

ACTIVITY	Annual Costs (Years 1-7)							TOTAL
	2013	2014	2015	2016	2017	2018	2019	TOTAL Annual
CPM Stage V (§ 5.1.4)								
Use of SAWS ASR for Springflow Protection Trade Off (§ 5.5.1)								
Obtaining Leases and Options for Water	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 33,313,000
O&M Costs related to the actual use of the ASR	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 15,358,000
Regional Water Conservation Program (§ 5.1.3)	\$ 493,250	\$ 986,500	\$ 1,973,000	\$ 1,973,000	\$ 1,973,000	\$ 1,973,000	\$ 1,973,000	\$ 11,344,750
Voluntary Irrigation Suspension Program Option (§ 5.1.2)	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 29,204,000
SAN MARCOS SPRINGS - Measures to Reduce the Impacts of Drought and Recreation and Enhance the Viability of the Listed Species								
Texas wild-rice enhancement and restoration (§ 5.3.1, § 5.4.1)	\$ 250,000	\$ 175,000	\$ 175,000	\$ 125,000	\$ 125,000	\$ 100,000	\$ 100,000	\$ 1,050,000
Sediment removal - Sewell Park (§ 5.3.6, § 5.4.4)	\$ 500,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 650,000
Aquatic vegetation restoration (non-native removal and native re-establishment) and maintenance - San Marcos River (§ 5.3.8, § 5.4.3, § 5.4.12)	\$ 375,000	\$ 175,000	\$ 125,000	\$ 125,000	\$ 75,000	\$ 50,000	\$ 50,000	\$ 975,000
Management of floating vegetation mats and litter removal (Spring Lake and San Marcos River) (§ 5.3.3, § 5.4.3)	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 560,000
Non-native animal species control (§ 5.3.5, § 5.3.9, § 5.4.11, § 5.4.13)	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 245,000
Sessom Creek sand bar removal (§ 5.4.6)	\$ 25,000	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Low Impact Development / BMPs (§ 5.7.3)	\$ 500,000	\$ 500,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 2,000,000
Recreation control in key areas (enforcement) (§ 5.3.2, § 5.4.2)	\$ -	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 336,000
Restoration of riparian zone with native vegetation (§ 5.7.1)	\$ 100,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 220,000
Bank stabilization / Permenant access points (§ 5.3.7)	\$ 500,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 620,000
Bio-monitoring (§ 6.3.1)	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,400,000
Water Quality Monitoring and Protection (§ 5.7.2, 5.7.6)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 700,000
Household hazardous waste program (§ 5.7.5)	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 210,000
Other Measures								
Management of public recreational use (§ 5.3.2.1)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Prohibition of hazardous materials route (§ 5.3.4)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Diversion of Surface Water (§ 5.4.5)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Diving Classes in Spring Lake (§ 5.4.7)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Creation of Scientific Areas (§ 5.6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Research Programs in Spring Lake (§ 5.4.8)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Boating in Spring Lake and Sewell Park (§ 5.3.10)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Septic system registration and permitting program (§ 5.7.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Management of golf course grounds (§ 5.4.9)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$ 2,695,000	\$ 1,491,000	\$ 1,066,000	\$ 1,016,000	\$ 966,000	\$ 916,000	\$ 916,000	\$ 9,066,000
COMAL SPRINGS - Measures to Reduce the Impacts of Drought and Recreation Enhance the Viability of the Listed Species								
Old Channel ERPA - Includes aquatic vegetation restoration and maintenance; limited channel modifications as necessary to enhance fountain darter habitat, and removal of the sediment island (§ 5.2.2.1)	\$ 400,000	\$ 175,000	\$ 175,000	\$ 125,000	\$ 125,000	\$ 100,000	\$ 100,000	\$ 1,200,000
Flow-split management - old and new channels (§ 5.2.1)	\$ 150,000	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ 30,000	\$ 210,000
Landa Lake and Comal River - aquatic vegetation restoration and maintenance (§ 5.2.2 except § 5.2.2.1)	\$ 200,000	\$ 220,000	\$ 125,000	\$ 100,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ 845,000
Non-native animal species control (§ 5.2.5, § 5.2.9)	\$ 135,000	\$ 135,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 645,000
Decaying vegetation removal program (§ 5.2.4)	\$ 750,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 840,000
Riparian improvements and sediment removal specific to the Comal Springs riffle beetle (§ 5.2.8)	\$ 100,000	\$ 75,000	\$ 50,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 325,000
Gill parasite control and non-native snail removal program including optimization research (§ 5.2.6)	\$ 175,000	\$ 175,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 725,000
Restoration of riparian zone with native vegetation (§ 5.7.1)	\$ 200,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000
Prohibition of hazardous materials route (§ 5.2.7)	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,000
BMPs for stormwater control (§ 5.7.6)	\$ 200,000	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	\$ 300,000
Incentive program for low impact development (§ 5.7.6)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 700,000
Bio-monitoring (§ 6.3.1)	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,400,000
Water Quality Monitoring (§ 5.7.4)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 700,000
Household hazardous waste program (§ 5.7.5)	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 210,000
Other Measures								
Creation of state scientific areas (§ 5.6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Management of public recreational use (§ 5.2.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$ 2,750,000	\$ 1,325,000	\$ 1,045,000	\$ 1,025,000	\$ 945,000	\$ 870,000	\$ 950,000	\$ 8,910,000
BOTH SYSTEMS - MODELING AND RESEARCH								
Development of Mechanistic Ecological Model (§ 6.6.3)	\$ 175,000	\$ 175,000	\$ 175,000	\$ 175,000	\$ 175,000	\$ 50,000	\$ 25,000	\$ 950,000
Applied Environmental Research at the USFWS NFHTC (§ 6.3.4)	\$ 750,000	\$ 1,750,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 4,750,000
Science Review Panel	\$ -	\$ 50,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 550,000
Improve Groundwater Model	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$ 925,000	\$ 1,975,000	\$ 725,000	\$ 725,000	\$ 725,000	\$ 600,000	\$ 575,000	\$ 6,250,000
BOTH SYSTEMS - NFHTC REFUGIA (§ 5.1.1)								
	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 11,750,179
Project Management Costs	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 5,250,000
TOTAL	\$ 20,416,847	\$ 19,331,097	\$ 18,362,597	\$ 18,292,597	\$ 18,162,597	\$ 17,912,597	\$ 17,967,597	\$ 130,445,929

Table 7.1: ANNUALIZED IMPLEMENTATION COSTS (Continued)

	ACTIVITY	Annual Costs (Years 8-15)								TOTAL		
		2020	2021	2022	2023	2024	2025	2026	2027	TOTAL Annual		
		NA	NA	NA	NA	NA	NA	NA	NA	NA		
Flow Protection Measures	CPM Stage V (§ 5.1.4)											
	Using SAWS ASR for springflow protection (§ 5.5.1)											
	Obtaining Leases and Options for Water	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 4,759,000	\$ 38,072,000		
	O&M Costs related to the actual use of the ASR	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 2,194,000	\$ 17,552,000		
	Regional Water Conservation Program (§ 5.1.3)	\$ 1,973,000	\$ 1,973,000	\$ 1,479,750	\$ 986,500	\$ 493,250	\$ 493,250	\$ 493,250	\$ 493,250	\$ 8,385,250		
Voluntary Irrigation Suspension Program Option (§ 5.1.2)	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 4,172,000	\$ 33,376,000			
Other Minimization and Mitigation Measures	SAN MARCOS SPRINGS - Measures to Reduce the Impacts of Drought and Recreation and Enhance the Viability of the Listed Species											
	Texas wild-rice enhancement and restoration (§ 5.3.1, § 5.4.1)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000		
	Sediment removal - Sewell Park (§ 5.3.6, § 5.4.4)	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 200,000		
	Aquatic vegetation restoration (non-native removal and native re-establishment) and maintenance - San Marcos River (§ 5.3.8, § 5.4.3, § 5.4.12)	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 400,000		
	Management of floating vegetation mats and litter removal (Spring Lake and San Marcos River) (§ 5.3.3, § 5.4.3)	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 640,000		
	Non-native animal species control (§ 5.3.5, § 5.3.9, § 5.4.11, § 5.4.13)	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 280,000		
	Sessom Creek sand bar removal (§ 5.4.6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Low Impact Development / BMPs (§ 5.7.3)	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,600,000		
	Recreation control in key areas (enforcement) (§ 5.3.2, § 5.4.2)	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 56,000	\$ 448,000		
	Restoration of riparian zone with native vegetation (§ 5.7.1)	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 160,000		
	Bank stabilization / Permanent access points (§ 5.3.7, § 5.4.5)	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 140,000		
	Bio-monitoring (§ 6.3.1)	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,600,000		
	Water quality monitoring and protection (§ 5.7.2 and 5.7.6)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000		
	Household hazardous waste program (§ 5.7.5)	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 240,000		
	Other Measures											
	Management of public recreational use (§ 5.3.2.1)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Prohibition of hazardous materials route (§ 5.3.4)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Diversion of Surface Water (§ 5.3.5)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Diving Classes in Spring Lake (§ 5.4.7)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Creation of Scientific Areas § 5.6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Research Programs in Spring Lake (§ 5.4.8)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Boating in Spring Lake and Sewell Park (§ 5.3.10)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Septic system registration and permitting program (§ 5.7.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	Management of golf course grounds (§ 5.4.9)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
	TOTAL	\$ 916,000	\$ 916,000	\$ 916,000	\$ 916,000	\$ 916,000	\$ 916,000	\$ 916,000	\$ 916,000	\$ 7,328,000		
	Other Minimization and Mitigation Measures	COMAL SPRINGS - Measures to Reduce the Impacts of Drought and Recreation and Enhance the Viability of the Listed Species										
		Old Channel ERPA - Includes aquatic vegetation restoration and maintenance; limited channel modifications as necessary to enhance fountain darter habitat, and removal of the sediment island (§ 5.2.2.1)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000	
		Flow-split management - old and new channels (§ 5.2.1)	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ 60,000	
		Landa Lake and Comal River - aquatic vegetation restoration and maintenance (§ 5.2.2 except § 5.2.2.1)	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 400,000	
		Non-native animal species control (§ 5.2.5, § 5.2.9)	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 600,000	
		Decaying vegetation removal program (§ 5.2.4)	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 120,000	
		Riparian improvements and sediment removal specific to the Comal Springs riffle beetle (§ 5.2.8)	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 200,000	
		Gill Parasite Control and non-native snail removal program including optimization research (§ 5.2.6)	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 600,000	
		Restoration of riparian zone with native vegetation § 5.7.1)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000	
		Prohibition of hazardous materials route (§ 5.2.7)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		BMPs for stormwater control (§ 5.7.6)	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ 100,000	
		Incentive program for low impact development (§ 5.7.6)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000	
		Bio-monitoring (§ 6.3.1)	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,600,000	
		Water Quality Monitoring (§ 5.7.4)	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 800,000	
		Household hazardous waste program (§ 5.7.5)	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 240,000	
		Other Measures										
		Creation of state scientific areas § 5.6)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		Management of public recreational use (§ 5.2.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		TOTAL	\$ 870,000	\$ 870,000	\$ 950,000	\$ 870,000	\$ 870,000	\$ 950,000	\$ 870,000	\$ 870,000	\$ 7,120,000	
		Other Minimization and Mitigation Measures	BOTH SYSTEMS - MODELING AND RESEARCH									
			Development of Mechanistic Ecological Model (§ 6.6.3)	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 200,000
			Applied Environmental Research at the USFWS NFHTC (§ 6.3.4)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
			Science Review Panel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Improve Groundwater Model		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	TOTAL		\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 200,000	
	Other Minimization and Mitigation Measures	BOTH SYSTEMS - NFHTC REFUGIA (§ 5.1.1)										
		TOTAL	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 1,678,597	\$ 13,428,776	
Administrative	Project Management Costs	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 6,000,000		
	TOTAL	\$ 17,337,597	\$ 17,337,597	\$ 16,924,347	\$ 16,351,097	\$ 15,857,847	\$ 15,937,847	\$ 15,857,847	\$ 15,857,847	\$ 131,462,026		