

REQUEST TO AMEND A GRANT FROM THE TEXAS WATER DEVELOPMENT BOARD TO TEXAS AGRILIFE EXTENSION ON BEHALF OF THE EDWARDS AQUIFER RECOVERY IMPLEMENTATION PROGRAM

I. General Information

On September 2, 2009, Texas AgriLife Extension (“TAE”) of the Texas A&M University System submitted a grant request to the Texas Water Development Board (“TWDB”), on behalf of the Edwards Aquifer Recovery Implementation Program (“EARIP”), for \$504,375. The request covered the non-federal share of a Section 6 Habitat Conservation Planning Assistance grant (“Section 6 grant”) and the project management contributions of the Texas Commission on Environmental Quality (“TCEQ”), Texas Department of Agriculture (“TDA”), and Texas Parks and Wildlife Department (“TPWD”). The TWDB approved the request at its September meeting. On October 1, 2009, TAE requested that the TWDB grant increase that award to include an additional \$416,156 to include five studies necessary for the timely completion of the EARIP process. The TWDB approved that request on October 14, 2009. With that additional increase, the total amount of the award was \$920,530.

TAE now requests a second amendment to the grant for up to \$210,527 to include money for a study to investigate the feasibility of recharge alternatives to supplement springflows during drought and to peer review the report of the EARIP’s Science Subcommittees regarding recommendations on withdrawal reduction levels and stages for critical period management and the work of Dr. Thomas Hardy on the biological impacts of different flow regimes and other factors on federally listed species.

a. Brief Description of the Proposed Amendment

The 81st Legislature directed the TWDB to allocate out of the Water Assistance Fund No. 480 up to \$1,692,500 for grants and studies related to the Edwards Aquifer Recovery Implementation Program. Rider 22, page VI-55, Chapter 1424 (S.B. 1), Acts of the 81th Legislature, Regular Session, 2009 (the General Appropriations Act). The Legislature intended that this allocation include money for the non-federal share of a Section 6 Habitat Conservation Planning Assistance grant (“Section 6 grant”), the project management contributions of the TPWD, TDA, and TCEQ, the cost of peer review of scientific work as well any other non-project management costs necessary for the timely completion of the program document. The TWDB funded a proposal from TAE, acting on behalf of the EARIP for \$504,375 for: (1) the non-federal share of the Section 6 grant; and (2) the project management contributions of the three State agencies.

The first amendment added five studies that the EARIP has determined are necessary to the successful completion of the EARIP process: (1) improvement of the in-stream flow model for

the Comal and San Marcos systems; (2) evaluation of the feasibility strategies to maintain in-stream habitat during periods of low flow; (3) genetic divergence and variability in the endangered fountain darter; (4) effects of drought on habitat conditions of the endangered fountain darter; and (5) fountain darter movement during drought and normal springflow.

The second amendment to the grant requests money for a study to investigate the feasibility of recharge alternatives to supplement springflows during drought (Task 9) and to peer review the report of the EARIP's Science Subcommittee regarding withdrawal reduction levels and stages for critical period management and the work of Dr. Thomas Hardy on the biological impacts of different flow regimes and other factors on federally listed species (Task 10).

The amended Task and Expense Budgets for the grant including the new projects are attached as Attachments 1 and 2.

b. Explanation of Why the Studies Are Necessary.¹

TASK 9. Investigation of the Feasibility of Recharge Alternatives to Supplement Springflows During Drought (\$78,948).

This Task is essential to the decision-making process for the EARIP. It will examine the feasibility of recharge options to supplement springflows during drought and develop programs consisting of one or more projects that combined have the ability to significantly supplement springflow through a repeat of the drought of record. These combinations will be optimized to provide a given springflow target at least cost. The options developed here may be used in conjunction with or in lieu of withdrawal limits during critical period and other alternatives to achieve the objectives of the EARIP. The Scope of Work for this project is attached hereto as Attachment 3.

TASK 10. Peer Review of the Report of the EARIP's Science Subcommittee Regarding the Withdrawal Reduction Levels For Critical Period Management and the Hardy Study (up to \$131,579)

The Texas Legislature required the EARIP to establish a Science Subcommittee. The EARIP has appointed fifteen well-respected scientists from academia, state and federal agencies, water authorities and purveyors, and the private sector to serve as the Science Subcommittee. In conducting its work, the Science Subcommittee must "consider all reasonably available science" and "base its recommendations solely on the best science available."

Senate Bill 3 directs the Science Subcommittee to analyze species requirements in relation to spring discharge rates and to make recommendations "for withdrawal reduction levels

¹ Each project is treated as a new task. The original grant with the first amendment consisted of eight tasks. Hence the first project here is referred to as "Task 9".

and stages for critical period management” to maintain target spring discharge and Aquifer levels. The Science Subcommittee will complete work on this charge by December 31, 2009.

To support the Science Subcommittee’s work on the withdrawal limitations and assist in the preparation of the program document, the EARIP retained a team of scientists to evaluate the impacts of in-stream flows and other impacts such as recreation, flood events, and other factors on listed species in the Comal and San Marcos Springs systems, including the river reaches just downstream of the spring openings. See <http://earip.tamu.edu/Science/SciCommDocs.cfm> The team is led by Dr. Thomas Hardy from Texas State University. Dr. Hardy is expected to produce a final draft report on this study by November 30, 2009. One half of this study was funded by TWDB in lieu of its contributions to the program operating costs of the EARIP.

The Science Subcommittee recommendations and the Hardy study will inform the decision making process of the EARIP. Both the Subcommittee’s recommendations and the Hardy study need to be peer reviewed to enhance their acceptability to the stakeholders and others and improve prospects for making agreed-upon decisions.

The Scope of Work for this project is attached hereto as Attachment 4.

c. A description of suggested project-monitoring procedures

These studies will be managed by the Program Manager for the EARIP. He will review and approve payment of all invoices which will be submitted quarterly. The costs on each invoice will be broken by expense category and will be accompanied by a progress report showing the progress made for that quarter for each task. The Project Manager also will meet with contractors working on the project on a regular basis to monitor costs and progress on the work. The Project Manager will make regular reports to the EARIP on the project.

Progress on the project and budget will be tracked using Microsoft Project 2007 and Microsoft Excel software.

III. Written Assurances

The proposed additional projects do not duplicate previously completed or on-going research; implementation of research results will be diligently pursued; identification and involvement of potential users will be provided; and if the amendment is awarded.

Dated: December 1, 2009

Dr. Edward G. Smith
Director
Texas AgriLife Extension

SCOPE OF WORK FOR TASK 9

Subtask 1 – Scope Definition and Baseline Analysis

- a) Develop specific technical assumptions and method(s) of evaluating alternatives and procedures for incremental comparisons of the baseline with recharge alternatives for springflow maintenance during drought. The Request for Proposal (Exhibit B) includes examples of tabular, graphical, and textual summaries that will be incorporated in baseline and recharge alternative evaluations.
- b) Analyze the baseline with respect to the number of months and percentage of time each spring system is below a given springflow target discharge using Edwards Aquifer groundwater withdrawal permits subject to critical period stages and withdrawal reductions specified in Senate Bill 3 of the 80th Texas Legislature as the baseline.
- c) Use the springflow targets recommended by the EARIP Expert Science Subcommittee for protection of endangered species at Comal and San Marcos springs as well as 5 cfs at Comal Springs and 45 cfs at San Marcos Springs (to the extent possible using monthly Edwards Aquifer model) to analyze the baseline.
- d) Present the results of Task 1 to the Recharge Facility Feasibility Subcommittee for comment.

Subtask 2 – Source Water Rights

- a) Review and refine estimates of unappropriated and marketable surface water potentially available for recharge enhancement as reported in previous studies. Potential refinements of previous estimates may include accounting for daily (rather than monthly) estimates of water available, ensuring that assumed monthly recharge rates are consistent with infrastructure and hydrogeologic constraints, subordination of Choke Canyon Reservoir / Lake Corpus Christi System storage rights (with mitigation), subordination of priority hydropower rights on the Guadalupe River (with mitigation), accounting for large pending applications for surface water rights, and/or reflection of the current water supply reservation agreement between the Guadalupe-Blanco River Authority and Exelon Generation Company, LLC.
- b) Consider options for water storage including off-channel reservoirs, recharge dams (Type 2), and quarries.
- c) Review and refine estimates of unused, restricted and unrestricted groundwater production permits issued by the Edwards Aquifer Authority (EAA) for municipal, industrial, and irrigation purposes. Potential refinements may include accounting for recent transfers to municipal use through purchase or lease, and/or potential expiration of

transfers across Cibolo Creek. Budget and schedule are based on the assumption that the Edwards Aquifer Authority (EAA) will provide an updated well package for the Edwards Aquifer model that reflects appropriate geographical distribution of groundwater production in accordance with technical assumptions for this study.

Subtask 3 – Project/Program Definition and Modeling

This subtask involves the evaluation of projects with respect to their ability to enhance springflow during the drought of record and the development of programs consisting of one or more projects that combined have the ability to significantly supplement springflow through a repeat of the drought of record. These combinations should be optimized to provide a given springflow target at least cost.

- a) Identify and compile relevant technical information regarding potential projects for springflow enhancement projects including Type 2 (direct percolation) recharge structures, run-of-river diversions, run-of-river diversions with storage (*i.e.*, quarries), and storage of water from the Edwards or other aquifers in quarries or other structures for timed recharge during drought. Define appropriate technical assumptions for evaluation of the effectiveness of each project for springflow enhancement during the drought of record.
- b) Identify and compile relevant technical information regarding potential Edwards Aquifer recharge and recirculation concepts including run-of-river diversions below the springs with delivery to the recharge zone and intra-aquifer pumping and recharge to take advantage of transient storage. Define appropriate technical assumptions for evaluation of recharge and recirculation concepts with respect to maintaining springflow during drought of record, including but not limited to aquifer storage retention times.
- c) Evaluate the effectiveness of Type-2 recharge structures in providing springflow enhancement during a repeat of the drought of record. If the Type-2 structures alone do not meet one or more of the springflow targets set out in Task 1, incrementally supplement those structures through additional supplies, storage options, recirculation, or management strategies (*e.g.*, recharge enhancement with stored water), and identify the increased benefit (*i.e.*, fewer months below a certain spring flow target after adding a given component). Based on these evaluations, select the most promising programs for springflow protection for technical evaluation under Task 4.
- d) Present the results of Tasks 2 and 3 to the Recharge Facility Feasibility Subcommittee for comment.

Subtask 4 – Technical Evaluation

- a) Perform technical evaluations of five (5) recharge alternatives in accordance with Texas Water Development Board (TWDB) guidance for regional water supply planning. It is understood and agreed that at least one (1) of the five (5) recharge alternatives will not include recirculation components. Elements of each technical evaluation will include description of the alternative, water supply modeling, assessment of environmental issues, development of cost estimates, and discussion of implementation issues.
- b) Descriptions of alternatives are expected to include identification and mapping of component facilities as well as discussion of previous studies used as sources of information.
- c) Water supply modeling of alternatives may include applications of both surface water and groundwater models with appropriate recognition of the limitations of such models. Surface and groundwater models will not be computationally linked.
 - i) Surface water modeling may include calculation of water available for recharge, recharge structure operations, contents fluctuations in off-channel and quarry storage sites, translation of modified spring flows to downstream locations, and computation of effects on water available to downstream surface water rights.
 - ii) Groundwater modeling may include simulation of recharge enhancement and/or recirculation concepts and computation of changes in aquifer levels, percentages of time in critical period management, pumping for direct use (subject to critical period withdrawal reductions), and springflow. Based on hypothetical 1000 acft/yr permits in the Uvalde and San Antonio Pools, summaries of results will include illustrations of improvements in use of permitted withdrawal rights relative to the baseline for each alternative. The groundwater modeling is to include the water management module maintained by the EAA.
- d) Assessment of environmental issues will include comparison of the programs to baseline with respect to springflow enhancement and the flow targets identified in Task 1. Focus of this work element will be on quantitative changes in flow and potential effects of infrastructure associated with each alternative.
- e) Cost estimates will be developed in accordance with current TWDB guidance for the 2012 State Water Plan and will include:
 - i) Capital costs for facilities.
 - ii) Related project costs for land acquisition, mitigation, engineering, legal counsel, interest during construction, and contingencies.
 - iii) Annual costs for debt service and operations and maintenance.
 - iv) Annual unit costs for spring flow benefits.
- f) Discussion of implementation issues will include identification of expected permitting requirements and resource conflicts.
- g) At the conclusion of Task 4 and prior to submittal of a draft report, present the results of Task 4 to the Recharge Facility Feasibility Subcommittee for comment.

Subtask 5 – Summary Report and Communications

- a) Compile and interpret summary information developed through technical evaluations and rank recharge alternatives on the bases of improvements relative to baseline conditions, feasibility of implementation, cost, and/or other factors.
- b) Prepare a draft written report that documents baseline definitions, source water rights, recharge alternative definitions, technical evaluations, and ultimate ranking of recharge alternatives. With due consideration of written comments on the draft report provided by and through the Program Manager, prepare a final report. Draft and final reports shall include an Executive Summary and shall be delivered, two (2) each, in hardcopy and electronic formats.
- c) One (1) presentation of the final report and key findings shall be made to the EARIP Steering Committee/Stakeholders.

SCOPE OF WORK FOR TASK 10

Hardy Study

To support the Science Subcommittee's work on the withdrawal limitations and assist in the preparation of the program document, the EARIP retained a team of scientists to evaluate the impacts of in-stream flows and other impacts such as recreation, flood events, and other factors on listed species in the Comal and San Marcos Springs systems, including the river reaches just downstream of the spring openings. See <http://earip.tamu.edu/Science/SciCommDocs.cfm> The team is led by Dr. Thomas Hardy from Texas State University. Dr. Hardy is expected to produce a final draft report on this study by November 30, 2009.

The Texas Legislature required the EARIP to establish a Science Subcommittee of individuals "with technical expertise regarding the Edwards Aquifer system, the threatened and endangered species that inhabit that system, springflows, or the development of withdrawal limitations." The Steering Committee appointed 15 scientists to serve on the Science Subcommittee.

The Legislature directed that, among other things, the Science Subcommittee develop "withdrawal reduction levels and stages" for critical period management. Specifically the legislature provided:

The Edwards Aquifer area expert science subcommittee shall, among other things, analyze species requirements in relation to spring discharge rates and aquifer levels as a function of recharge and withdrawal levels. Based on that analysis and the elements required to be considered by the authority under Section 1.14 of this article, the expert science subcommittee shall, through a collaborative process designed to achieve consensus, develop recommendations for withdrawal reduction levels and stages for critical period management including, if appropriate, establishing separate and possibly different withdrawal reduction levels and stages for critical period management for different pools of the aquifer needed to maintain target spring discharge and aquifer levels.

Section 1.26A(j). The EARIP refers to these recommendations as the "j" charges. The report on the "j" charges will be available by January 1, 2010.

Contractor will review the Science Subcommittee's recommendations regarding the "j" charges and the Hardy Study. For each review, Contractor will assemble a panel of at least six scientists including scientists will have expertise in modeling of in-stream flow impacts, aquatic biologists, and hydrologists.

Subtask 1: Selection of Reviewers

Contractor will follow its normal procedures for selecting highly-qualified reviewers to review the recommendations. Contractor will consult the In Stream Flow Counsel to assist it in identifying the experts. The contact for the current In-stream Flow Council is:

Tom Annear
Water Management Coordinator
Wyoming Game and Fish Department
5400 Bishop Blvd.
Cheyenne, WY 82006
307-777-4555 (office)
307-631-1296 (cell)
307-777-4611 (fax)
Tom.Annear@wgf.state.wy.us

Contractor will develop a file for each scientist considered as a reviewer. The reasons for selecting (or not selecting) that scientist will be included in that file.

After considering the available pool of reviewers, Contractor will select those reviewers who best meet the criteria of scientific eminence and experience, and who the Contractor believes will exhibit the criteria of independence and impartiality. Contractor will interview the reviewers, record their responses, and ask them to sign statements attesting that they have no conflicts of interest (as per National Academy guidelines).

To ensure that the review is independent of the stakeholders and interested parties, neither the EARIP Stakeholders, the EARIP Science Subcommittee, the EARIP's contractors, nor the EARIP's Program Manager will be involved in the selection of the reviewers.

Subtask 2: Preparation of Reviewers

The EARIP will provide the Consultant copies of the Hardy Report and Science Subcommittee report on the "j" charges. After Consultant has selected reviewers, Contractor will provide reviewers with these documents and acquaint them with the availability other background information available at <http://earip.tamu.edu/Science/Documents.aspx>.

With respect to the Science Subcommittee report, Contractor will conduct a conference call with the reviewers and the Chair of the Science Subcommittee before the review begins to discuss the charge of the Science Subcommittee, and any general questions about the process for producing the recommendations.

With regards to both the Hardy Study and Science Subcommittee reports, the Contractor shall conduct a conference call before the review begins with the reviewers to discuss the scope of the review and to facilitate discussions ahead of the actual review. Consultant will work with

individual reviewers to ensure that they understand the materials, the review requirements, and their individual tasks.

Subtask 3: Preparation of the Administrative Record

Contractor will maintain a clear record of all materials disseminated to the reviewers, the communications between the Contractor and the reviewers and among the reviewers, and individual reviewer's responses. These materials will be provided to the Program Manager at the completion of the review process.

Subtask 4: Preparation of review

To obtain the individual opinions of reviewers, Contractor will require that each reviewer provide written responses to a series of review questions. Contractor will insure that the reviewers understand that the opinions are to be substantive not simply correcting the format, and typographical errors, and providing stylistic suggestions. Contractor will also allow reviewers to discuss among themselves their responses, the issues involved, and to modify their written responses in light of such discussions. The results of this process will be detailed in a draft final report that shall include the written responses of Contractor will reflect any differences of opinion among the reviewers in the final report.

After a draft final report has been completed, Contractor will allow the Science Subcommittee to interact with the review panel under Contractor supervision, by asking questions, or by providing additional material as requested by the reviewers. This will be accomplished through a recorded conference call. At the close of the interactive process the panel will finalize the review.

Subtask 5: Deliverables

Prepare a final report on the review of documents, including individual reviewer's opinions, and a full Administrative Record (to include all e-mails, drafts, ancillary materials).

Attachment 1: Texas Agrilife Extension Amended Task Budget				
		TWDB	FEDERAL MATCH	Total
TASK 1	HCP DOCUMENT DEVELOPMENT			
Subtask 0a	Federal Match Grant Administration	\$ -	\$ 45,000	\$ 45,000
Subtask 0b	TWDB Grant Administration	\$ 15,000	\$ -	\$ 15,000
Subtask 1	Preparation of a plan for developing the program document	\$ 15,000	\$ 45,000	\$ 60,000
Subtask 2	Participate in the decision-making process	\$ 105,000	\$ 315,000	\$ 420,000
Subtask 3	Preparation of the program document	\$ 150,000	\$ 450,000	\$ 600,000
Subtask 4	NEPA Scoping Process	\$ 15,000	\$ 45,000	\$ 60,000
Subtask 5	Interface with FWS	\$ 15,000	\$ 45,000	\$ 60,000
TASK 2	FACILITATION			
Subtask 0a	Federal Match Grant Administration	\$ -	\$ 5,625	\$ 5,625
Subtask 0b	TWDB Grant Administration	\$ 1,875	\$ -	\$ 1,875
Subtask 1	Development of Project Scoping, Situation Assessment and Work Plan	\$ 7,284	\$ 21,853	\$ 29,137
Subtask 2a	Facilitate Development of Goals and Objectives	\$ 3,894	\$ 11,680	\$ 15,574
Subtask 2b	Facilitate the Evaluation of Technical Studies	\$ 5,720	\$ 17,161	\$ 22,881
Subtask 2c	Facilitate the Development of Covered Activities, including Resolution of ESA issues	\$ 20,602	\$ 61,806	\$ 82,408
TASK 3	PROJECT MANAGEMENT			
Subtask 0b	TWDB Grant Administration	\$ 7,143	\$ -	\$ 7,143
Subtask 1	Manage the day-to-day operation of the EARIP	\$ 142,857	\$ -	\$ 142,857
TASK 4	Intensive Management Areas			
Subtask 0	TWDB Grant Administration	\$ 6,990	\$ -	\$ 6,990
Subtask 1	Project Management	\$ 10,458	\$ -	\$ 10,458
Subtask 2	Stakeholder Meetings	\$ 23,819	\$ -	\$ 23,819
Subtask 3	Habitat Evaluation	\$ 28,708	\$ -	\$ 28,708
Subtask 4	Scenarios Description	\$ 18,422	\$ -	\$ 18,422
Subtask 5	Low-Flow Experimentation	\$ 14,601	\$ -	\$ 14,601
Subtask 6	Conceptual Engineering Design	\$ 22,061	\$ -	\$ 22,061
Subtask 7	Data Analysis and Report Preparation	\$ 21,730	\$ -	\$ 21,730
TASK 5	Hardy Model Update			
Subtask 0	TWDB Grant Administration	\$ 8,297	\$ -	\$ 8,297
Subtask 1	Field collection of vegetative polygons & percent cover	\$ 41,708	\$ -	\$ 41,708
Subtask 2	Hydraulic modeling of the Comal and San Marcos Rivers	\$ 25,460	\$ -	\$ 25,460
Subtask 3	Development of diel water quality/temperature model	\$ 51,310	\$ -	\$ 51,310
Subtask 4	Habitat modeling in Comal and San Marcos River systems	\$ 47,460	\$ -	\$ 47,460
TASK 6	Genetic Study (FWS)			
Subtask 0	TWDB Grant Administration	\$ 2,077	\$ -	\$ 2,077
Subtask 1	Collect genetic data	\$ 18,840	\$ -	\$ 18,840
Subtask 2	Analyze results	\$ 18,406	\$ -	\$ 18,406
Subtask 3	Write report	\$ 4,300	\$ -	\$ 4,300
TASK 7	Effects of Drought On Habitat Conditions (FWS)			
Subtask 0	TWDB Grant Administration	\$ 1,956	\$ -	\$ 1,956
Subtask 1	Collection of data	\$ 26,240	\$ -	\$ 26,240
Subtask 2	Write report	\$ 12,870	\$ -	\$ 12,870
TASK 8	Fountain Darter Movement Drought Study (FWS)			
Subtask 0	TWDB Grant Administration	\$ 497	\$ -	\$ 497
Subtask 1	Collection of data	\$ 6,826	\$ -	\$ 6,826
Subtask 2	Write report	\$ 3,119	\$ -	\$ 3,119
Task 9	Optimization Study¹			
Subtask 0	TWDB Grant Administration	\$ 3,948	\$ 3,948	\$ 7,896
Subtask 1	Scope Definition and Baseline Analysis	\$ 6,500	\$ 6,500	\$ 13,000
Subtask 2	Source Water Rights	\$ 8,000	\$ 8,000	\$ 16,000
Subtask 3	Project/Program Definition and Modeling	\$ 12,500	\$ 12,500	\$ 25,000
Subtask 4	Technical Evaluation	\$ 30,500	\$ 30,500	\$ 61,000
Subtask 5	Summary Report and Communications	\$ 17,500	\$ 17,500	\$ 35,000
Task 10	Peer Review			
Subtask 0	TWDB Grant Administration	\$ 6,579	\$ -	\$ 6,579
Subtask 1	Selection of Reviewers	\$ 10,000	\$ -	\$ 10,000
Subtask 2	Preparation of Reviewers	\$ 17,500	\$ -	\$ 17,500
Subtask 3	Preparation of the Administrative Record	\$ 10,000	\$ -	\$ 10,000
Subtask 4	Preparation of Review	\$ 85,000	\$ -	\$ 85,000
Subtask 5	Final Report	\$ 2,500	\$ -	\$ 2,500
TOTAL		\$ 1,131,057	\$ 1,142,073	\$ 2,273,130

¹ Match for Task 9 is from the San Antonio Water System

Attachment 2: Texas Agrilife Extension Amended Expense Budget			
	TWDB	FEDERAL MATCH	Total
Salaries & Wages	\$ 82,310	\$ -	\$ 82,310
Fringe	\$ 14,568	\$ -	\$ 14,568
Travel	\$ 9,306	\$ -	\$ 9,306
Overhead (office rental)	\$ 9,187	na	\$ 9,187
Profit	\$ -	\$ -	\$ -
Subcontractor Services: USGS, Accounting, Auditing services	\$ 20,067	na	\$ 20,067
Other Expenses:			
Expendable Supplies	\$ 3,649	na	\$ 3,649
Communications	\$ 3,769	na	\$ 3,769
Reproduction	\$ -	na	\$ -
TWDB Grant Administration	\$ 7,143	\$ -	\$ 7,143
Subcontractor Services(facilitation):			
Collaborative Processes LLC	\$ 15,738	\$ 47,214.00	\$ 62,952
Consensus Building Institute	\$ 12,249	\$ 36,746.00	\$ 48,995
Center for Natural Resources and Environmental Policy	\$ 9,514	\$ 28,540.00	\$ 38,054
Federal Match Grant Administration	\$ -	\$ 5,625.00	\$ 5,625
TWDB Grant Administration	\$ 1,875	\$ -	\$ 1,875
Subcontractor Services (HCP Contractor)	\$ 300,000	\$ 900,000.00	\$ 1,200,000
Federal Match Grant Administration	\$ -	\$ 45,000.00	\$ 45,000
TWDB Grant Administration	\$ 15,000	\$-	\$ 15,000
Subcontractor Services			
BIO-WEST	\$139,799	\$ -	\$139,799
TWDB Grant Administration	\$6,990	\$ -	\$6,990
Subcontractor Services			
Texas State University (Hardy)	\$165,938	\$ -	\$165,938
TWDB Grant Administration	\$8,297	\$ -	\$8,297
Subcontractor Services			
FWS	\$90,601	\$ -	\$90,601
TWDB Grant Administration	\$4,530	\$ -	\$4,530
Subcontractor Services (Optimization Study) ¹			
HDR Engineering	\$ 75,000	\$ 75,000	\$ 150,000
TWDB Grant Administration	\$ 3,948	\$ 3,948	\$ 7,896
Subcontractor Services (Peer Review)			
Contractor	\$ 125,000	\$ -	\$ 125,000
TWDB Grant Administration	\$ 6,579	\$ -	\$ 6,579
Total	\$ 1,131,057	\$ 1,142,073	\$ 2,273,130

¹ Match for Task 9 is from the San Antonio Water System