Little Arthur Creek Residential Storage & Forbearance Project

Introduction:

The Grantee for the Little Arthur Creek Residential Storage & Forbearance Project is Trout Unlimited (TU). The purpose of the project is to increase dry season streamflow in the target reach of Little Arthur Creek to improve salmonid rearing habitat.

The Grantee shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured. All habitat improvement will follow techniques outlined in the California Salmonid Stream Habitat Restoration Manual (Part VII Project Implementation).

Objectives:

The proposed project will construct potable water storage tanks for 10 residences in exchange for dry season forbearance agreements.

Project Description:

Location:

The project is located in Little Arthur Creek which is a tributary of Uvas Creek in the Pajaro River watershed in Santa Clara County. The project reach starts at the Second Bridge at RM 2.4 (measured upstream from the confluence of Uvas Creek) and extends to the upper limit of anadromy at RM 4.9. From the town of Gilroy, travel Hecker Pass Road (HWY 152 W) to Watsonville Road. Turn north on Watsonville Road, travel north 1.1 miles to Redwood Retread Road. Travel two miles west to the Second Bridge.
37.030 N, -121.695 W

Project Set Up:

Project management, execution of forbearance agreements, will be conducted by TU. Landowner outreach will be performed by Coastal habitat Education & Environmental Restoration (CHEER). Site selection and ranking, will be performed by the Project Team; TU, CHEER, CEMAR, and potentially, NOAA Fisheries and CDFW staff. Individual sub-project design will be performed by the subcontracted project engineer with gauging, rating and hydrographs performed by CEMAR. Permitting, contractor selection and management will be conducted by TU in consultation with the subcontracted project engineer and general contractor. Conceptual design (which was already completed by the subcontracted project engineer--this was not funded by FRGP or used as cost-share), ordering equipment and materials, onsite support, as-builts & close-outs, will be conducted by the subcontracted project engineer. Construction will be conducted by subcontracted general contractor.

Materials:

Gravel for pad construction, water tanks, utility trench materials, water pumps, water treatment systems, waste/debris dumpster rentals

Tasks:

Task 1: Project Management

TU will hire and oversee all contractors including CHEER, the project engineer and general contractor. TU will also coordinate grant reporting, invoicing and communications among the Project Team (TU, the Project Engineer, CHEER, and contractors).

Task 2: Landowner Outreach

Landowner outreach will be handled by Coastal Habitat Education & Environmental Restoration (CHEER), a Gilroy-based non-profit organization whose mission is to restore coastal ecosystems in a way that safeguards resource-based local economies. CHEER will be primarily responsible for making contact with landowners, and for coordinating all communications and meetings between landowners and the Project Team.

Task 3: Site Selection

The Project Team will initially rank each potential project site in order of priority based on a rough screen of site suitability and cost/benefit. The Project Team and (if desired) CDFW staff will then meet on-site with the owner of each potential sub-project site, and conduct a thorough site review to identify potential tank locations and configurations based on the needs of the landowner and characteristics of the site. Based on the outcome of each site visit, the Project Team will decide whether to propose the parcel as a sub-project site and proceed to Tasks 4 - 12 for that site, subject to CDFW approval. To the extent viable sites are identified, approval to proceed may be issued without awaiting the outcome of all site visits.

Task 4: Execute Forbearance Agreements

TU will be responsible for negotiating and drafting a forbearance agreement with each landowner. Each agreement will provide for the construction of the water tank system and require the landowner to refrain from all diversion from Little Arthur Creek and tributary ground and surface water for a minimum of 15 years. A model agreement has already been drafted and is available on request. (The forbearance agreement for the first tank sub-project has already been completed with non-FRGP funds).

Task 5: Conceptual Design [This task was completed in February 2014, but is included in this grant proposal to provide context.]

The Project Engineer will develop a "menu" of water storage systems that will be used as the basis for participating landowners, in consultation with TU to select a preferred system based on" (a) storage capacity (30,000 gallons; 50,000 gallons; or 100,000 gallons); (b) potable/non-potable supply options; (c) conventional vs. solar power options; and (d) annual estimated operation and maintenance costs. These findings will be presented as two matrices (construction cost matrix; annual estimated operations and maintenance) along with general system schematics.

Task 6: Gauging, Rating and Development of Hydrographs

This will be performed by subcontractor, CEMAR.

Task 7: Individual Sub-project Design

The Project Engineer will provide engineering support for layout and design of each individual tank project. The system configuration will be based on typical layouts from the "menu" previously developed. This will include the following sub-tasks:

- Site Survey and Topographic Mapping:
  The Project Engineer will visit the site and perform a topographic survey to determine site elevations and site layout. The survey will be performed using a Terrestrial LiDAR unit (Faro 3D Scanner) and positions will be surveyed using an RTK GPS and/or Total Station. If no site survey control exists, the Project Engineer will establish survey control. The topographic map will be included in the project plan set.

- Plans, Specifications, and Estimates (PS&Es):
  The Project Engineer will develop the technical aspects and complete the analyses required for formal system design. The Project Engineer will evaluate seismic safety, foundation conditions, and plumbing details (pumps, piping, electrical supply, valves, etc.). Following completion of the technical details, the Project Engineer will develop plans, specifications, and assist in generating the cost estimate for implementation of the system.

  Because of the individual nature of each project, the designs will allow for a flexible "design- build" approach, with details of the plumbing and other components to be worked out between the Project Engineer and General Contractor before and during

construction. The deliverable for Task 6 will be a 90% sub-project design subject to DFW approval. (The site-specific design for the first tank sub-project has already been completed with non-FRGP funds).

Task 8: Permitting

TU will have primary responsibility for securing all necessary permits including: building and grading permits (if required and in consultation with the Project Engineer and General Contractor); water rights permits, and §1602 Streambed Alteration Agreements. (Construction-related permitting for the first tank project has been completed with non-FRGP funds).

Task 9: Contractor Selection & Management

For each tank project, TU will work with the Project Engineer and each landowner to select a general contractor to perform the general site work, plumbing, and electrical work. Once the contractor has been selected and a contract negotiated, TU will work with the Project Engineer, the contractor, and the landowner to develop the project construction schedule. (Contractor selection for the first tank project has been completed with non-FRGP funds. It is anticipated that the same general contractor will be employed for all ten subprojects, assuming satisfactory performance).

Task 10: Equipment and Materials Ordering

The Project Engineer will oversee the selection and ordering materials for the project. The Project Engineer will ensure that all materials meet the intent of the project drawings. Materials will be ordered and scheduled to arrive onsite in accordance with the developed construction schedule. The Project Engineer will have onsite staff to oversee installation of materials and equipment.

Task 11: Onsite Support

The Project Engineer will have staff onsite during major construction tasks to observe and document installation of the improvements. The Project Engineer will also provide site stakeout services to mark locations/alignments of project improvements. The Project Engineer will also perform quality control functions during construction to confirm correct and proper installation of project improvements.

Task 12: Construction

The general contractor will be responsible for all aspects of project construction, including: pad construction, tank installation, utility trenching, pump, pressure tank and housing installation, piper pressure testing, water treatment system installation, and system test-out.

Task 13: As-Builts and Close-Outs

Upon completion of work at the site, the Project Engineer will perform an as-built survey to document as-constructed conditions. The Project Engineer will provide the landowner with all pertinent owner manuals and warranty documents for the procured equipment. The Project Engineer will, in conjunction with the landowner and plumbing contractor, test the system to ensure all components are properly functioning and the landowner understands how to operate and maintain the installed system.

Deliverables

Task 1: Interim grant reports, invoices, final project report

Task 2: Provisional landowner access agreements

Task 3: Report of each site visit including aerial photos/ maps of parcel, parcel-specific information (zoning and other land use restrictions, etc.), notes of landowner meetings, and recommendations

Task 4: Signed forbearance agreement for each landowner/tank sub-project

Task 5: Menu of Conceptual design options and supporting information

Task 6: 90 % design for each sub-project allowing for design-build. The plans will have the following sheets: title sheet (vicinity map, site map), site plan & tank layout, details/notes.

Task 7: As applicable, for each sub-project: Building permit, grading permit, 1602 Streambed Alteration Agreement, small domestic use registration

Task 11: Tank system constructed to design specifications

Task 12: As-built letter confirming the project construction conforms to design

Timelines (Various tasks for designs, permitting, and construction will occur for the 10 tanks between June 1, 2015 and November 2016).

Task 1: Project Management (June 1, 2015 – February 28, 2017); Final Invoice/Final Report (February 28, 2017)

Task 2: Landowner Outreach (June 1, 2015 – February 28, 2017)

Task 3: Site Selection (10 sites) (June 2015 – March 2016)

Task 4: Forbearance Agreements (June 2015 – May 2016)

Task 5: Conceptual Designs Completed (non-FRGP funding)

Task 6: Gaging, Rating, Hydrograph Development (June 2015 – February 2017)

Task 7: Site-Specific Designs (June 2015 – March 2016)

Task 8: Permitting (August 2015 – February 2017)

Task 9: Contractor Selection & Management (September 2015 – November 2016)

Task 10: Equipment & Materials Ordering (September 2015 – September 2016)

Task 11: On-site Construction Support (September 2015 – November 2016)

Task 12: Construction (September 2015 – November 2016)

Task 13: As-Built and Close-out (December 2016)

Additional Requirements:

1. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the Army Corp of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the California Department of Fish and Wildlife.

2. No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be used when refueling equipment. Any and all equipment will be removed from the streambed and flood plain areas at the end of each workday.

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
D037 Little Arthur Creek residential storage and forebearance project

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	American badger *Taxidea taxus*	AMAJF04010			G5	S4	SC
2	Anderson's manzanita *Arctostaphylos andersonii*	PDERI04030			G2	S2?	1B.2
3	Bay checkerspot butterfly *Euphydryas editha bayensis*	IILEPK4055	Threatened		G5T1	S1	
4	California red-legged frog *Rana draytonii*	AAABH01022	Threatened		G2G3	S2S3	SC
5	California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
6	Central Dune Scrub	CTT21320CA			G2	S2.2	
7	Choris' popcornflower *Plagiobothrys chorisianus var. chorisianus*	PDBOR0V061			G3T2Q	S2	1B.2
8	Coastal and Valley Freshwater Marsh	CTT52410CA			G3	S2.1	
9	Congdon's tarplant *Centromadia parryi ssp. congdonii*	PDAST4R0P1			G3T2	S2	1B.1
10	Coyote ceanothus *Ceanothus ferrisiae*	PDRHA041N0	Endangered		G2	S2	1B.1
11	Dudley's lousewort *Pedicularis dudleyi*	PDSCR1K0D0		Rare	G2	S2	1B.2
12	Hall's bush-mallow *Malacothamnus hallii*	PDMAL0Q0F0			G2Q	S2	1B.2
13	Hom's micro-blind harvestman *Microcina homi*	ILARA47020			G1	S1	
14	Hooker's manzanita *Arctostaphylos hookeri ssp. hookeri*	PDERI040J1			G3T2?	S2?	1B.2
15	Hoover's button-celery *Eryngium aristulatum var. hooveri*	PDAPI0Z043			G5T1	S1	1B.1
16	Indian Valley bush-mallow *Malacothamnus aboriginum*	PDMAL0Q020			G2	S2	1B.2
17	Kellogg's horkelia *Horkelia cuneata var. sericea*	PDROS0W043			G4T2	S2?	1B.1
18	Kings Mountain manzanita *Arctostaphylos regismontana*	PDERI041C0			G2	S2	1B.2
19	Loma Prieta hoita *Hoita strobilina*	PDFAB5Z030			G2	S2	1B.1
20	Metcalf Canyon jewelflower *Streptanthus albidus ssp. albidus*	PDBRA2G011	Endangered		G2T1	S1	1B.1
21	Monterey gilia *Gilia tenuiflora ssp. arenaria*	PDPLM041P2	Endangered	Threatened	G3G4T2	S2	1B.2
22	Monterey spineflower *Chorizanthe pungens var. pungens*	PDPGN040M2	Threatened		G2T2	S2	1B.2
23	Mt. Hamilton fountain thistle *Cirsium fontinale var. campylon*	PDAST2E163			G2T2	S2	1B.2
24	Mt. Hamilton jewelflower *Streptanthus callistus*	PDBRA2G0A0			G1	S1	1B.3

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
25	Opler's longhorn moth *Adela oplerella*	IILEE0G040			G2	S2	
26	Pajaro manzanita *Arctostaphylos pajaroensis*	PDERI04100			G1	S1	1B.1
27	Pinnacles optioservus riffle beetle *Optioservus canus*	IICOL5E020			G1	S1	
28	San Francisco collinsia *Collinsia multicolor*	PDSCR0H0B0			G2	S2	1B.2
29	San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	AMAFF08082			G5T2T3	S2S3	SC
30	San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
31	Santa Clara Valley dudleya *Dudleya abramsii ssp. setchellii*	PDCRA040Z0	Endangered		G3T2	S2	1B.1
32	Santa Clara red ribbons *Clarkia concinna ssp. automixa*	PDONA050A1			G5?T3	S3.3	4.3
33	Santa Cruz Mountains beardtongue *Penstemon rattanii var. kleei*	PDSCR1L5B1			G4T2	S2	1B.2
34	Santa Cruz Mountains pussypaws *Calyptridium parryi var. hesseae*	PDPOR09052			G3G4T2	S2	1B.1
35	Santa Cruz clover *Trifolium buckwestiorum*	PDFAB402W0			G2	S2	1B.1
36	Santa Cruz kangaroo rat *Dipodomys venustus venustus*	AMAFD03042			G4T1	S1	
37	Santa Cruz long-toed salamander *Ambystoma macrodactylum croceum*	AAAAA01082	Endangered	Endangered	G5T1T2	S1S2	
38	Santa Cruz tarplant *Holocarpha macradenia*	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
39	Serpentine Bunchgrass	CTT42130CA			G2	S2.2	
40	Swainson's hawk *Buteo swainsoni*	ABNKC19070		Threatened	G5	S3	
41	Sycamore Alluvial Woodland	CTT62100CA			G1	S1.1	
42	Tiburon paintbrush *Castilleja affinis var. neglecta*	PDSCR0D013	Endangered	Threatened	G4G5T1	S1	1B.2
43	Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010		Candidate Threatened	G3G4	S2S3	SC
44	Yuma myotis *Myotis yumanensis*	AMACC01020			G5	S4?	
45	arcuate bush-mallow *Malacothamnus arcuatus*	PDMAL0Q0E0			G1Q	S1	1B.2
46	bank swallow *Riparia riparia*	ABPAU08010		Threatened	G5	S2S3	
47	big-scale balsamroot *Balsamorhiza macrolepis*	PDAST11061			G2	S2	1B.2

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
48	black legless lizard *Anniella pulchra nigra*	ARACC01011			G3G4T2T3Q	S2	SC
49	black swift *Cypseloides niger*	ABNUA01010			G4	S2	SC
50	burrowing owl *Athene cunicularia*	ABNSB10010			G4	S3	SC
51	coast horned lizard *Phrynosoma blainvillii*	ARACF12100			G3G4	S3S4	SC
52	foothill yellow-legged frog *Rana boylii*	AAABH01050			G3	S2S3	SC
53	fragrant fritillary *Fritillaria liliacea*	PMLIL0V0C0			G2	S2	1B.2
54	golden eagle *Aquila chrysaetos*	ABNKC22010			G5	S3	
55	great blue heron *Ardea herodias*	ABNGA04010			G5	S4	
56	hoary bat *Lasiurus cinereus*	AMACC05030			G5	S4?	
57	least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
58	legenere *Legenere limosa*	PDCAM0C010			G2	S2	1B.1
59	monarch butterfly *Danaus plexippus*	IILEPP2010			G5	S3	
60	most beautiful jewelflower *Streptanthus albidus ssp. peramoenus*	PDBRA2G012			G2T2	S2.2	1B.2
61	pallid bat *Antrozous pallidus*	AMACC10010			G5	S3	SC
62	pink creamsacs *Castilleja rubicundula var. rubicundula*	PDSCR0D482			G5T2	S2	1B.2
63	robust spineflower *Chorizanthe robusta var. robusta*	PDPGN040Q2	Endangered		G2T1	S1	1B.1
64	rock sanicle *Sanicula saxatilis*	PDAPI1Z0H0		Rare	G2	S2	1B.2
65	saline clover *Trifolium hydrophilum*	PDFAB400R5			G2	S2	1B.2
66	sand-loving wallflower *Erysimum ammophilum*	PDBRA16010			G2	S2	1B.2
67	smooth lessingia *Lessingia micradenia var. glabrata*	PDAST5S062			G2T2	S2	1B.2
68	steelhead - central California coast DPS *Oncorhynchus mykiss irideus*	AFCHA0209G	Threatened		G5T2Q	S2	
69	steelhead - south/central California coast DPS *Oncorhynchus mykiss irideus*	AFCHA0209H	Threatened		G5T2Q	S2	SC
70	tricolored blackbird *Agelaius tricolor*	ABPBXB0020			G2G3	S1S2	SC

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
71	western pond turtle *Emys marmorata*	ARAAD02030			G3G4	S3	SC
72	western snowy plover *Charadrius alexandrinus nivosus*	ABNNB03031	Threatened		G3T3	S2	SC
73	white-tailed kite *Elanus leucurus*	ABNKC06010			G5	S3	
74	woodland woollythreads *Monolopia gracilens*	PDAST6G010			G2G3	S2S3	1B.2

ATTACHMENT 1 – PROJECT LOCATION MAP