -	\$ -	\$ -	\$ -	\$ 553,694
Assumes that authorized impacts over Karst Zones are distributed evenly over Plan duration. Assumes that caves affected by participation within Occupied Cave Zones are 50% of the total number of affected caves (18 caves), with 66% of OCZ caves participating at Zone B fees (12 caves) and 33% at Zone A fees (6 caves). OCZ Zone B participation scheduled at one every 3 years and at YR 10 and YR 20. OCZ Zone A participation scheduled at one every 5 years.										
Participation Fees include: Karst Zone 3 & 4 = \$100/acre; Karst Zone 1 & 2 = \$500/acre; OCZ B = \$40,000 per cave; OCZ A = \$400,000 per cave. Base fees are increased by 3% annually.										
Total Participation Fee Revenue	\$ 5,130,791	\$ 5,284,632	\$ 5,488,109	\$ 5,606,298	\$ 6,252,026	\$ 5,996,749	\$ 6,125,899	\$ 6,309,593	\$ 6,552,555	\$ 7,302,743

Appendix F. Estimated SEP-HCP Revenues.

Plan Year:	11	12	13	14	15	16	17	18	19	20
PARTICIPATION FEES										
Application Fees										
GCW/BCV Application Fees	\$ 6,658	\$ 6,858	\$ 7,064	\$ 7,276	\$ 7,494	\$ 7,719	\$ 7,950	\$ 8,189	\$ 8,435	\$ 8,688
Karst Application Fees	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750
GCW/BCV application fees modeled at \$5 per conservation credit sold and karst application fees are modeled at \$5 per acre of Karst Zone 1-4 participation.										
Conservation Credit Sales										
GCW Conservation Credits Sold	800	800	800	800	800	800	800	800	800	800
GCW Credit Sale Revenue	\$ 5,703,044	\$ 5,874,135	\$ 6,050,359	\$ 6,231,870	\$ 6,418,826	\$ 6,611,391	\$ 6,809,732	\$ 7,014,024	\$ 7,224,445	\$ 7,441,178
BCV Conservation Credits Sold	134	134	134	134	134	134	134	134	134	134
BCV Credit Sale Revenue	\$ 955,260	\$ 983,918	\$ 1,013,435	\$ 1,043,838	\$ 1,075,153	\$ 1,107,408	\$ 1,140,630	\$ 1,174,849	\$ 1,210,095	\$ 1,246,397
Assumes that credits are sold at a rate equivalent to acres of preserve acquired and one credit is created from each acre of habitat that is protected, excluding buffer acreage. Credits are sold at \$5,000 per credit and base credit prices are increased annually by 3%.										
Karst Participation Fees										
Karst Zone 3 & 4 Participation (acres)	290	290	290	290	290	290	290	290	290	290
Karst Zone 3 & 4 Participation Fees	\$ 41,347	\$ 42,587	\$ 43,865	\$ 45,181	\$ 46,536	\$ 47,933	\$ 49,371	\$ 50,852	\$ 52,377	\$ 53,949
Karst Zone 1 & 2 Participation (acres)	260	260	260	260	260	260	260	260	260	260
Karst Zone 1 & 2 Participation Fees	\$ 185,349	\$ 190,909	\$ 196,637	\$ 202,536	\$ 208,612	\$ 214,870	\$ 221,316	\$ 227,956	\$ 234,794	\$ 241,838
Occupied Cave Zone B Participation (caves)	0	1	0	0	1	0	0	1	0	1
Occupied Cave Zone B Participation Fees	\$ -	\$ 58,741	\$ -	\$ -	\$ 64,188	\$ -	\$ -	\$ 70,140	\$ -	\$ 74,412
Occupied Cave Zone A Participation (caves)	0	0	0	0	1	0	0	0	0	1
Occupied Cave Zone A Participation Fees	\$ -	\$ -	\$ -	\$ -	\$ 641,883	\$ -	\$ -	\$ -	\$ -	\$ 744,118
Assumes that authorized impacts over Karst Zones are distributed evenly over Plan duration. Assumes that caves affected by participation within Occupied Cave Zones are 50% of the total number of affected caves (18 caves), with 66% of OCZ caves participating at Zone B fees (12 caves) and 33% at Zone A fees (6 caves). OCZ Zone B participation scheduled at one every 3 years and at YR 10 and YR 20. OCZ Zone A participation scheduled at one every 5 years.										
Participation Fees include: Karst Zone 3 & 4 = \$100/acre; Karst Zone 1 & 2 = \$500/acre; OCZ B = \$40,000 per cave; OCZ A = \$400,000 per cave. Base fees are increased by 3% annually.										
Total Participation Fee Revenue	\$ 6,894,408	\$ 7,159,899	\$ 7,314,110	\$ 7,533,450	\$ 8,465,442	\$ 7,992,070	\$ 8,231,750	\$ 8,548,760	\$ 8,732,896	\$ 9,813,330

Appendix F. Estimated SEP-HCP Revenues.

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
PARTICIPATION FEES											
Application Fees											
GCW/BCV Application Fees	\$ 8,948	\$ 9,217	\$ 9,493	\$ 9,778	\$ 10,071	\$ 10,373	\$ 10,685	\$ 11,005	\$ 11,335	\$ 11,425	\$ 235,458
Karst Application Fees	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 2,750	\$ 82,500
GCW/BCV application fees modeled at \$5 per conservation credit sold and karst application fees are modeled at \$5 per acre of Karst Zone 1-4 participation.											
Conservation Credit Sales											
GCW Conservation Credits Sold	800	800	800	800	800	800	800	800	800	800	24,000
GCW Credit Sale Revenue	\$ 7,664,414	\$ 7,894,346	\$ 8,131,176	\$ 8,375,112	\$ 8,626,365	\$ 8,885,156	\$ 9,151,711	\$ 9,426,262	\$ 9,709,050	\$ 10,000,321	\$ 201,891,034
BCV Conservation Credits Sold	134	134	134	134	134	134	134	134	134	114	4,000
BCV Credit Sale Revenue	\$ 1,283,789	\$ 1,322,303	\$ 1,361,972	\$ 1,402,831	\$ 1,444,916	\$ 1,488,264	\$ 1,532,912	\$ 1,578,899	\$ 1,626,266	\$ 1,425,046	\$ 33,566,740
Assumes that credits are sold at a rate equivalent to acres of preserve acquired and one credit is created from each acre of habitat that is protected, excluding buffer acreage. Credits are sold at \$5,000 per credit and base credit prices are increased annually by 3%.											
Karst Participation Fees											
Karst Zone 3 & 4 Participation (acres)	290	290	290	290	290	290	290	290	290	290	8,700
Karst Zone 3 & 4 Participation Fees	\$ 55,567	\$ 57,234	\$ 58,951	\$ 60,720	\$ 62,541	\$ 64,417	\$ 66,350	\$ 68,340	\$ 70,391	\$ 72,502	\$ 1,463,710
Karst Zone 1 & 2 Participation (acres)	260	260	260	260	260	260	260	260	260	260	7,800
Karst Zone 1 & 2 Participation Fees	\$ 249,093	\$ 256,566	\$ 264,263	\$ 272,191	\$ 280,357	\$ 288,768	\$ 297,431	\$ 306,354	\$ 315,544	\$ 325,010	\$ 6,561,459
Occupied Cave Zone B Participation (caves)	1	0	0	1	0	0	1	0	0	1	12
Occupied Cave Zone B Participation Fees	\$ 76,644	\$ -	\$ -	\$ 83,751	\$ -	\$ -	\$ 91,517	\$ -	\$ -	\$ 100,003	\$ 822,739
Occupied Cave Zone A Participation (caves)	0	0	0	0	1	0	0	0	0	1	6
Occupied Cave Zone A Participation Fees	\$ -	\$ -	\$ -	\$ -	\$ 862,637	\$ -	\$ -	\$ -	\$ -	\$ 1,000,032	\$ 4,279,984
Assumes that authorized impacts over Karst Zones are distributed evenly over Plan duration. Assumes that caves affected by participation within Occupied Cave Zones are 50% of the total number of affected caves (18 caves), with 66% of OCZ caves participating at Zone B fees (12 caves) and 33% at Zone A fees (6 caves). OCZ Zone B participation scheduled at one every 3 years and at YR 10 and YR 20. OCZ Zone A participation scheduled at one every 5 years.											
Participation Fees include: Karst Zone 3 & 4 = \$100/acre; Karst Zone 1 & 2 = \$500/acre; OCZ B = \$40,000 per cave; OCZ A = \$400,000 per cave. Base fees are increased by 3% annually.											
Total Participation Fee Revenue	\$ 9,341,206	\$ 9,542,416	\$ 9,828,606	\$ 10,207,133	\$ 11,289,637	\$ 10,739,728	\$ 11,153,354	\$ 11,393,610	\$ 11,735,336	\$ 12,937,091	\$ 248,903,623

Appendix F. Estimated SEP-HCP Revenues.

Plan Year:	1	2	3	4	5	6	7	8	9	10
PUBLIC REVENUE										
Needed Public Revenue to Balance Budget	\$ 3,094,338	\$ 3,342,591	\$ 3,402,424	\$ 3,542,172	\$ 3,289,214	\$ 4,214,749	\$ 3,964,234	\$ 4,120,056	\$ 4,265,965	\$ 3,928,071
Public %	38%	39%	38%	39%	34%	41%	39%	40%	39%	35%
Participation %	62%	61%	62%	61%	66%	59%	61%	60%	61%	65%
County/City Tax Increment Diversion										
Acres Participating In Plan	716	716	716	716	716	716	716	716	716	716
Acres Developed without Plan Participation	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034
The average annual acreage of new development projected for Bexar County sectors per the SEP-HCP land use analysis.										
Average Taxable Value per Developed Acre	\$ 425,000	\$ 437,750	\$ 450,883	\$ 464,409	\$ 478,341	\$ 492,691	\$ 507,472	\$ 522,696	\$ 538,377	\$ 554,529
Developed Value of Participating Acres	\$ 304,300,000	\$ 313,429,000	\$ 322,831,870	\$ 332,516,826	\$ 342,492,331	\$ 352,767,101	\$ 363,350,114	\$ 374,250,617	\$ 385,478,136	\$ 397,042,480
Developed Value of Non-participating Acres	\$ 864,450,000	\$ 890,383,500	\$ 917,095,005	\$ 944,607,855	\$ 972,946,091	\$ 1,002,134,474	\$ 1,032,198,508	\$ 1,063,164,463	\$ 1,095,059,397	\$ 1,127,911,179
Cummulative New Developed Value	\$ 1,168,750,000	\$ 2,372,562,500	\$ 3,612,489,375	\$ 4,889,614,056	\$ 6,205,052,478	\$ 7,559,954,052	\$ 8,955,502,674	\$ 10,392,917,754	\$ 11,873,455,287	\$ 13,398,408,945
The estimated average taxable value per developed acre represents a conservative approximation of likely developed land values in northern Bexar County, based on a review of average land values in the Northside ISD, Northeast ISD, Alamo Heights ISD, and Shavano Park areas.										
Bexar County Tax Rate (per 100 acres) - 2011	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187
San Antonio Tax Rate (per 100 acres) - 2011	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690
Bexar County Tax Increment Diversion (7.5%)	\$ 259,626	\$ 527,042	\$ 802,479	\$ 1,086,180	\$ 1,378,392	\$ 1,679,370	\$ 1,989,378	\$ 2,308,685	\$ 2,637,572	\$ 2,976,326
San Antonio Tax Increment Diversion (5%)	\$ 231,403	\$ 469,747	\$ 715,242	\$ 968,102	\$ 1,228,548	\$ 1,496,807	\$ 1,773,113	\$ 2,057,709	\$ 2,350,843	\$ 2,652,771
Assumes Bexar County and the City of San Antonio dedicate a certain percentage of new tax revenue from lands developed after the approval of the SEP-HCP to Plan implementation (i.e., "tax increment diversion"). Assumes that 70% of the newly developed acres occur within the jurisdiction of both Bexar County and San Antonio.										
Total Estimated County and City Tax Increment Diversion	\$ 491,029	\$ 996,789	\$ 1,517,721	\$ 2,054,282	\$ 2,606,940	\$ 3,176,177	\$ 3,762,491	\$ 4,366,395	\$ 4,988,416	\$ 5,629,097
Additional Public Revenues and Savings										
Conservation Credit from Existing Protected Lands	\$ 970,750	\$ 999,890	\$ 1,029,890	\$ 1,060,790	\$ 1,092,600					
Assumes that 500 acres of existing protected lands in or adjacent to Bexar County can generate 250 conservation credits for the GCW. The value of these 250 credits is estimated at the suburban per acre land price, as adjusted for the anticipated mix of fee simple and conservation easement acquisitions. Assumes 50 credits are created annually during YR 1-5.										
Lands Acquired with Existing Open Space Sales Tax Revenue	\$ 2,912,250	\$ 2,999,670	\$ 3,089,670	\$ 3,182,370	\$ 3,277,800	\$ 3,376,200	\$ 3,477,420			
Assumes that lands in or adjacent to Bexar County will be acquired with existing voter-approved sales tax revenue for open space preservation. Assumes that these acres provide 1,050 acres of GCW conservation credit for the Plan in addition to water quality benefits. Value of these credits estimated at the suburban per acre land price, as adjusted for the anticipated mix of fee simple and conservation easement acquisitions. Assumes 150 credits are created annually during YR 1-7.										
TOTAL ESTIMATED SEP-HCP REVENUE										
Total Plan Revenue	\$ 9,504,819	\$ 10,280,981	\$ 11,125,390	\$ 11,903,740	\$ 13,229,365	\$ 12,549,126	\$ 13,365,810	\$ 10,675,988	\$ 11,540,970	\$ 12,931,840
Annual Budget Balance	\$ 1,279,691	\$ 1,653,758	\$ 2,234,858	\$ 2,755,270	\$ 3,688,126	\$ 2,337,627	\$ 3,275,677	\$ 246,339	\$ 722,450	\$ 1,701,026
Cumulative Budget Balance	\$ 1,279,691	\$ 2,933,449	\$ 5,168,306	\$ 7,923,576	\$ 11,611,702	\$ 13,949,329	\$ 17,225,006	\$ 17,471,345	\$ 18,193,795	\$ 19,894,821

Appendix F. Estimated SEP-HCP Revenues.

Plan Year:	11	12	13	14	15	16	17	18	19	20
PUBLIC REVENUE										
Needed Public Revenue to Balance Budget	\$ 4,939,090	\$ 5,278,210	\$ 5,129,851	\$ 5,236,371	\$ 4,979,629	\$ 5,982,107	\$ 6,322,554	\$ 7,007,825	\$ 6,791,995	\$ 6,252,928
Public %	42%	42%	41%	41%	37%	43%	43%	45%	44%	39%
Participation %	58%	58%	59%	59%	63%	57%	57%	55%	56%	61%
County/City Tax Increment Diversion										
Acres Participating In Plan	716	716	716	716	716	716	716	716	716	716
Acres Developed without Plan Participation	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034
The average annual acreage of new development projected for Bexar County sectors per the SEP-HCP land use analysis.										
Average Taxable Value per Developed Acre	\$ 571,164	\$ 588,299	\$ 605,948	\$ 624,127	\$ 642,851	\$ 662,136	\$ 682,000	\$ 702,460	\$ 723,534	\$ 745,240
Developed Value of Participating Acres	\$ 408,953,754	\$ 421,222,367	\$ 433,859,038	\$ 446,874,809	\$ 460,281,053	\$ 474,089,485	\$ 488,312,169	\$ 502,961,535	\$ 518,050,381	\$ 533,591,892
Developed Value of Non-participating Acres	\$ 1,161,748,514	\$ 1,196,600,970	\$ 1,232,498,999	\$ 1,269,473,969	\$ 1,307,558,188	\$ 1,346,784,933	\$ 1,387,188,481	\$ 1,428,804,136	\$ 1,471,668,260	\$ 1,515,818,308
Cummulative New Developed Value	\$ 14,969,111,214	\$ 16,586,934,550	\$ 18,253,292,587	\$ 19,969,641,364	\$ 21,737,480,605	\$ 23,558,355,023	\$ 25,433,855,674	\$ 27,365,621,344	\$ 29,355,339,984	\$ 31,404,750,184
The estimated average taxable value per developed acre represents a conservative approximation of likely developed land values in northern Bexar County, based on a review of average land values in the Northside ISD, Northeast ISD, Alamo Heights ISD, and Shavano Park areas.										
Bexar County Tax Rate (per 100 acres) - 2011	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187
San Antonio Tax Rate (per 100 acres) - 2011	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690
Bexar County Tax Increment Diversion (7.5%)	\$ 3,325,242	\$ 3,684,626	\$ 4,054,791	\$ 4,436,061	\$ 4,828,769	\$ 5,233,259	\$ 5,649,883	\$ 6,079,006	\$ 6,521,003	\$ 6,976,259
San Antonio Tax Increment Diversion (5%)	\$ 2,963,757	\$ 3,284,072	\$ 3,613,997	\$ 3,953,819	\$ 4,303,836	\$ 4,664,354	\$ 5,035,687	\$ 5,418,160	\$ 5,812,108	\$ 6,217,874
Assumes Bexar County and the City of San Antonio dedicate a certain percentage of new tax revenue from lands developed after the approval of the SEP-HCP to Plan implementation (i.e., "tax increment diversion"). Assumes that 70% of the newly developed acres occur within the jurisdiction of both Bexar County and San Antonio.										
Total Estimated County and City Tax Increment Diversion	\$ 6,288,999	\$ 6,968,698	\$ 7,668,788	\$ 8,389,880	\$ 9,132,606	\$ 9,897,613	\$ 10,685,570	\$ 11,497,166	\$ 12,333,110	\$ 13,194,133
Additional Public Revenues and Savings										
Conservation Credit from Existing Protected Lands										
Assumes that 500 acres of existing protected lands in or adjacent to Bexar County can generate 250 conservation credits for the GCW. The value of these 250 credits is estimated at the suburban per acre land price, as adjusted for the anticipated mix of fee simple and conservation easement acquisitions. Assumes 50 credits are created annually during YR 1-5.										
Lands Acquired with Existing Open Space Sales Tax Revenue										
Assumes that lands in or adjacent to Bexar County will be acquired with existing voter-approved sales tax revenue for open space preservation. Assumes that these acres provide 1,050 acres of GCW conservation credit for the Plan in addition to water quality benefits. Value of these credits estimated at the suburban per acre land price, as adjusted for the anticipated mix of fee simple and conservation easement acquisitions. Assumes 150 credits are created annually during YR 1-7.										
TOTAL ESTIMATED SEP-HCP REVENUE										
Total Plan Revenue	\$ 13,183,407	\$ 14,128,597	\$ 14,982,897	\$ 15,923,331	\$ 17,598,048	\$ 17,889,683	\$ 18,917,320	\$ 20,045,926	\$ 21,066,006	\$ 23,007,462
Annual Budget Balance	\$ 1,349,909	\$ 1,690,488	\$ 2,538,937	\$ 3,153,509	\$ 4,152,976	\$ 3,915,506	\$ 4,363,017	\$ 4,489,342	\$ 5,541,115	\$ 6,941,204
Cumulative Budget Balance	\$ 21,244,729	\$ 22,935,217	\$ 25,474,154	\$ 28,627,663	\$ 32,780,639	\$ 36,696,145	\$ 41,059,162	\$ 45,548,503	\$ 51,089,619	\$ 58,030,823

Appendix F. Estimated SEP-HCP Revenues.

Plan Year:	21	22	23	24	25	26	27	28	29	30	Total
PUBLIC REVENUE											
Needed Public Revenue to Balance Budget	\$ 7,283,603	\$ 7,924,626	\$ 8,450,182	\$ 8,061,491	\$ 7,715,073	\$ 8,724,908	\$ 8,892,267	\$ 9,533,444	\$ 10,805,519	\$ 8,674,683	\$ 181,150,173
Public %	44%	45%	46%	44%	41%	45%	44%	46%	48%	40%	42%
Participation %	56%	55%	54%	56%	59%	55%	56%	54%	52%	60%	58%
County/City Tax Increment Diversion											
Acres Participating In Plan	716	716	716	716	716	716	716	716	716	716	21,480
Acres Developed without Plan Participation	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	2,034	61,020
The average annual acreage of new development projected for Bexar County sectors per the SEP-HCP land use analysis.											
Average Taxable Value per Developed Acre	\$ 767,597	\$ 790,625	\$ 814,344	\$ 838,774	\$ 863,937	\$ 889,856	\$ 916,551	\$ 944,048	\$ 972,369	\$ 1,001,540	\$ 82,500
Developed Value of Participating Acres	\$ 549,599,649	\$ 566,087,638	\$ 583,070,267	\$ 600,562,375	\$ 618,579,247	\$ 637,136,624	\$ 656,250,723	\$ 675,938,244	\$ 696,216,392	\$ 717,102,883	
Developed Value of Non-participating Acres	\$ 1,561,292,857	\$ 1,608,131,643	\$ 1,656,375,592	\$ 1,706,066,860	\$ 1,757,248,865	\$ 1,809,966,331	\$ 1,864,265,321	\$ 1,920,193,281	\$ 1,977,799,079	\$ 2,037,133,052	
Cummulative New Developed Value	\$ 33,515,642,690	\$ 35,689,861,970	\$ 37,929,307,829	\$ 40,235,937,064	\$ 42,611,765,176	\$ 45,058,868,131	\$ 47,579,384,175	\$ 50,175,515,701	\$ 52,849,531,172	\$ 55,603,767,107	
The estimated average taxable value per developed acre represents a conservative approximation of likely developed land values in northern Bexar County, based on a review of average land values in the Northside ISD, Northeast ISD, Alamo Heights ISD, and Shavano Park areas.											
Bexar County Tax Rate (per 100 acres) - 2011	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	0.296187	
San Antonio Tax Rate (per 100 acres) - 2011	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	0.565690	
Bexar County Tax Increment Diversion (7.5%)	\$ 7,445,173	\$ 7,928,155	\$ 8,425,626	\$ 8,938,021	\$ 9,465,788	\$ 10,009,388	\$ 10,569,296	\$ 11,146,002	\$ 11,740,008	\$ 12,351,835	164,453,242
San Antonio Tax Increment Diversion (5%)	\$ 6,635,812	\$ 7,066,289	\$ 7,509,681	\$ 7,966,374	\$ 8,436,767	\$ 8,921,273	\$ 9,420,314	\$ 9,934,326	\$ 10,463,758	\$ 11,009,073	146,575,616
Assumes Bexar County and the City of San Antonio dedicate a certain percentage of new tax revenue from lands developed after the approval of the SEP-HCP to Plan implementation (i.e., "tax increment diversion"). Assumes that 70% of the newly developed acres occur within the jurisdiction of both Bexar County and San Antonio.											
Total Estimated County and City Tax Increment Diversion	\$ 14,080,986	\$ 14,994,444	\$ 15,935,306	\$ 16,904,395	\$ 17,902,555	\$ 18,930,661	\$ 19,989,610	\$ 21,080,327	\$ 22,203,766	\$ 23,360,908	\$ 311,028,858
Additional Public Revenues and Savings											
Conservation Credit from Existing Protected Lands											
Assumes that 500 acres of existing protected lands in or adjacent to Bexar County can generate 250 conservation credits for the GCW. The value of these 250 credits is estimated at the suburban per acre land price, as adjusted for the anticipated mix of fee simple and conservation easement acquisitions. Assumes 50 credits are created annually during YR 1-5.											
Lands Acquired with Existing Open Space Sales Tax Revenue											
Assumes that lands in or adjacent to Bexar County will be acquired with existing voter-approved sales tax revenue for open space preservation. Assumes that these acres provide 1,050 acres of GCW conservation credit for the Plan in addition to water quality benefits. Value of these credits estimated at the suburban per acre land price, as adjusted for the anticipated mix of fee simple and conservation easement acquisitions. Assumes 150 credits are created annually during YR 1-7.											
TOTAL ESTIMATED SEP-HCP REVENUE											
Total Plan Revenue	\$ 23,422,191	\$ 24,536,860	\$ 25,763,912	\$ 27,111,527	\$ 29,192,192	\$ 29,670,389	\$ 31,142,964	\$ 32,473,937	\$ 33,939,102	\$ 36,297,999	\$ 587,401,781
Annual Budget Balance	\$ 6,797,382	\$ 7,069,818	\$ 7,485,124	\$ 8,842,903	\$ 10,187,482	\$ 10,205,753	\$ 11,097,343	\$ 11,546,884	\$ 11,398,247	\$ 14,686,225	
Cumulative Budget Balance	\$ 64,828,205	\$ 71,898,024	\$ 79,383,148	\$ 88,226,051	\$ 98,413,533	\$ 108,619,286	\$ 119,716,629	\$ 131,263,513	\$ 142,661,760	\$ 157,347,985	